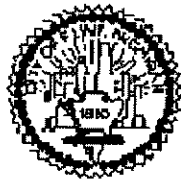


City of Flint, Michigan

*Third Floor, City Hall
1101 S. Saginaw Street
Flint, Michigan 48502
www.cityofflint.com*



Meeting Agenda - Final

Monday, August 23, 2021

4:30 PM

ELECTRONIC PUBLIC MEETING

SPECIAL AFFAIRS COMMITTEE

*Maurice D. Davis, Chairperson, Ward 2
Allan Griggs, Vice Chairperson, Ward 8*

*Eric Mays, Ward 1
Kate Fields, Ward 4
Herbert J. Winfrey, Ward 6
Eva Worthing, Ward 9*

*Santino J. Guerra, Ward 3
Jerri Winfrey-Carter, Ward 5
Monica Galloway, Ward 7*

Inez M. Brown, City Clerk

Davina Donahue, Deputy City Clerk

SPECIAL PUBLIC NOTICE -- ELECTRONIC PUBLIC MEETING**PUBLIC NOTICE
FLINT CITY COUNCIL ELECTRONIC PUBLIC MEETING**

On Friday, October 5, 2020, the Michigan Supreme Court (MSC) issued an order declaring that the Emergency Powers of Governor (EPG) Act as an unconstitutional delegation of legislative authority, which was the primary authority relied on by Governor Whitmer for her COVID-19 related executive orders. Subsequently, Governor Whitmer requested that the MSC clarify that their order does not go into effect until October 30, 2020. On Monday October 12, 2020, the Michigan Supreme Court rejected Governor Whitmer's request to delay the effect of its decision to strike down the EPG. On, Tuesday, October 13, 2020, Senate Bill 1108 passed, amending the Open Meetings Act to allow municipalities to hold electronic meetings. On Friday, October 16, 2020, Governor Whitmer signed into law Senate Bill 1108 amending the Open Meetings Act. Subsequently, on December 22, 2020, Public Act 267 of 1976 was amended through Senate Bill 1246 extending the electronic meetings with no reason through March 31, 2021. The act also allows that after March 31, 2021, electronic meetings may be held if a local state of emergency was declared. On March 23, 2020, the Flint City Council extended Mayor Neeley's declaration of emergency indefinitely due to the COVID-19 pandemic. Therefore, the following meeting will be held electronically:

**Flint City Council Special Affairs Committee
Monday, August 23, 2021, at 4:30 p.m.**

The public and media may listen to the meeting online by live stream at <<https://www.youtube.com/c/FlintCityCouncilMeetings>> or through Start Meeting Solution by dialing (617) 944-8177. If unable to call in, please dial (206) 451-6011.

1. In order to speak during the PUBLIC SPEAKING PERIOD of each meeting by telephone, participants will also call (617) 944-8177. If unable to call in, please dial (206) 451-6011:
 - a. All callers will be queued and muted until the Public Speaking portion of each agenda;
 - b. Public speakers will be unmuted in order and asked if they wish to address the City Council ON ANY SUBJECT;
 - c. Public speakers should state and spell their name for the record and will be allowed two (2) minutes for public speaking during each meeting;
 - d. The speaker will be returned to mute after the 2 minutes have expired;
 - e. After the telephonic public speakers for the last committee meeting are completed, emailed public comments will be read by the City Clerk. All emailed public comments will be timed for 2 minutes;
 - f. Per Rules Governing Meetings of the Council (Rule 7.1 VII), there will only be one speaking opportunity per speaker per meeting.Consequently, public participants who call in and speak during the public speaking period of the meetings WILL NOT have written comments as submitted read by the City Clerk.

2. The public may send public comments by email to CouncilPublicComment@cityofflint.com no later than 10 minutes prior to the meeting start time of 4:30 p.m.

3. Persons with disabilities may participate in the meeting by the above-mentioned means or by emailing a request for an accommodation to CouncilPublicComment@cityofflint.com, with the subject line Request for Accommodation, or by contacting the City Clerk at (810) 766-7418 to request

accommodation - including but not limited to interpreters.

If there are any questions concerning this notice, please direct them to City Council office at (810) 766-7418.

ROLL CALL

MEMBER REMOTE ANNOUNCEMENT

Pursuant to the newly revised Open Meetings Act, each Council member shall state that they are attending the meeting remotely and shall state where he or she is physically located (county or city and state).

MEMBER CONTACT INFORMATION

Eric Mays - (810) 922-4860; Maurice Davis - mdavis@cityofflint.com; Santino Guerra - sguerra@cityofflint.com; Kate Fields - kfields@cityofflint.com; Jerri Winfrey-Carter - jwinfrey-carter@cityofflint.com; Herbert Winfrey - (810) 691-7463; Monica Galloway - mgalloway@cityofflint.com; Allan Griggs - agriggs@cityofflint.com; Eva Worthing - eworthing@cityofflint.com.

PROCEDURES ON CONDUCTING ELECTRONIC MEETINGS

All boards and commissions must adhere to all laws established under the Michigan Compiled Laws and in accordance with the revisions to the Open Meetings Act adopted in Senate Bill 1246, as passed on December 17, 2020, and signed into law on December 22, 2020, and subsequent amendments that may be adopted.

READING OF DISORDERLY PERSONS CITY CODE SUBSECTION

Any person that persists in disrupting this meeting will be in violation of Flint City Code Section 31-10, Disorderly Conduct, Assault and Battery, and Disorderly Persons, and will be subject to arrest for a misdemeanor. Any person who prevents the peaceful and orderly conduct of any meeting will be given one warning. If they persist in disrupting the meeting, that individual will be subject to arrest. Violators shall be removed from meetings.

PUBLIC SPEAKING

Per the amended Rules Governing Meetings of the Council (as adopted by the City Council on Monday, June 12, 2017), three (3) minutes per speaker. Only one speaking opportunity per speaker.

COUNCIL RESPONSE

Per the amended Rules Governing Meetings of the Council (as adopted by the City Council on Monday, June 12, 2017), Councilpersons may respond to any public speaker, but only one response and only when all public speakers have been heard. Individual council response is limited to two minutes.

RESOLUTIONS

210401 Grant Acceptance/Budget Amendment/Transfer of Funds/Charles Stewart Mott Foundation Grant/Event Policing & Public Safety

Resolution resolving that the appropriate city officials, upon City Council's approval, are authorized to do all things necessary to accept the grant funds set forth in the grant agreement of C.S. Mott Grant #G-2019-04495, in the amount of \$134,187.00, to appropriate revenue and expenditure amounts, and to make the grant funds available from January 1, 2021, through December 31, 2021. [NOTE: The Charles

Stewart Mott Foundation has awarded a grant to the City of Flint for Flint Police Department coverage at all downtown events, including traffic redirection and street closures. The amount awarded, \$100,000.00, will be combined with grant money carried over from last year (\$34,187.00) for a total this year of \$134,187.00.]

- 210404** Budget Amendment/ReCAST (Resiliency in Communities After Stress & Trauma) Grant/U.S. Department of Health & Human Services (DHHS)/Substance Abuse & Mental Health Services Administration (SAMHSA)

Resolution resolving that the appropriate city officials, upon City Council's approval, are authorized to do all things necessary to abide by the terms and conditions of U.S. Department of Health and Human Services Substance Abuse and Mental Health Services Administration Grant #1H79SM084918-01, in the amount of \$1,000,000.00, renewable up to four (4) years, for a total of \$5,000,000.00, to appropriate revenue and expenditure amounts using Grant Code FHHS21RECAST, and make the grant funds available in the current year and any subsequent fiscal years that the funding continues to remain available by the grantor. [NOTE: The Flint ReCAST is intended to assist high-risk youth and families in the City of Flint impacted by the Flint Water Emergency.]

- 210406** Approval/FY2023-FY2027 Vision, Mission, and Goals of the Strategic Plan

Resolution resolving that the City of Flint FY2023-FY2027 Vision, Mission, and Goals of the Strategic Plan are hereby approved as set forth in the attached document.

- 210407** Approval/Issuance of Sewage Disposal System Revenue Bond/Authorization/Publication of Notice

Resolution resolving that the Flint City Council adopted a resolution on July 26, 2021, authorizing the issuance of the City's Sewage Disposal System Revenue Bond, issued in one or more series, from time to time, in an aggregate principle amount not to exceed \$46,000,000.00, as follows: Section 1 -- Definitions; Section 2 -- Necessity, Public Purpose; Section 3 -- Estimated Cost; Period of Usefulness; Section 4 -- Issuance of Bonds; Section 5 -- Series 2021 Bond Terms; Section 6 -- Payment of Bonds; Pledge of Net Revenues; Section 7 -- Prior Redemption; Section 8 -- Paying Agent and Registration; Section 9 -- Sale of Bonds; Section 10 -- Bond Form; Section 11 -- Authorized Officer; Section 12 -- Execution of Bonds; Section 13 -- Rights of Bondholders; Section 14 -- Management of System; Section 15 -- Supervised Bank Accounts; Section 16 -- Funds and Accounts; Section 17 -- Investment of Funds; Section 18 -- Depository and Funds on Hand; Section 19 -- Rates and Charges; Section 20 -- Reimbursement; Section 21 -- No Free Service; Section 24 -- Revenue Bond Covenants; Section 23 -- Additional Bonds; Section 23 -- Defeasance; Section 25 -- Revenue Sharing Pledge; Section 26 -- Fiscal Year of System; Section 27 -- Contract with Bondholders; Section 28 -- Tax Covenants; Section 29 -- Publication and Recordation; Section 30 -- Resolution Subject to Michigan Law; Section 31 -- Section Headings; Section 32 -- Severability; Section 33 -- Conflict; and Section 34 -- Effective Date of Resolution. [NOTE: Per Section 29, Publication and Recordation, this resolution shall be published once in full in a

newspaper of general circulation in the Issuer qualified under state law to publish legal notices, and the same shall be recorded in the records of the Issuer and such recording authenticated by the signature of the Issuer Clerk.]

APPOINTMENTS

210157 Appointment/Water System Advisory Council/Nancy Love

Resolution resolving that Mayor Neeley hereby appoints Nancy Love (1351 Beal Avenue, Ann Arbor, MI 48109) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

210229 Appointment/Water System Advisory Council/Shawn P. McElmurry

Resolution resolving that Mayor Neeley hereby appoints Shawn P. McElmurry (2153 Engineering Building, 5050 Anthony Wayne Drive, Detroit, MI 48202) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

210395 Appointment/Water System Advisory Council/Jaron Houston

Resolution resolving that Mayor Neeley hereby appoints Jaron Houston (2621 East Court Street, Flint, MI 48503) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

210396 Appointment/Water System Advisory Council/Gina Smith

Resolution resolving that Mayor Neeley hereby appoints Gina Smith (210 West Flint Park Boulevard, Flint, MI 48505) to serve on the Water System Advisory Council. [NOTE: Pursuant to the State of Michigan's administrative rules, water suppliers serving a population of 50,000 or more, shall create a Water System Advisory Council. The purpose of the Council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.]

ORDINANCES

DISCUSSION ITEMS

ADDITIONAL COUNCIL DISCUSSION

ADJOURNMENT



RESOLUTION NO.: 210401
PRESENTED: AUG 18 2021
ADOPTED: _____

RESOLUTION TO ACCEPT A GRANT FROM CS MOTT FOUNDATION FOR EVENT POLICING AND PUBLIC SAFETY

BY THE CITY ADMINISTRATOR:

Whereas, the Charles Stewart Mott Foundation has awarded a grant to the City of Flint for Flint Police Department coverage at all downtown events, including traffic redirection and street closures.

Whereas, Grant #G-2019-04495 has been awarded in the amount of \$100,000.00 for Flint Police Department coverage for all downtown events, including traffic redirection and street closures.

Whereas, Grant #G-2017-02081 has been approved to carryover a total of \$34,187.00 and combine these dollars with Grant #G-2019-04495.

Whereas, the FY21 adopted budget must be amended to include the awarded funds,

IT IS RESOLVED that the appropriate City officials are authorized to do all things necessary to accept the grant funds set forth in the grant agreement of C.S. Mott Grant #G-2019-04495 in the amount of \$134,187.00 to appropriate revenue and expenditure amounts and to make the grant funds available from January 1, 2021 through December 31, 2021.

Approved as to Form:

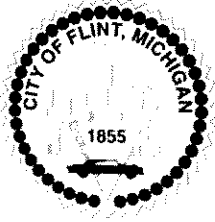
Angela Wheeler
Angela Wheeler (Aug 11, 2021 16:09 EDT)
Angela Wheeler, Chief Legal Officer

Approved as to Finance:

Jennifer Ryan
Jennifer Ryan (Aug 11, 2021 15:08 EDT)
Shelbi Frayer, Chief Financial Officer

CLYDE D EDWARDS
CLYDE D EDWARDS (Aug 11, 2021 18:07 EDT)
Clyde D. Edwards, City Administrator

Kate Fields, Council President



RESOLUTION NO.: _____

PRESENTED: _____

ADOPTED: _____

RESOLUTION STAFF REVIEW

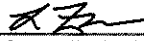
Date: July 28, 2021

Agenda Item Title:

RESOLUTION TO ACCEPT A GRANT FROM CS MOTT FOUNDATION FOR EVENT POLICING AND PUBLIC SAFETY

Prepared by:

Lottie Ferguson, Chief Resilience Officer


Lottie Ferguson (Aug 11, 2021 13:42 EDT)

Background/Summary of Proposed Action:

In recent years, the downtown area has developed into a central attraction for Genesee County residents and City of Flint residents. It has been awakened with new restaurants, shops, opportunities, and has been a place for new artists and local organizations to showcase their talents. The past year has been extremely difficult to navigate new mandates and procedures to ensure safety during the COVID-19 pandemic. The City of Flint will use these funds to continue protecting all individuals who come to the downtown area.

This grant will be carrying over a total of \$34,187 in unexpended funds from Grant# G-2017-02080 and will be combining these funds into Grant# G-2019-04495 to cover the expenses of City of Flint Police Department wages, fringe benefits, and other costs associated with the department when providing coverage at downtown events, including traffic redirection and street closures.

As per the Notice of Award from the CS Mott Foundation from May 4, 2021, the entire new grant plus carryover will break down as shown below;

Budget Item	Expenditures
Traffic (Street Closures/Redirections)	\$51,365.95
Police Fringes and Salaries	\$70,079.35
Admin - 9.5%	\$12,741.70
Total	\$134,187.00



RESOLUTION NO.: _____

PRESENTED: _____

ADOPTED: _____

Financial Implications:

A grant was received in the amount of \$100,000.00 for one-year to cover the expenses for wages, fringe benefits, and other costs associated with the City of Flint Police Department when covering downtown events, including traffic redirection and street closures..

Budgeted Expenditure: Yes X No _____

After the remaining balances that are carrying over are taken out, the \$100,000 in new funding granted will be distributed as shown;

Account Number & Grant Code	Account Name	Amount
296-315.100-801.900 PCSM-EVENT21	Patrol Bureau Administration	\$42,662.35
296-443.201-801.900 PCSM-EVENT21	Traffic Engineering Service Maintenance	\$44,595.95
296-443.201-969.100 PCSM-EVENT21	Indirect (Administration)	\$12,741.70

Pre-encumbered: Yes ___ No X

Requisition #: _____

Other Implications:

Staff Recommendation: Staff recommends approval of this resolution.

APPROVAL Martita Moffett-Page
Martita Moffett-Page (Aug 11, 2021 15:05 EDT)



CHARLES STEWART
MOTT FOUNDATION

July 22, 2021

The Honorable Sheldon Neeley
Mayor
City of Flint
1101 S. Saginaw Street
Flint, MI 48502-1420

Project: Event Policing and Public Safety
(Grant No. 2019-04495)

Dear Mayor Neeley:

We are pleased to inform you that the Charles Stewart Mott Foundation has approved a grant in the amount of \$100,000 to the City of Flint for the above-referenced project for the period January 1, 2021 through December 31, 2021.

The Mott Foundation has made a one-time exception and approved the carryover of \$34,187 of unexpended funds from Grant No. 2017-02080 to this grant for a combined total of \$134,187. The \$134,187 balance is subject to the terms and conditions of this letter and shall be used by the City of Flint for the Event Policing and Public Safety project, as described in your proposal submitted May 4, 2021.

Grant Payments

This grant will be paid upon receipt of your acceptance.

The Mott Foundation reserves the right to discontinue, modify, or withhold any payments that might otherwise be due under this grant or any other outstanding grant, to require a refund of any unexpended grant funds, or both, if, in the Mott Foundation's judgment, any of the following occur with respect to this grant or any other grant from the Mott Foundation to your organization:

1. Grant funds have been used for purposes other than those contemplated by this commitment letter.
2. Such action is necessary to comply with the requirements of any law or regulation affecting either your organization's or the Mott Foundation's responsibilities under the grant.

The Honorable Sheldon Neeley
July 22, 2021
Page 2 (Grant No. 2019-04495)

3. Your organization ceases to conduct this project, or circumstances change such that it becomes impractical or impossible for you to carry out this project.
4. Your organization's performance under this grant has not been satisfactory, as determined by the Mott Foundation in its reasonable discretion. Although the Mott Foundation expects your organization to work toward achieving the goals and objectives described in your proposal, unless a specific condition (or barrier) is identified above, the failure to obtain any specific goal or objective will not, alone, be cause for the Mott Foundation to determine that your organization's performance has not been satisfactory, but may be relevant in determining whether your overall performance has (or has not) been satisfactory.
5. The Mott Foundation has not received and approved all reports due from your organization prior to the payment date.

The Mott Foundation's judgment on these matters will be final and binding.

Mott Foundation Contact Person and Resources

Please direct all correspondence and questions relating to this grant to Jennifer Acree, Program Officer.

For general information regarding Mott Foundation grant procedures and other grant related questions, we encourage you to visit the Grantee Resources section of our website at www.mott.org/grantee-resources.

Another resource available to grantees is the Grantee Portal. The Grantee Portal provides real-time information on your grant's reporting requirements and due dates. By using the Grantee Portal, you may view a copy of this commitment letter, download copies of forms, and upload required reports directly to the Mott Foundation. For more information about the Grantee Portal, contact your program officer or login at <https://mott.fluxx.io>. The grant's primary project contact, Sheldon Neeley, can login at <https://mott.fluxx.io> with their registered email address.

Use of Grant

Under United States law, Mott Foundation grant funds may be expended only for charitable, scientific, literary, religious, or educational purposes, as specified in section 170(c)(2)(B) of the Internal Revenue Code of 1986, as amended. This grant is to be expended solely in support of the objectives detailed in your proposal submitted May 4, 2021.

Your organization shall not, directly or indirectly, engage in, support or promote violence or terrorist activities.



The Honorable Sheldon Neeley
July 22, 2021
Page 3 (Grant No. 2019-04495)

Your organization confirms that this project is under its complete control. Your organization further confirms that it has and will exercise control over the process of selecting any consultant, that the decision made or that will be made on any such selection is completely independent of the Mott Foundation, and further, that there does not exist an agreement, written or oral, under which the Mott Foundation has caused or may cause the selection of a consultant.

Mott Foundation grant funds may not be used for lobbying expenditures.

Mott Foundation grant funds may not be used for re-granting to secondary organizations.

Your organization may charge this grant only for expenditures incurred or services performed during the grant period specified in this letter.

Your organization may charge this grant only for line item expenditures that were included in your approved budget as referenced in the "Reports" section of this letter. The addition of new line items must have the prior written approval of the Mott Foundation.

Expenditures may not exceed the approved budget amount for the following line item:

- Admin.

Grant Accounting

Your organization is required to maintain financial records for expenditures and receipts relating to this grant, retaining these records and other supporting documentation for five years after the grant's termination date.

Your organization is also required to permit the Mott Foundation to have reasonable access to your files, records and personnel during the term of this grant and for five years thereafter for the purpose of making financial audits, verifications, or program evaluations.

Unless a specific condition (or barrier) is listed in the "Grant Payments" section of this letter, the Mott Foundation does not intend, in its own financial statements, to treat this grant as a "conditional contribution" described under Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2018-08. Your organization should make its own determination as to how to account for this grant in your financial statements and is not required (under FASB ASU 2018-08) to adopt the same accounting treatment as the Mott Foundation.

Reports

The Mott Foundation requires the following report to be submitted for this grant:

Report Type:
Final Report

For Period Ending:
December 31, 2021

Due on or Before:
February 1, 2022



The Honorable Sheldon Neeley
July 22, 2021
Page 4 (Grant No. 2019-04495)

The report must include the following parts, which must be submitted together:

1. A **narrative report** summarizing what was accomplished by the expenditure of funds during the reporting period. Your grant proposal indicated that your organization will work toward achieving certain goals and objectives during the grant period, and the narrative report should include a description of progress made toward achieving the following reporting objectives:
 - a. Number of festivals and events supported by the grant.
 - b. Criteria for funding assistance requests.
 - c. Data on increase of public safety presence for events and festivals due to grant support including officer present.
 - d. Evidence of maintenance of safe environment for festival goers and participants.
2. A **financial report** showing the approved budget, expenditures against each line item since the start of the grant, and balances remaining (or overruns) for each line item. For the final report, you must explain all overrun variances that exceed both one thousand dollars (\$1,000) and ten percent (10%) of the budgeted line item amount.

Your organization must report against the approved budget of \$134,187 submitted on June 4, 2021 (which may be greater than the amount of the Mott Foundation grant). If the approved budget covers multiple years, each report should include cumulative expenditures since the beginning of the grant period. The report must also include a summary of all funding received for this project (listed by source and grant period).

Unless a specific condition (or barrier) is listed in the “Grant Payments” section of this letter, the Mott Foundation is not requiring that your organization achieve any of the reporting objectives listed above as a condition (or barrier) to your receipt and retention of the grant funds. Rather, the reporting objectives are meant to capture your progress in achieving the goals and objectives identified in your grant proposal.

Reports and other grant requirements should be submitted online via the Mott Foundation’s Grantee Portal. A default portal account has been setup for the primary project contact. The project contact can login at <https://mott.fluxx.io> with their registered email address. Please contact your program officer if you need assistance or to change the project contact. Standard reporting templates and other forms are available for download via the Grantee Portal.



The Honorable Sheldon Neeley
July 22, 2021
Page 5 (Grant No. 2019-04495)

Undisbursed Funds

Your organization is required to return any undisbursed project funds on a prorata basis to the Mott Foundation within two months after the end of this grant. The prorata refund is computed by multiplying the total undisbursed project funds by the ratio of Mott Foundation funding to total funding received for this project for the grant period. Any refund of less than \$100 will be waived.

Compliance with Laws

Your organization may not use any portion of the grant funds to undertake any activity for any purpose other than one specified in section 170(c)(2)(B) of the Internal Revenue Code. Further, the Mott Foundation reserves the right to discontinue, modify, or withhold any payments that might otherwise be due under this grant or to require a refund of any unexpended grant funds if, in the Mott Foundation's judgment, such action is necessary to comply with the requirements of any law or regulation.

Public Information

The Mott Foundation will include information on this grant in its periodic public reports. The Mott Foundation also welcomes grantees to make announcements of grants upon return of this signed commitment letter. A copy of any release should be sent to the Mott Foundation's Communications Department prior to its dissemination. The department is available to provide assistance in your communications efforts.

Acceptance

This letter contains the entire agreement between your organization and the Charles Stewart Mott Foundation, and there are no conditions or stipulations, oral or written, governing the use of the grant funds other than those contained in this letter.

If your organization agrees to the grant conditions as stated, please **sign and return, via DocuSign**, one complete copy of this letter **with an electronic signature** of an appropriate representative of your organization in the space provided. In countersigning this letter, this individual represents to the Mott Foundation that he/she has the authority to sign this letter on the organization's behalf.

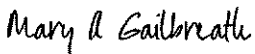
This grant may be withdrawn if the Mott Foundation has not received your acceptance within one month from the date of this letter.



The Honorable Sheldon Neeley
July 22, 2021
Page 6 (Grant No. 2019-04495)

On behalf of the Mott Foundation, I would like to extend our best wishes for the success of this endeavor.

Sincerely,

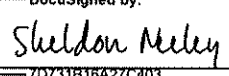
DocuSigned by:

8A59BF0328DC4EB
Mary A. Gailbreath
Vice President-Administration and Secretary/Treasurer

MAG:cmm

Our organization acknowledges that appropriate personnel have read and understand this letter, that its terms and conditions are acceptable to us, and that we will comply with those terms and conditions.

Name of Grantee: City of Flint

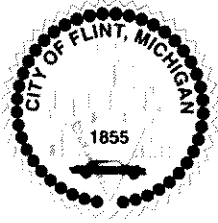
Printed Name of Authorized Signer: Sheldon Neeley

Authorized Signature: 
7D731B318A27CA03
(This must be an original signature of an authorized representative of the organization.)

Title: Mayor, City of Flint

Date Signed: 7/23/2021





RESOLUTION NO.: 210404
PRESENTED: AUG 18 2021
ADOPTED: _____

**RESOLUTION AUTHORIZING THE ACCEPTANCE AND APPROVING A BUDGET
AMENDMENT FOR THE FLINT ReCAST (Resiliency in Communities After Stress and Trauma)
GRANT FROM SAMSHA (Substance Abuse and Mental Health Services Administration)**

BY THE CITY ADMINISTRATOR:

WHEREAS, the City of Flint has been awarded grant funding from the United States Department of Health and Human Services – Substance Abuse and Mental Health Services Administration in the annual Amount of \$1,000,000; and

WHEREAS, Grant #1H79SM084918-01 is renewable up to four (4) years, based on performance, for a total of \$5,000,000; and

WHEREAS, the budget period of this grant will begin on September 30th, 2021, and go through September 29th, 2022; and

WHEREAS, the project period for this grant is September 30th, 2021 through September 29th 2026

IT IS RESOLVED that the appropriate City Officials are authorized to do all things necessary to abide by the terms and conditions of United States Department of Health and Human Services - Substance Abuse and Mental Health Services Administration Grant #1H79SM084918-01, in the amount of \$1,000,000.00 renewable up to four (4) years for a total of \$5,000,000.00, to appropriate revenue and expenditure amounts using grant code FHHS21RECAST, and make the grant funds available in the current and any subsequent fiscal years that the funding continues to remain available by the grantor.

Approved as to Form:

Angela Wheeler
Angela Wheeler (Aug 11, 2021 17:52 EDT)
Angela Wheeler, Chief Legal Officer

Kate Fields, Council President

Approved as to Finance:

Jennifer Ryan
Jennifer Ryan (Aug 11, 2021 16:23 EDT)
Shelbi Frayer, Chief Financial Officer

CLYDE D EDWARDS
CLYDE D EDWARDS (Aug 11, 2021 18:06 EDT)
Clyde D. Edwards, City Administrator



RESOLUTION NO.: _____

PRESENTED: _____

ADOPTED: _____

RESOLUTION STAFF


REVIEW

Date: August 11, 2021

Agenda Item Title:

**RESOLUTION AUTHORIZING THE ACCEPTENCE AND APPROVING A BUDGET
AMENDMENT FOR THE FLINT ReCAST GRANT FROM SAMSHA**

Prepared by:

Lottie Ferguson, Chief Resilience Officer 
Lottie Ferguson (Aug 11, 2021 15:55 EDT)

Background/Summary of Proposed Action:

In 2016, the City of Flint was awarded a nearly \$5 million grant from SAMHA to empower local community collaboration to assist youth and families in the City of Flint impacted by the Flint Water Emergency. When the mayoral administration changed in 2019, the program was restored to meet the goals originally intended, with tremendous support from the community, by providing support to more than thirty community based organizations, hosting many events, and providing a variety of training opportunities. The positive impact on the community helped the City of Flint become one of nine cities in the country awarded, and only one of three cities receiving funding for 2021-2026.

The Flint ReCAST (Resiliency in Communities after Stress and Trauma) Program is intended to assist high-risk youth and families in the City of Flint who have continued to be impacted by the Flint Water Emergency. Flint ReCAST seeks to promote resilience and equity through implementation of evidence-based violence prevention and community youth engagement programs, as well as linkages to trauma-informed behavioral health services. Flint ReCAST envisions the greater Flint community working together in ways that lead to improved behavioral health, empowered community residents, reductions in trauma, and sustained community change.

Flint ReCAST partners with Greater Flint Health Coalition, Crim Fitness Foundation, Michigan State University, and Genesee Health Systems to provide community activities, training (for community leaders, residents, and first responders), evidence-based mental health related services, a community-led mini-grant program and more.

Financial Implications:

There is appropriate grant funding with grant code FHHS21RECAST in the amount of \$5,000,000.00. in annual allocations of \$1,000,000.00, Renewable up to four (4) years based on performance.

Account Number & Grant Code	Account Name	Amount
296-649.500-702.000	Wages – Full Time (Non-Exempt)	\$5,000
296-649.500-703.000	Salaried Employee (Exempt)	\$70,000
296-649.500-705.000	Sick, Vacation and Accrued Leave	\$2,500
296-649.500-705.300	Accrued Absences	\$1,605
296-649.500-706.000	Holiday Pay	\$4,500
296-649.500-708.000	Unemployment Compensation	\$1,000
296-649.500-709.000	FICA (Social Security)	\$5,500
296-649.500-711.000	Medicare	\$1,000
296-649.500-716.100	MERS Hybrid Defined Contribution	\$12,000
296-649.500-717.100	MERS Hybrid Defined Benefit Pension	\$13,430
296-649.500-718.000	Health Insurance Premiums	\$12,000
296-649.500-725.000	Employer Health Care Savings Plan	\$2,500
296-649.500-732.000	Life Insurance	\$1,000
296-649.500-733.000	Optical Insurance	\$100



RESOLUTION NO.: _____

PRESENTED: _____

ADOPTED: _____

296-649.500-734.000	Dental Insurance	\$100
296-649.500-735.000	Workers Compensation	\$1,500
296-649.500-752.000	Supplies	\$6,000
296-649.500-801.000	Professional Services	\$825,000
296-649.500-861.100	Transportation – Mileage Reimbursement	\$1,000
296-649.500-880.100	Comm. Related Activities Non-Political	\$2,993
296-649.500-940.000	Rentals	\$5,000
296-649.500-958.000	Education, Training, & Conference	\$2,000
296-649.500-969.100	Indirect Cost Allocation	\$24,272

Budgeted Expenditure: Yes ____ No X

Please explain, if no: The funds were awarded after the budget was approved.

Pre-encumbered: Yes ____ No X

Requisition #: _____

Other Implications: No other implications are known at this time.

Staff Recommendation: Staff recommends approval of this resolution.

APPROVAL Martita Moffett-Page
Martita Moffett-Page (Aug 11, 2021 16:19 EDT)



Recipient Information

1. Recipient Name

FLINT, CITY OF
1101 S SAGINAW ST

FLINT, MI 48502

2. Congressional District of Recipient
05**3. Payment System Identifier (ID)**
1386004611A3**4. Employer Identification Number (EIN)**
386004611**5. Data Universal Numbering System (DUNS)**
072780067**6. Recipient's Unique Entity Identifier****7. Project Director or Principal Investigator**
Lottie Ferguson, MS

lferguson@cityofflint.com
8102372006

8. Authorized Official
Mr. Chay Linseman
clinseman@cityofflint.com
8102372008

Federal Agency Information

9. Awarding Agency Contact Information

Ernest Stevens
Grants Management Specialist
Center for Mental Health Services
Ernest.Stevens@samhsa.hhs.gov
(240) 276-0631

10. Program Official Contact Information
Shane Grant

Center for Mental Health Services
shane.grant@samhsa.hhs.gov

Federal Award Information

11. Award Number
1H79SM084918-01**12. Unique Federal Award Identification Number (FAIN)**
H79SM084918**13. Statutory Authority**
Sec.520A PHS Act, as amended, 42 U.S.C. (290bb-32)**14. Federal Award Project Title**
City of Flint Resiliency in Communities After Stress and Trauma (ReCAST) Project**15. Assistance Listing Number**
93.243**16. Assistance Listing Program Title**
Substance Abuse and Mental Health Services Projects of Regional and National Significance**17. Award Action Type**
New Competing**18. Is the Award R&D?**
No

Summary Federal Award Financial Information

19. Budget Period Start Date 09/30/2021 – End Date 09/29/2022

20. Total Amount of Federal Funds Obligated by this Action	\$1,000,000
20a. Direct Cost Amount	\$975,728
20b. Indirect Cost Amount	\$24,272

21. Authorized Carryover \$0**22. Offset** \$0**23. Total Amount of Federal Funds Obligated this budget period** \$1,000,000**24. Total Approved Cost Sharing or Matching, where applicable** \$0**25. Total Federal and Non-Federal Approved this Budget Period** \$1,000,000**26. Project Period Start Date 09/30/2021 – End Date 09/29/2026****27. Total Amount of the Federal Award including Approved Cost** \$1,000,000

Sharing or Matching this Project Period

28. Authorized Treatment of Program Income
Additional Costs**29. Grants Management Officer - Signature**
Eileen Bermudez**30. Remarks**

Acceptance of this award, including the "Terms and Conditions," is acknowledged by the recipient when funds are drawn down or otherwise requested from the grant payment system.



Notice of Award

Resiliency in Communities After Stress and Trauma
Department of Health and Human Services
Substance Abuse and Mental Health Services Administration

Issue Date: 07/07/2021

Center for Mental Health Services

Award Number: 1H79SM084918-01
FAIN: H79SM084918
Program Director: Lottie Ferguson MS

Project Title: City of Flint Resiliency in Communities After Stress and Trauma (ReCAST) Project

Organization Name: FLINT, CITY OF

Authorized Official: Mr. Chay Linseman

Authorized Official e-mail address: clinseman@cityofflint.com

Budget Period: 09/30/2021 – 09/29/2022

Project Period: 09/30/2021 – 09/29/2026

Dear Grantee:

The Substance Abuse and Mental Health Services Administration hereby awards a grant in the amount of \$1,000,000 (see "Award Calculation" in Section I and "Terms and Conditions" in Section III) to FLINT, CITY OF in support of the above referenced project. This award is pursuant to the authority of Sec.520A PHS Act, as amended, 42 U.S.C. (290bb-32) and is subject to the requirements of this statute and regulation and of other referenced, incorporated or attached terms and conditions.

Award recipients may access the SAMHSA website at www.samhsa.gov (click on "Grants" then SAMHSA Grants Management), which provides information relating to the Division of Payment Management System, HHS Division of Cost Allocation and Postaward Administration Requirements. Please use your grant number for reference.

Acceptance of this award including the "Terms and Conditions" is acknowledged by the grantee when funds are drawn down or otherwise obtained from the grant payment system.

If you have any questions about this award, please contact your Grants Management Specialist and your Government Project Officer listed in your terms and conditions.

Sincerely yours,
Eileen Bermudez
Grants Management Officer
Division of Grants Management

See additional information below

SECTION I – AWARD DATA – 1H79SM084918-01**Award Calculation (U.S. Dollars)**

Personnel(non-research)	\$91,000
Fringe Benefits	\$42,735
Travel	\$3,000
Supplies	\$6,000
Contractual	\$832,993
 Direct Cost	 \$975,728
Indirect Cost	\$24,272
Approved Budget	\$1,000,000
Federal Share	\$1,000,000
Cumulative Prior Awards for this Budget Period	\$0

AMOUNT OF THIS ACTION (FEDERAL SHARE)	\$1,000,000
---------------------------------------	-------------

SUMMARY TOTALS FOR ALL YEARS	
YR	AMOUNT
1	\$1,000,000
2	\$1,000,000
3	\$1,000,000
4	\$1,000,000
5	\$1,000,000

*Recommended future year total cost support, subject to the availability of funds and satisfactory progress of the project.

Fiscal Information:

CFDA Number:	93.243
EIN:	1386004611A3
Document Number:	21SM84918A
Fiscal Year:	2021

IC	CAN	Amount
SM	C96J504	\$1,000,000

IC	CAN	2021	2022	2023	2024	2025
SM	C96J504	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000

SM Administrative Data:

PCC: RECAST21 / OC: 4145

SECTION II – PAYMENT/HOTLINE INFORMATION – 1H79SM084918-01

Payments under this award will be made available through the HHS Payment Management System (PMS). PMS is a centralized grants payment and cash management system, operated by the HHS Program Support Center (PSC), Division of Payment Management (DPM). Inquiries regarding payment should be directed to: The Division of Payment Management System, PO Box 6021, Rockville, MD 20852, Help Desk Support – Telephone Number: 1-877-614-5533.

The HHS Inspector General maintains a toll-free hotline for receiving information concerning fraud, waste, or abuse under grants and cooperative agreements. The telephone number is: 1-

800-HHS-TIPS (1-800-447-8477). The mailing address is: Office of Inspector General, Department of Health and Human Services, Attn: HOTLINE, 330 Independence Ave., SW, Washington, DC 20201.

SECTION III – TERMS AND CONDITIONS – 1H79SM084918-01

This award is based on the application submitted to, and as approved by, SAMHSA on the above-title project and is subject to the terms and conditions incorporated either directly or by reference in the following:

- a. The grant program legislation and program regulation cited in this Notice of Award.
- b. The restrictions on the expenditure of federal funds in appropriations acts to the extent those restrictions are pertinent to the award.
- c. 45 CFR Part 75 as applicable.
- d. The HHS Grants Policy Statement.
- e. This award notice, INCLUDING THE TERMS AND CONDITIONS CITED BELOW.

Treatment of Program Income:

Use of program income – Additive: Recipients will add program income to funds committed to the project to further eligible project objectives. Sub-recipients that are for-profit commercial organizations under the same award must use the deductive alternative and reduce their subaward by the amount of program income earned.

In accordance with the regulatory requirements provided at 45 CFR 75.113 and Appendix XII to 45 CFR Part 75, recipients that have currently active Federal grants, cooperative agreements, and procurement contracts with cumulative total value greater than \$10,000,000 must report and maintain information in the System for Award Management (SAM) about civil, criminal, and administrative proceedings in connection with the award or performance of a Federal award that reached final disposition within the most recent five-year period. The recipient must also make semiannual disclosures regarding such proceedings. Proceedings information will be made publicly available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIS)). Full reporting requirements and procedures are found in Appendix XII to 45 CFR Part 75.

SECTION IV – SM Special Terms and Conditions – 1H79SM084918-01

REMARKS

New Award

FY 2021 New Award

1. This Notice of Award (NoA) is issued to inform your organization that the application submitted through the Funding Opportunity Announcement (FOA) number **SM-21-012** ***Resiliency in Communities After Stress and Trauma grant program (Re-CAST)*** has been selected for funding.

1a) This NoA also represents **conditional* approval of the budget submitted on February 15, 2021 as part of the application by your organization.

*See Special Condition(s) of Award.

2. Recipients are expected to plan their work to ensure that funds are expended within the 12-month budget period reflected on this Notice of Award. If activities proposed in the approved budget cannot be completed within the current budget period, SAMHSA cannot guarantee the approval of any request for carryover of remaining unobligated funding.

3. All responses to award terms and conditions and post award amendment requests must be submitted as .pdf documents in eRA Commons. For more information on how to respond to tracked terms and conditions or how to submit a post award amendment request please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading Grant Management Reference Materials for Grantees.

4. Register Program Director/Project Director (PD) in eRA Commons:

If you have not already done so, you must register the PD listed on the HHS Checklist in eRA Commons to assign a Commons ID. Once the PD has received their Commons ID, please send this information to your Grants Management Specialist. You can find additional information about the eRA Commons registration process at https://era.nih.gov/reg_accounts/register_commons.cfm.

5. Key Staff

Key staff (or key staff positions, if staff has not been selected) are listed below

Lottie Ferguson, Project Director @ 70% Level of Effort

****TBD-Program Manager @ 100% Level of Effort**

Organizations receiving Federal Funds may not exceed 100% level of effort for any program staff member (Key Staff or otherwise) across all federally funded sources.

*****See Special Condition of Award.***

Any changes to key staff—including level of effort involving separation from the project for more than three months or a 25 percent reduction in time dedicated to the project—requires prior approval and must be submitted as a post-award amendment in eRA Commons.

For additional information on how to submit a post-award amendment, please visit the SAMHSA website: <https://www.samhsa.gov/grants/grants-management/post-award-changes>. Any technical questions regarding the submission process should be directed to the eRA Service Desk: <http://grants.nih.gov/support/>.

SPECIAL TERMS

SPARS

All SAMHSA recipients are required to collect and report certain data so that SAMHSA can meet its obligation under the Government Performance and Results Act (GPRA) Modernization Act of 2010. These data are gathered using SAMHSA's Performance and Accountability Reporting System (SPARS). **ReCAST** recipients are required to:

(1) complete Annual Goals training and enter annual goals data into SPARS by **December 30, 2021**; and

(2) begin collecting and reporting data into SPARS in the second quarter (**January - March 2022**). SPARS training and technical assistance will be provided post award.

Information about SPARS training and data reporting will be provided upon award.

Risk Assessment

The Office of Financial Advisory Services (OFAS), SAMHSA may perform an administrative review of your organization's financial management system. If the review discloses material weaknesses or other financial management concerns, grant funding may be restricted in accordance with 45 CFR 75/2 CFR 200, as applicable. The restriction will affect your organization's ability to withdraw funds from the Payment Management System account, until the concerns are addressed.

Disparity Impact Statement (DIS)

By, **November 30, 2021**, submit via eRA Commons a Disparity Impact Statement (DIS).

The DIS should be consistent with information in your application regarding access, *service use and outcomes for the program and include three components as described below. Questions about the DIS should be directed to your GPO. Examples of DIS can be found on the SAMHSA website at: <https://www.samhsa.gov/grants/grants-management/disparity-impact-statement>

*Service use is inclusive of treatment services, prevention services as well as outreach, engagement, training, and/or technical assistance activities.

The disparity impact statement consists of three components:

1. Proposed number of individuals to be served and/or reached by subpopulations in the grant implementation area should be provided in a table that covers the entire grant period. The disparate population(s) should be identified in a narrative that includes a description of the population and rationale for how the determination was made.
2. A quality improvement plan for how you will use your program (GPRA) data on access, use and outcomes to monitor and manage program outcomes by race, ethnicity and LGBT status, when possible. The quality improvement plan should include strategies for how processes and/or programmatic adjustments will support efforts to reduce disparities for the identified subpopulations.
3. The quality improvement plan should include methods for the development and implementation of policies and procedures to ensure adherence to the Enhanced Culturally and Linguistically Appropriate Services (CLAS) Standards and the provision of effective care and

services that are responsive to:

- a. Diverse cultural health beliefs and practices;
- b. Preferred languages; and
- c. Health literacy and other communication needs of all sub-populations within the proposed geographic region.

All responses to award terms and conditions must be submitted as .pdf documents in eRA Commons. For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions.**

SPECIAL CONDITIONS

Revised Key Personnel Level of Effort

By, **October 30, 2021**, submit via eRA Commons a Key Staff Submission appointing a candidate as a *Program Manager @ 100% Level of Effort*.

Organizations receiving Federal Funds may not exceed 100% level of effort for any program staff member (Key Staff or otherwise) across all federally funded sources.

*All responses to award terms and conditions must be submitted as .pdf documents in eRA Commons. For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions.***

Revised Budget

By, **October 30, 2021**, submit via eRA Commons a revised budget narrative indicating a slot for the key staff position of Program Manager @ 100% Level of Effort.

All responses to award terms and conditions must be submitted as .pdf documents in eRA Commons. For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions.**

Participant Protection

By, **October 30, 2021**, submit via eRA Commons a response to the following Participant Protection concern raised by SAMHSA's Initial Review Group:

- **Protect Clients and Staff from Potential Risks:** The applicant organization describes transmitting information electronically which has an inherent risk of confidentiality being compromised. Additionally, it does not describe in the body of the application how the community affected by the proposed project would have access to electronic submissions that would ensure confidentiality could be maintained. Moreover, the applicant organization also indicates that there will be no psychological adverse effects while receiving mental health treatment, but trauma informed practices would indicate there is a risk of negative physical and psychological effects in the process of receiving trauma informed therapies.
- **Adequate Consent Procedures:** The consent form and the Coercion section do not match. The

coercion section states \$20 gift card, the consent form states \$30 gift card. Additionally, the applicant organization indicates youth under age 18 would provide verbal consent and does not indicate if the parents will be consulted and provide consent for the minor to participate, this could continue the mistrust of the government officials on behalf of the community if youth are being provided services without communication or consent of the parents.

- Risk/Benefit Discussion: The applicant organization does not clearly identify the risks of addressing trauma in a community nor does it adequately describe the benefits of the proposed project implementation.

The response needs to be uploaded via eRA Commons (more information can be found at <https://www.samhsa.gov/grants/grants-training-materials> 'Notice of Award: How to Respond to Terms and Conditions Training'). Please also email, with the grant number in the Subject line, the response to your assigned Government Project Officer and SAMHSA Participant Protection Officer Michelle Bechard (michelle.bechard@samhsa.hhs.gov).

All grant funds are available for this project except for those funds directly related to Participant Protection issues as outlined in the FOA. Currently, only activities that do not directly involve Participant Protection issues (i.e., are clearly severable and independent from those activities that do involve Participant Protection issues) may be conducted under this award. This restriction of funds will only be lifted if the Participant Protection issue noted above is appropriately addressed by you as the grantee and resolved to the satisfaction of your designated Government Project Officer and Participant Protection Officer.

All responses to award terms and conditions must be submitted as .pdf documents in eRA Commons. For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions.**

Marijuana Special Condition (States)

By no later than October 30, 2021, please submit an attestation statement confirming compliance with the language below.

For state grantees, language in attestation should read, "I certify that all sub recipients comply with the following language:

Grant funds may not be used, directly or indirectly, to purchase, prescribe, or provide marijuana or treatment using marijuana. Treatment in this context includes the treatment of opioid use disorder. Grant funds also cannot be provided to any individual who or organization that provides or permits marijuana use for the purposes of treating substance use or mental disorders. See, e.g., 45 C.F.R. § 75.300(a) (requiring HHS to "ensure that Federal funding is expended . . . in full accordance with U.S. statutory . . . requirements."); 21 U.S.C. §§ 812(c)(10) and 841 (prohibiting the possession, manufacture, sale, purchase or distribution of marijuana). This prohibition does not apply to those providing such treatment in the context of clinical research permitted by the DEA and under an FDA-approved investigational new drug application where the article being evaluated is marijuana or a constituent thereof that is otherwise a banned controlled substance under federal law."

*The attestation statement must be on letterhead and signed by the **Authorized Representative.***

Please email any related questions to MQQuestions@SAMHSA.HHS.GOV

All responses to award terms and conditions must be submitted as .pdf documents in

eRA Commons. For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions.**

All previous terms and conditions remain in effect until specifically approved and removed by the Grants Management Officer.

STANDARD TERMS AND CONDITIONS

Annual Federal Financial Report (FFR or SF-425)

All financial reporting for recipients of Health and Human Services (HHS) grants and cooperative agreements will be consolidated through a single point of entry, which has been identified as the Payment Management System (PMS). The Federal Financial Report (FFR or SF-425) initiative ensures all financial data is reported consistently through one source; shares reconciled financial data to the HHS grants management systems; assists with the timely financial monitoring and grant closeout; and reduces expired award payments.

The FFR is required on an annual basis no later than 90 days after the end of each Budget Period. The FFR should reflect cumulative amounts. Additional guidance to complete the FFR can be found at <http://www.samhsa.gov/grants/grants-management/reporting-requirements>.

SAMHSA reserves the right to request more frequent submissions of FFRs. If so, the additional submission dates will be shown below.

Your organization is required to submit an FFR for this grant funding:

- **By, December 28, 2022**, submit the Federal Financial Report (FFR)/(SF-425).

Effective January 1, 2021, recipients can connect seamlessly from the **eRA Commons FFR Module** to **PMS** by clicking the “**Manage FFR**” button on the “**Search for Federal Financial Report (FFR)**” page.

- Recipients who do not have access to PMS may use the following instructions on how to update user permission: <https://pms.psc.gov/grant-recipients/access-newuser.html>.
- Recipients who currently have access to PMS and are submitting or certifying the FFR on behalf of their organization, should login to PMS and update their permissions to request access to the FFR Module using the following instructions: <https://pms.psc.gov/grant-recipients/access-changes.html>.
 - Instructions on how to submit a FFR via PMS are available at <https://pmsapp.psc.gov/pms/app/help/ffr/ffr-grantee-instructions.html> (**Must be logged into PMS to access link**)

If you have questions about how to set up a PMS account for your organization, please contact the PMS Help Desk at PMSSupport@psc.hhs.gov or 1-877-614-5533.

Note: Recipients will use PMS to report all financial expenditures, as well as to drawdown funds; SAMHSA recipients will continue to use the eRA Commons for all other grant-related matters including submitting progress reports, requesting post-award amendments, and accessing grant documents such as the Notice of Award.

Mid-Annual Progress Report

By, **March 28, 2022**, submit via eRA Commons the 1st Year Mid-Annual Progress Report.

This Mid-Year report is required for the 1st Year Budget period only and submitted as a .pdf to

the View Terms Tracking Details page in the eRA Commons System.

The Mid-Year Annual Report must, at a minimum, include the following information:

- Data and progress for performance measures as reflected in your application regarding goals and evaluation activities.
- A summary of key program accomplishments to-date.
- Description of the changes, if any, that were made to the project that differ from the application for this incremental period.
- Description of any difficulties and/or problems encountered in achieving planned goals and objectives including barriers to accomplishing program objectives, and actions to overcome barriers or difficulties.

Note: Recipients must also comply with the GPRA requirements that include the collection and periodic reporting of performance data as specified in the FOA or by the Grant Program Official (GPO). This information is needed in order to comply with PL 102-62, which requires that Substance Abuse and Mental Health Services Administration (SAMHSA) report evaluation data to ensure the effectiveness and efficiency of its programs.

The response to this term must be submitted as .pdf documents in eRA Commons. Please contact your Government Program Official (GPO) for program specific submission information.

For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions**.

Additional information on reporting requirements is available at <https://www.samhsa.gov/grants/grants-management/reporting-requirements>.

Annual Progress Report

By, **December 28, 2022**, submit via eRA Commons the Annual Progress Report.

The Programmatic Report is required on an annual basis and must be submitted as a .pdf to the View Terms Tracking Details page in the eRA Commons System no later than 90 days after the end of each 12-month budget period.

The Annual Programmatic Report must, at a minimum, include the following information:

- Data and progress for performance measures as reflected in your application regarding goals and evaluation activities.
- A summary of key program accomplishments to-date.
- Description of the changes, if any, that were made to the project that differ from the application for this incremental period.
- Description of any difficulties and/or problems encountered in achieving planned goals and objectives including barriers to accomplishing program objectives, and actions to overcome barriers or difficulties.

Note: Recipients must also comply with the GPRA requirements that include the collection and periodic reporting of performance data as specified in the FOA or by the Grant Program Official (GPO). This information is needed in order to comply with PL 102-62, which requires that Substance Abuse and Mental Health Services Administration (SAMHSA) report evaluation data

to ensure the effectiveness and efficiency of its programs.

The response to this term must be submitted as .pdf documents in eRA Commons. Please contact your Government Program Official (GPO) for program specific submission information.

For more information on how to respond to tracked terms and conditions please refer to <https://www.samhsa.gov/grants/grants-training-materials> under heading **How to Respond to Terms and Conditions**.

Additional information on reporting requirements is available at <https://www.samhsa.gov/grants/grants-management/reporting-requirements>.

Standard Terms for Awards

Your organization must comply with the Standard Terms and Conditions for the Fiscal Year in which your grant was awarded. The Fiscal Year for your award is identified on Page 2 of your Notice of Award. SAMHSA's Terms and Conditions Webpage is located at: <https://www.samhsa.gov/grants/grants-management/notice-award-noa/standard-terms-conditions>.

Consistent Treatment of Costs.

Recipients must treat costs consistently across all federal and non-federal grants, projects and cost centers. Recipients may not direct-charge federal grants for costs typically considered indirect in nature, unless done consistently. If part of the indirect cost rate, then it may not also be charged as a direct cost. *Examples of indirect costs include (administrative salaries, rent, accounting fees, utilities, office supplies, etc.).* If typical indirect cost categories are included in the budget as direct costs, it is SAMHSA's understanding that your organization has developed a cost accounting system adequate to justify the direct charges and to avoid an unfair allocation of these costs to the federal government. Also, note that all awards are subject to later review in accordance with the requirements of 45 CFR 75.364, 45 CFR 75.371, 45 CFR 75.386 and 45 CFR Part 75, Subpart F, *Audit Requirements*.

Compliance with Award Terms and Conditions

FAILURE TO COMPLY WITH THE ABOVE STATED TERMS AND CONDITIONS MAY RESULT IN ACTIONS IN ACCORDANCE WITH 45 CFR 75.371, REMEDIES FOR NON-COMPLIANCE AND 45 CFR 75.372 TERMINATION. THIS MAY INCLUDE WITHHOLDING PAYMENT, DISALLOWANCE OF COSTS, SUSPENSION AND DEBARMENT, TERMINATION OF THIS AWARD, OR DENIAL OF FUTURE FUNDING.

All previous terms and conditions remain in effect until specifically approved and removed by the Grants Management Officer.

Staff Contacts:

Shane Grant, Program Official
Email: shane.grant@samhsa.hhs.gov

Ernest Stevens, Grants Specialist
Phone: (240) 276-0631 **Email:** Ernest.Stevens@samhsa.hhs.gov **Fax:** (240) 276-1430



RESOLUTION NO.: 210406
PRESENTED: AUG 23 2021
ADOPTED: _____

**RESOLUTION AUTHORIZING THE ADOPTION OF THE 2023-2027 VISION, MISSION
AND GOALS OF THE CITY OF FLINT STRATEGIC PLAN**

BY THE CITY COUNCIL:

The Flint City Council recognizes that the development and implementation of a multi-year strategic plan is an essential component of developing a sustainable City government. The progress of the City of Flint is now defined by the steps it takes to achieve its stated vision, mission, and goals. Flint City government is focused on enabling the City of Flint to become an attractive place to live, work, play, study, and visit. In order to do this, City government must become and remain financially stable and provide residents, businesses, students, and visitors with an adequate level of municipal services. The City must also have the capacity to encourage and guide others in achieving its vision and goals. Achievement of the City's vision will be measured by the progress that is being made towards specific goals and objectives.


Ordinance No. 3855 Section 2-106, Development and Update of the Strategic Plan, requires the City Council adoption of an update of the Strategic Plan as part of the preparation of the bi-annual budget. Completion of the Vision, Mission and Goals is the initial step in this annual process.

The Mayor and City Council, working with City Administration and staff, have created the City of Flint FY23-207 Vision, Mission and Goals of the Strategic Plan, attached hereto and made a part hereof.

IT IS RESOLVED, that the City of Flint 2023-2027 Vision, Mission, and Goals of the Strategic Plan are hereby approved as set forth in the attached document.

APPROVED AS TO FORM:

APPROVED AS TO FINANCE:


Angela Wheeler (Aug 17, 2021 10:02 EDT)

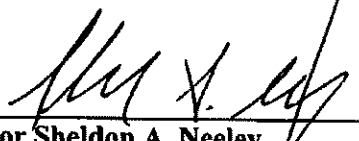
Angela Wheeler, Chief Legal Officer



Robert Widigan, Interim Chief Financial Officer

FOR THE CITY OF FLINT:

APPROVED BY CITY COUNCIL:



Mayor Sheldon A. Neeley

Kate Fields, Council President

CITY OF FLINT STRATEGIC PLAN

2023-2027

Setting a Sustainable Course for the City of Flint

The Vision for the City Government of Flint

A well-managed, financially stable, and accountable government focused on creating and maintaining a vibrant and growing community which will attract and retain residents, businesses, students, and visitors and improve our quality of life

The Mission of the City Government

To assure that residents, businesses, students and visitors in the City of Flint receive municipal services in a customer friendly, financially responsible, and equitable manner in order to insure equality of opportunity for all persons

The Goals

In order to operate per our Mission and realize our Vision, residents, businesses, students and visitors can expect that the City of Flint will:

1. The City will operate in an open and financially sustainable manner, including improving citizen access, focusing on measurable results, improving the City's financial position and eliminating accumulated deficits
2. The City will provide a highly trained and professional staff of elected leaders, appointed officials and employees
3. The City will provide for a safe, secure, healthy and clean environment in which to live, work, learn and play
4. The City will provide access to dependable, quality and sustainable water and sewer
5. The City will provide access to an adequate and well-maintained transportation network for all modes of travel serving motorized, non-motorized, and pedestrian needs
6. The City will foster cooperation among business, non-profit, higher education, foundation partners, and residents to create a climate that supports economic development with a focus on small business and entrepreneurs in order to build local wealth and enhance the tax base

CITY OF FLINT STRATEGIC PLAN

2023-2027

(continued)

7. The City will seek partnerships with Local, State and Federal governmental partners, and other private entities in order to maximize efficiencies and resources in meeting its Mission
8. The City will promote the equal protection of the law for each person in accordance with fundamental human rights. The City will adopt policies and ordinances to insure same
9. The City will ensure optimum practices in order to promote government transparency.
10. The City will improve systems management processes to ensure better effectiveness of records management, storage, and access to city documents – to include improvements to City technology and the web site.

RESOLUTION STAFF REVIEW

DATE: August 16, 2021

Agenda Item Title: Resolution Authorizing the Adoption of the 2023-2027 Vision, Mission and Goals of the City of Flint Strategic Plan

Prepared By: V. Foster, Finance Division

Background/Summary of Proposed Action:

Per Ordinance No. 3855 Section 2-106, Development and Update of Strategic Plan, requires the City Council adoption of an update of the Strategic Plan in preparation of the budget. Completion of the Vision, Mission, and goals is the initial step in this annual process.

A Special City Council meeting was scheduled for Wednesday, December 14, 2106 for this purpose, however failed to have a quorum. As such, the Interim Chief Financial Officer is recommending that the same set of goals be adopted.

Financial Implications

Budgeted Expenditure? n/a **Please explain if no:**

Account No.:

Pre-encumbered? Yes No Requisition #

Other Implications (i.e., collective bargaining):

Staff Recommendation:

It is the recommendation of the Interim Chief Financial Officer that the Flint City Council adopt the 2023-2027 Vision, Mission and goals of the City of Flint Strategic Plan as presented.

Staff Person: 

Approval: 

ARTICLE 7 - FINANCE

Sec. 7-101 BUDGET.

A. The City of Flint's budget shall be developed through the following process:

1. The fiscal year shall begin on July 1st.
2. The City of Flint shall maintain a balanced budget in accordance with State law.
3. On or before the first Monday of September the City Council shall pass and the Mayor shall adopt a resolution updating the City of Flint's strategic plan for the next fiscal year. The plan shall state the City of Flint's goals, prioritized objectives, and measures for success for the next fiscal year. The City Council shall utilize the City of Flint's Comprehensive Plan, input from the Mayor, and input from the public in updating the strategic plan. The Mayor shall have the power to veto a resolution updating the strategic plan in the same manner as provided in this Charter for the veto of resolutions.
4. On or before the first Monday of December the Mayor shall submit a preliminary budget to the City Council for the next fiscal year. This preliminary budget shall also be posted to the City of Flint's website and be available for public review at the City Clerk's office. The budget shall align with the City of Flint's strategic, comprehensive, and capital improvement plans. The Mayor shall present to and receive input on the preliminary budget from the City Council. No earlier than ten (10) business days after the presentation of the preliminary budget and no later than twenty (20) business days after the presentation of the preliminary budget, the Mayor and City Council shall hold a public hearing to receive input on the preliminary budget from the public. The notice for the hearing to be published in a newspaper of general circulation or as otherwise provided by law, shall include notice to the public that the preliminary budget is available.
5. On or before the first Monday of March, the Mayor shall submit a final proposed budget to the City Council for the next fiscal year. This proposed budget shall be posted to the City of Flint's website and be available for public review at the City Clerk's office. No earlier than ten (10) business days after the presentation of the proposed budget and no later than twenty (20) business days after the presentation of the proposed budget, the Mayor and City Council shall hold a public hearing on the proposed budget. The notice for the hearing, to be published in a newspaper of general circulation, or as otherwise provided by law, shall include notice to the public that the proposed budget is available.

for reference

*2021
first
draft
what
do*

*needs to
go on
8/23
agenda*

*Vanessa -
for reference only*

RESOLUTION NO.: **200426.2**

PRESENTED: DEC 14 2020

ADOPTED: JAN 25 2021

**RESOLUTION AUTHORIZING THE ADOPTION OF THE 2021-2024 VISION,
MISSION AND GOALS OF THE CITY OF FLINT STRATEGIC PLAN**

BY THE FLINT CITY COUNCIL:

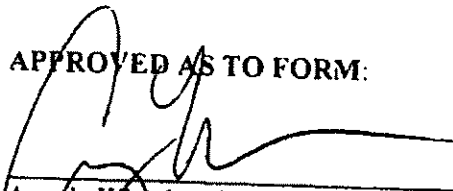
The Flint City Council recognizes that the development and implementation of a multi-year strategic plan is an essential component of developing a sustainable city government. The progress of the City of Flint is now defined by the steps it takes to achieve its stated vision, mission and goals. Flint city government is focused on enabling the City of Flint to become an attractive place to live, work, play, study and visit. In order to do this city government must become and remain financially stable and provide residents, businesses, students and visitors with an adequate level of municipal services. The city must also have the capacity to encourage and guide others in achieving its vision and goals. Achievement of the city's vision will be measured by the progress that is being made towards specific goals and objectives.

Ordinance 3855, Section 2-106, Development and Update of Strategic Plan, requires the City Council adoption of an update to the Strategic Plan in preparation of the biennial budget. Completion of the Vision, Mission and Goals is the initial step in the annual process.

The Mayor and City Council, working with city administration and staff, have created the City of Flint FY2021-2024 Vision, Mission and Goals of the Strategic Plan, attached hereto and made a part thereof.

IT IS RESOLVED that the City of Flint FY2021-2024 Vision, Mission and Goals of the Strategic Plan are hereby approved as set forth in the attached document.

APPROVED AS TO FORM:



Angela Wheeler, City Attorney

FOR THE CITY:

Sheldon Neeley, Mayor

APPROVED BY THE FLINT CITY COUNCIL:



Kate Fields, City Council President

Kate Fields, City Council President

CITY OF FLINT STRATEGIC PLAN

2021-2024

Setting a Sustainable Course for the City of Flint

The Vision for the City Government of Flint

A well-managed, financially stable, and accountable government focused on creating and maintaining a vibrant and growing community which will attract and retain residents, businesses, students, and visitors and improve our quality of life

The Mission of the City Government

To assure that residents, businesses, students and visitors in the City of Flint receive municipal services in a customer friendly, financially responsible, and equitable manner in order to insure equality of opportunity for all persons

The Goals

In order to operate per our Mission and realize our Vision, residents, businesses, students and visitors can expect that the City of Flint will:

1. The City will operate in an open and financially sustainable manner, including improving citizen access, focusing on measurable results, improving the City's financial position and eliminating accumulated deficits
2. The City will provide a highly trained and professional staff of elected leaders, appointed officials and employees
3. The City will provide for a safe, secure, healthy and clean environment in which to live, work, Learn and play
4. The City will provide access to dependable, quality and sustainable water and sewer
5. The City will provide access to an adequate and well maintained transportation network for all modes of travel serving motorized, non-motorized, and pedestrian needs
6. The City will foster cooperation among business, non-profit, higher education, foundation partners, and residents to create a climate that supports economic development with a focus on small business and entrepreneurs in order to build local wealth and enhance the tax base
7. The City will seek partnerships with Local, State and Federal governmental partners, and other private entities in order to maximize efficiencies and resources in meeting its Mission
8. The City will promote the equal protection of the law for each person in accordance with fundamental human rights. **THE CITY WILL ADOPT POLICIES AND ORDINANCES TO INSURE SAME.**
9. **THE CITY WILL ENSURE OPTIMUM PRACTICES IN ORDER TO PROMOTE GOVERNMENT TRANSPARENCY.**
10. **THE CITY WILL IMPROVE SYSTEMS MANAGEMENT PROCESSES TO ENSURE BETTER EFFECTIVENESS OF RECORDS MANAGEMENT STORAGE AND ACCESS.**

210407

PRESENTED: 8-23-21
ADOPTED:

Resolution Approving Issuance of Sewage Disposal System Revenue Bond and Authorizing
Publication of Notice

BY THE MAYOR:

The Flint City Council adopted a resolution on August ____, 2021 authorizing the issuance of the
City's Sewage Disposal System Revenue Bond, issued in one or more series, from time to time,
in an aggregate principal amount not to exceed [\$_____].

APPROVED AS TO FORM:

Angela Wheeler

Angela Wheeler
Chief Legal Officer

APPROVED AS TO FUNDING:

Robert J.F. Widigan

Robert J.F. Widigan (Aug 19, 2021 16:30 EDT)

Robert J. F. Widigan
Interim Chief Financial Officer

APPROVED BY BUDGET:

Kimberly Hines

Kimberly Hines (Aug 19, 2021 16:43 EDT)

Kimberly Hines
Budget Administrator

Presented:

Adopted:

**CITY OF FLINT
(Genesee County, Michigan)**

RESOLUTION NO. _____

**A RESOLUTION TO AUTHORIZE ISSUANCE OF
SEWAGE DISPOSAL SYSTEM REVENUE BONDS**

Minutes of a regular meeting of the City Council of the City of Flint, Genesee County,
Michigan, held on _____, 2021, at _____ p.m., local time.

PRESENT: _____

ABSENT: _____

The following Resolution was offered by Member _____ and supported
by Member _____:

BOND RESOLUTION

Sewage Disposal System Revenue Bonds, Series 2021

WHEREAS, pursuant to Act 94, Public Acts of Michigan, 1933, as amended (the "Act") the City of Flint, Michigan (the "Issuer") has determined to make improvements to the Issuer's sewage disposal system; and

WHEREAS, pursuant to Resolution No. 190188.1 (the "Project Plan Resolution") adopted by the City Council on June 24, 2019, approval was given to a proposed project plan and program application (the "**Project Plan**") to the Michigan Department of Environment, Great Lakes and Energy ("**EGLE**") for improvements to the Issuer's sewage disposal system as set forth in such Project Plan; and

WHEREAS, the improvements will enable the Issuer to provide more efficient and better quality public services to the users of the sewage disposal system; and

WHEREAS, pursuant to Resolution No. 200303.1, the City Council approved the issuance of \$40,000,000 principal amount of its Sewage Disposal System Revenue Bonds, Series 2020 (General Obligation Limited Tax) (the "Series 2020 Bonds") to pay a portion of the costs of

certain improvements to the Issuer's sewage disposal system that are described in such Project Plan and a portion of such Series 2020 Bonds remain outstanding; and

WHEREAS, the improvements described in such Project Plan shall be financed, in part, by the issuance of additional revenue bonds or other evidences of indebtedness in accordance with the Act in the sum of not to exceed \$40,000,000 for a period of not to exceed forty (40) years (the "Series 2021 Bonds"); and

WHEREAS, the Issuer has applied for funding for the improvements from the State Revolving Fund program (the "SRF Program"), which is a low-interest loan financing program administered by the Michigan Department of Treasury and the Michigan Finance Authority (the "Authority"); and

WHEREAS, the Issuer caused to be published in a local newspaper in general circulation, on July 29, 2021, pursuant to Section 33 of the Act, the "Official Notice to Electors and Taxpayers of the City of Flint and to Users of the City's Sewage Disposal System of Intent to Issue Revenue Bonds and Right of Referendum Thereon" (the "**Notice of Intent**"), which described bonds to be issued in one or more series in an aggregate principal amount not-to-exceed \$46,000,000 for the purpose of paying the costs of improvements in the Project Plan; and

WHEREAS, as additional security for payment of the principal of, premium, if any, and interest on the Series 2021 Bonds, the Issuer desires to pledge to the Authority revenue sharing payments that the Issuer is eligible to receive under Act 140, Public Acts of Michigan, 1971, as amended ("Act 140"); and

WHEREAS, the Act permits the Issuer to authorize, within limitations that shall be contained in the authorization resolution, an officer to sell, deliver and receive payment for obligations, and to approve interest rates or methods for fixing interest rates, prices, discounts, maturities, principal amounts, denominations, dates of issuance, interest payment dates, optional or mandatory redemption rights, place of delivery and payment, and other matters and procedures necessary to complete an authorized transaction.

WHEREAS, Section 1.150-2 of the Treasury Regulations on Income Tax (the "Reimbursement Regulations") specifies conditions under which a reimbursement allocation may be treated as an expenditure of Bond proceeds, and the Issuer intends to qualify amounts advanced by the Issuer to make improvements to the Issuer's sewage disposal system for reimbursement from proceeds of the Bonds in accordance with the requirements of the Reimbursement Regulations.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Flint, Genesee County, Michigan as follows:

Section 1. DEFINITIONS. Whenever used in this Resolution except when otherwise indicated by context, the following definitions shall apply:

- (a) "Act" means Act 94, Public Acts of Michigan, 1933, as amended.

(b) “Additional First Lien Bonds” means any additional First Lien bonds issued in the future.

(c) “Additional Junior Lien Bonds” means any additional Junior Lien Bonds issued in the future.

(d) “Adjusted Net Revenues” means for any operating year the Net Revenues to which may be made the following adjustments:

(i) Revenues may be augmented by the amount of any rate increase adopted prior to the issuance of additional Bonds or to be placed into effect before the time principal or interest on the additional Bonds becomes payable from Revenues as applied to quantities of service furnished during the operating year or portion thereof that the increased rates were not in effect.

(ii) Revenues may be augmented by amounts that may be derived from rates and charges to be paid by new customers of the System.

(e) “Authorized Officer” means the Mayor, the Finance Director, the City Administrator, or the Treasurer of the Issuer, or any one or more of them.

(f) “Authority” means the Michigan Finance Authority created by Executive Order 2010-2, which, among other things, transferred to the Michigan Finance Authority the powers, duties, and functions of the Michigan Municipal Bond Authority created and established pursuant to Act 227, Public Acts of Michigan, 1985, as amended.

(g) “Bondholder” or “Bondholders” means the holder or holders of the Bonds.

(h) “Bond Reserve Account” means a subaccount established within the Redemption Account pursuant to Section 16(b)(ii)(B).

(i) “Bonds” means the Series 2021 Bonds and any Additional Junior Lien Bonds and any Additional First Lien Bonds authorized pursuant to this Resolution or any resolution supplemental to this resolution, whether presently outstanding or hereafter issued.

(j) “City Council” means the City Council of the City of Flint, Michigan, the legislative and governing body thereof.

(k) “Code” means the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

(l) “Construction Fund” shall mean the construction fund created pursuant to Section 16(a).

(m) “Contract Documents” means the Purchase Contract between the Issuer and the Authority, the Supplemental Agreement by and among the Issuer, the Authority and the State of Michigan acting through the Department of Environmental Quality, and the Issuer’s Certificate for the Series 2021 Bonds, or such other closing documents required by the Authority for the issuance of the Series 2021 Bonds.

(n) “First Lien Bonds” shall mean any bonds or other obligations that may be issued or incurred by the Issuer payable from the Revenues of the System secured by a lien that is a first lien on the Net Revenues of the System, senior in standing and priority of lien with respect to the Net Revenues to the claim of the Junior Lien Bonds.

(o) “First Lien Redemption Account” means the First Lien Bond and Interest Redemption Account created as a subaccount of the Redemption Account pursuant to Section 16(b)(ii)(A).

(p) “G. O. Fund” means the General Obligation Debt Fund created pursuant to Section 16(b)(iii).

(q) “Improvements” means the design, acquisition, equipping, and construction of improvements to the System, including, but not limited to, the improvements described in Section 2 with respect to the Series 2021 Bonds, as well as all work necessary and incidental to these improvements.

(r) “Issuer” means the City of Flint, Genesee County, Michigan.

(s) “Junior Lien Bonds” shall mean any bonds or other obligations that may be issued or incurred by the Issuer payable from the Revenues of the System secured by a lien on the Net Revenues of the System that is subordinate to a first lien on the Net Revenues of the System created for the benefit of any First Lien Bonds.

(t) “Junior Lien Redemption Account” shall mean the Junior Lien Bond and Interest Redemption Account created as a subaccount of the Redemption Account pursuant to Section 16(b)(ii)(C).

(u) “Net Revenues” shall have the same meaning as defined in Section 3 of the Act.

(v) “Operation and Maintenance Fund” means the Operation and Maintenance Fund created pursuant to Section 16(b)(i).

(w) “Receiving Fund” shall mean the Sewage Disposal System Receiving Fund created pursuant to Section 16(b).

(x) “Redemption Account” shall mean the Bond and Interest Redemption Account created pursuant to Section 16(b)(ii).

(y) “Resolution” means this Resolution and all amendments hereto.

(z) “Revenues” shall have the same meaning as defined in Section 3 of the Act and shall include all earnings on investment of funds of the System and all other revenues derived from or pledged to operation of the System.

(aa) "Series 2021 Bonds" means the Issuer's the sewage disposal system revenue bonds issued pursuant to this resolution, which shall be designated as determined by the Authorized Officer.

(bb) "System" means the Issuer's complete sewage disposal system, both inside and outside the Issuer, including all collection and treatment facilities for sanitary sewer and all appurtenances thereto now owned by the Issuer and those acquired pursuant to this Resolution and all extensions and improvements thereto hereafter made.

Section 2. NECESSITY, PUBLIC PURPOSE. It is hereby determined to be necessary for the public health, safety and welfare of the Issuer to acquire, construct, furnish and equip improvements to the Issuer's existing System including water pollution control facilities, pump station improvements, grit removal, primary settling tank improvements, and secondary settling tank improvements, together with all related appurtenances and attachments thereto (the "Improvements") in accordance with the maps, plans and specifications therefor prepared by the Issuer's engineers, Hubbell, Roth & Clark Engineering, Inc., Wade Trim, and Tetra Tech and issue the Series 2021 Bonds pursuant to the Act to finance the acquisition, construction, furnishing and equipping of the Improvements.

Section 3. ESTIMATED COST; PERIOD OF USEFULNESS. The cost of the Improvements has been estimated by the engineers not to exceed \$40,000,000, including the payment of legal, engineering, financial and other expenses, which estimate of cost is approved and confirmed, and the period of usefulness of the Improvements is estimated to be greater than forty (40) years.

Section 4. ISSUANCE OF BONDS. To pay a portion of the cost of designing, acquiring, and constructing the Improvements and to pay the legal and financial expenses and all other expenses incidental to the issuance of the Series 2021 Bonds, the Issuer shall borrow the

sum of not to exceed \$40,000,000 and issue its revenue bonds pursuant to the provisions of the Act. The Series 2021 Bonds shall be issued in the aggregate principal sum of not to exceed \$40,000,000 as finally determined by the Authorized Officer at the time of sale, or such lesser amount thereof as shall have been advanced to the Issuer pursuant to the Contract Documents. The remaining cost of the Improvements, if any, shall be paid by the Issuer from federal or state grants, federal or state funds provided to the Issuer and/or from funds on hand and legally available to the Issuer for such use.

During the time funds are being drawn down by the Issuer under the Series 2021 Bonds, the Authority will periodically provide the Issuer a statement showing the amount of principal that has been advanced and the date of each advance, which statement shall constitute prima facie evidence of the reported information; provided that no failure on the part of the Authority to provide such a statement or to reflect a disbursement or the correct amount of a disbursement shall relieve the Issuer of its obligation to repay the outstanding principal amount actually advanced and not forgiven, all accrued interest thereon, and any other amount payable with respect thereto in accordance with the terms of the Series 2021 Bonds.

Section 5. SERIES 2021 BOND TERMS. The Series 2021 Bonds shall be issued as one fully registered manuscript bond, shall be sold and delivered to the Authority in any denomination. The Series 2021 Bonds shall be dated the date of delivery to the Authority, or such other date approved by the Authorized Officer, and shall be payable on the dates determined by the Authorized Officer at the time of sale provided the final maturity shall be no later than thirty three years after the date of issuance. The Series 2021 Bonds shall bear interest at a rate of not to exceed 2.25% per annum as determined by the Authorized Officer, payable semiannually on the dates determined by the Authorized Officer at the time of sale.

Notwithstanding the above, the final amount of any maturity and terms of the Series 2021 Bonds shall be as provided in the Contract Documents and will be finally determined by the Authorized Officer.

Section 6. PAYMENT OF BONDS; PLEDGE OF NET REVENUES. Principal of and interest on the Bonds shall be payable in lawful money of the United States of America to the person appearing on the Bond registration books as the registered owner thereof. Payment of principal on the Bonds shall be made at the principal office of the Paying Agent, upon surrender of the Bonds. Payment of interest on the Bonds shall be paid to the registered owner at the address as it appears on the registration books. The principal of and interest on the Bonds shall be payable from the Net Revenues derived from the operation of the System, including future improvements, enlargements and extensions thereof, after provision has been made for the payment of expenses of administration, operation and maintenance thereof. The Net Revenues of the System, including future enlargements, improvements, and extensions thereto, are hereby pledged to the payment of the principal of and interest on the Bonds. To secure the payment of the principal of and interest on the Bonds, a statutory lien is created pursuant to the Act to and in favor of the Bondholders of the Bonds upon the Net Revenues of the System, including future enlargements, improvements, and extensions thereof. The statutory lien on the Net Revenues securing any First Lien Bonds shall be a first lien as provided in the Act and shall at all times and in all respects be and remain superior to the lien on the Net Revenues securing any Junior Lien Bonds. The Net Revenues so pledged shall be and remain subject to such lien until the payment in full of the principal of and interest on the Bonds or until Bonds are defeased as provided in Section 23.

The Authorized Officer is hereby authorized and directed to determine in an order signed by the Authorized Officer upon or prior to the delivery of the Series 2021 Bonds whether the

Series 2021 Bonds are First Lien Bonds or Junior Lien Bonds, both as defined and characterized herein.

The Series 2021 Bonds, including both principal and interest thereon, shall not be a general obligation of the Issuer and shall not constitute an indebtedness of the Issuer for the purpose of any debt limitations imposed by any constitutional or statutory provisions.

Section 7. PRIOR REDEMPTION. The Series 2021 Bonds issued and sold to the Authority shall be subject to redemption prior to maturity by the Issuer only with the prior written consent of the Authority and on such terms as may be required by the Authority.

Section 8. PAYING AGENT AND REGISTRATION.

(a) Appointment of Paying Agent. From time to time the Authorized Officer shall designate and appoint a Paying Agent, which shall also act as transfer agent and bond registrar. The initial Paying Agent shall be the Treasurer of the Issuer. In the event of a change in the Paying Agent, notice shall be given in writing, by certified mail, to each Registered Owner not less than sixty (60) days prior to the next interest payment date. The Paying Agent shall keep the official books for the recordation of the Registered Owners of the Bonds.

(b) Registration of Bonds. Registration of the Bonds shall be recorded in the registration books of the Issuer to be kept by a Paying Agent. Bonds may be transferred only by submitting the same, together with a satisfactory instrument of transfer signed by the Registered Owner or the Registered Owner's legal representative duly authorized in writing, to the Paying Agent, after which a new Bond or Bonds shall be issued by the Paying Agent to the transferee (new registered owner) in any denomination, in the same aggregate principal amount as the Bond submitted for transfer. No transfer of Bonds shall be valid unless and until recorded on the bond registration books in accordance with the foregoing. The person in whose name any Bond is registered may for all purposes, notwithstanding any notice to the contrary, be deemed and

treated by the Issuer and the Paying Agent as the absolute owner thereof, and any payment of principal and interest on any Bond to the Registered Owner thereof shall constitute a valid discharge of the Issuer's liability upon such Bond to the extent of such payment. No Bond shall be transferred less than fifteen (15) days prior to an interest payment date nor after the Bond has been called for redemption.

(c) Authority's Depository. Notwithstanding any other provision of this Resolution or the Series 2021 Bonds, so long as the Authority is the owner of the 2021 Bonds, (a) the Series 2021 Bonds are payable as to principal, premium, if any, and interest at The Bank of New York Mellon Trust Company, N. A., or at such other place as shall be designated in writing to the Issuer by the Authority (the "Authority's Depository"); (b) the Issuer agrees that it will deposit with the Authority's Depository payments of the principal of, premium, if any, and interest on the Series 2021 Bonds in immediately available funds by 12:00 p.m. (noon) at least five business days prior to the date on which any such payment is due whether by maturity, redemption or otherwise; in the event that the Authority's Depository has not received the Issuer's deposit by 12:00 p.m. (noon) on the scheduled day, the Issuer shall immediately pay to the Authority as invoiced by the Authority an amount to recover the Authority's administrative costs and lost investment earnings attributable to that late payment; and (c) written notice of any redemption of the Series 2021 Bonds shall be given by the Issuer and received by the Authority's Depository at least 40 days prior to the date on which such redemption is to be made.

Section 9. SALE OF BONDS. The Series 2021 Bonds shall be sold to the Authority. The Issuer determines that a negotiated sale to the Authority is in the best interest of the Issuer because the terms offered by the Authority are more favorable than those available from other sources of funding.

Section 10. BOND FORM. The Series 2021 Bonds shall be in substantially the following form with such completions, changes and additions as may be required by the Authority or as recommended by the Issuer's Bond Counsel and approved by the officers of the Issuer signing the Series 2021 Bonds:

**UNITED STATES OF AMERICA
STATE OF MICHIGAN
COUNTY OF GENESEE**

OF

SEWAGE DISPOSAL SYSTEM _____ LIEN REVENUE BONDS, SERIES 2021

Interest Rate

Maturity Date

Date of Original Issue

See Schedule I

_____, 2021

Registered Owner: Michigan Finance Authority

Principal Amount:

The City of Flint, Genesee County, Michigan (the "Issuer"), acknowledges itself indebted and, for value received, hereby promises to pay to the Registered Owner specified above, or registered assigns, out of the net revenues of the Sewage Disposal System of the Issuer (the "System"), including all appurtenances, additions, extensions and improvements thereto after provision has been made for reasonable and necessary expenses of operation, maintenance and administration of the System (the "Net Revenues"), the amounts and on the Dates of Maturity set forth on Schedule I herein, together with interest thereon from the dates of receipt of such funds, or such later date to which interest has been paid, at the Interest Rate per annum specified above, first payable on [_____ 1, 20__], and semiannually thereafter on the first day of April and October of each year, except as the provisions hereinafter set forth with respect to redemption of this Bond prior to maturity may become applicable hereto.

The Issuer promises to pay to the Michigan Finance Authority (the "Authority") the principal amount of this Bond or so much thereof as shall have been advanced to the Issuer pursuant to a Purchase Contract between the Issuer and the Authority and a Supplemental Agreement by and among the Issuer, the Authority and the State of Michigan acting through the Michigan Department of Environment, Great Lakes and Energy.

During the time funds are being drawn down by the Issuer under this Bond, the Authority will periodically provide the Issuer a statement showing the amount of principal that has been advanced and the date of each advance, which statement shall constitute prima facie evidence of the reported information; provided that no failure on the part of the Authority to provide such a statement or to reflect a disbursement or the correct amount of a disbursement shall relieve the Issuer of its obligation to repay the outstanding principal amount actually advanced, all accrued interest thereon, and any other amount payable with respect thereto in accordance with the terms of this Bond.

Notwithstanding any other provision of this Bond, so long as the Authority is the owner of this Bond, (a) this Bond is payable as to principal, premium, if any, and interest at The Bank

of New York Mellon Trust Company, N. A., or at such other place as shall be designated in writing to the Issuer by the Authority (the "Authority's Depository"); (b) the Issuer agrees that it will deposit with the Authority's Depository payments of the principal of, premium, if any, and interest on this Bond in immediately available funds by 12:00 p.m. (noon) at least five business days prior to the date on which any such payment is due whether by maturity, redemption or otherwise; in the event that the Authority's Depository has not received the Issuer's deposit by 12:00 p.m. (noon) on the scheduled day, the Issuer shall immediately pay to the Authority as invoiced by the Authority an amount to recover the Authority's administrative costs and lost investment earnings attributable to that late payment; and (c) written notice of any redemption of this Bond shall be given by the Issuer and received by the Authority's Depository at least 40 days prior to the date on which such redemption is to be made.

This Bond, being one fully registered manuscript bond, is issued in accordance with the provisions of Act 94, Public Acts of Michigan, 1933, as amended and a resolution adopted by the City Council of the Issuer on [____], 2021 (the "Resolution"), for the purpose of paying the cost of acquiring and constructing improvements to the System. This Bond is a self-liquidating Bond, and is not a general obligation of the Issuer within any constitutional, statutory or charter limitation, but is payable, both as to principal and interest, solely from the Net Revenues of the System. The principal of and interest on this Bond are secured by a statutory lien on the Net Revenues.

The Issuer hereby covenants and agrees to fix, and maintain at all times while any of the Bonds shall be outstanding, such rates for service furnished by the System as shall be sufficient to provide for payment of the principal of and interest upon all such Bonds as and when the same become due and payable, to maintain a bond and interest redemption account and to provide for the payment of expenses of administration and operation and such expenses for maintenance of the System as are necessary to preserve the same in good repair and working order, and to provide for such other expenditures and funds for the System as are required by the Resolution. [If bond issued as Junior Lien Bond: The statutory liens securing any First Lien Bonds (as defined in the Resolution) issued by the Issuer will be first liens that are and shall remain superior to the lien on the Net Revenues securing this Bond and any and any Additional Junior Lien Bonds (as defined in the Resolution). The Bonds of this series shall have equal standing with any Additional Junior Lien Bonds that may be issued pursuant to the Resolution, and additional bonds of superior standing to the bonds of this series may be issued pursuant to the Resolution.] [If bond issued as First Lien Bond: The Bonds of this series shall have equal standing with the Issuer's First Lien Bonds (as defined in the Resolution) that may be issued pursuant to the Resolution and the lien securing this Bond is superior to the lien on the Net Revenues securing Junior Lien Bonds (as defined in the Resolution) that may be issued pursuant to the Resolution.] For a complete statement of the revenues from which, and the conditions under which, this Bond is payable, a statement of the conditions under which additional bonds of equal or superior standing may hereafter be issued, and the general covenants and provisions pursuant to which this Bond is issued, reference is made to the Resolution.

Bonds of this series may be subject to redemption prior to maturity by the Issuer only with the prior written consent of the Authority and on such terms as may be required by the Authority.

In the event of a default in the payment of principal or interest hereon when due, whether at maturity, by redemption or otherwise, the amount of such default shall bear interest (the "additional interest") at a rate equal to the rate of interest that is two percent above the Authority's cost of providing funds (as determined by the Authority) to make payment on the bonds of the Authority issued to provide funds to purchase this Bond but in no event in excess of the maximum rate of interest permitted by law. The additional interest shall continue to accrue until the Authority has been fully reimbursed for all costs incurred by the Authority (as determined by the Authority) as a consequence of the Issuer's default. Such additional interest shall be payable on the interest payment date following demand of the Authority. In the event that (for reasons other than the default in the payment of any municipal obligation purchased by the Authority) the investment of amounts in the reserve account established by the Authority for the bonds of the Authority issued to provided funds to purchase this Bond fails to provide sufficient available funds (together with any other funds that may be made available for such purpose) to pay the interest on outstanding bonds of the Authority issued to fund such account, the Issuer shall and hereby agrees to pay on demand only the Issuer's pro rata share (as determined by the Authority) of such deficiency as additional interest on this Bond.

It is hereby certified and recited that all acts, conditions and things required by law, precedent to and in the issuance of this Bond, exist and have been done and performed in regular and due time and form as required by law and that the total indebtedness of the Issuer including this Bond, does not exceed any charter, constitutional or statutory limitation.

IN WITNESS WHEREOF, the City of Flint, Genesee County, Michigan, by its City Council, has caused this Bond to be signed, by the manual or facsimile signatures of its Mayor and its City Clerk, all as of the ____ day of _____, 20__.

By: _____
Mayor

(Seal)
Countersigned:

By: _____
City Clerk

ASSIGNMENT

For value received, the undersigned hereby sells, assigns and transfers unto _____

(please print or type social security number or taxpayer identification number and name and address of transferee)

the within bond and all rights thereunder and does hereby irrevocably constitute and appoint _____ attorney to transfer the within bond on the books kept for registration thereof, with full power of substitution in the premises.

Dated: _____, 20__

Notice: The signature to this assignment must correspond with the name as it appears upon the face of the within bond in every particular, without alteration or enlargement or any change whatever. When assignment is made by a guardian, trustee, executor or administrator, an officer of a corporation, or anyone in a representative capacity, proof of his/her capacity to act must accompany the bond.

In the presence of: _____

Signature(s) must be guaranteed by an eligible guarantor institution participating in a Securities Transfer Association recognized signature guaranty program.

Signature Guaranteed: _____

Name of Issuer

CITY OF FLINT

DEQ Project No:

DEQ Approved Amount:

SCHEDULE I

Based on the schedule provided below, unless revised as provided in this paragraph, repayment of principal of the Bond shall be made until the full amount advanced to the Issuer is repaid. In the event the Order of Approval issued by the Department of Environmental Quality (the "Order") approves a principal amount of assistance less than the amount of the Bond delivered to the Authority, the Authority shall only disburse principal up to the amount stated in the Order. In the event (1) that the payment schedule approved by the Issuer and described below provides for payment of a total principal amount greater than the amount of assistance approved by the Order or (2) that less than the principal amount of assistance approved by the Order is disbursed to the Issuer by the Authority, the Authority shall prepare a new payment schedule that shall be effective upon receipt by the Issuer.

Due Date

Amount of Principal Installment Due

Interest on the Bond shall accrue on that portion of principal disbursed by the Authority to the Issuer from the date principal is disbursed, until paid, at the rate of ____% per annum, payable _____ 1, 20__, and semiannually thereafter.

The Issuer agrees that it will deposit with The Bank of New York Mellon Trust Company, N. A., or at such other place as shall be designated in writing to the Issuer by the Authority (the "Authority's Depository") payments of the principal of, premium, if any, and interest on this Bond in immediately available funds by 12:00 p.m. (noon) at least five business days prior to the date on which any such payment is due whether by maturity, redemption or otherwise. In the event that the Authority's Depository has not received the Issuer's deposit by 12:00 p.m. (noon) on the scheduled day, the Issuer shall immediately pay to the Authority as invoiced by the Authority an amount to recover the Authority's administrative costs and lost investment earnings attributable to that late payment.

[END OF BOND FORM]

Section 11. AUTHORIZED OFFICER. The Authorized Officer is hereby designated, for and on behalf of the Issuer, to do all acts and to take all necessary steps required to effectuate the sale, issuance and delivery of the Series 2021 Bonds to the Authority. The Authorized Officer is hereby authorized to execute and deliver the Contract Documents in substantially the form on file with the Clerk, with such changes, additions and completions as are approved by the Authorized Officer. The Issuer hereby approves the Contract Documents in the form presented at this meeting with such changes as are approved by the Authorized Officer. Notwithstanding any other provision of this Resolution, the Authorized Officer is authorized within the limitations of this Resolution to determine the specific interest rate or rates to be borne by the bonds, not exceeding 2.25% per annum, the principal amount, interest payment dates, dates of maturities, and amount of maturities, redemption rights, the title of the Series 2021 Bonds, date of issuance, the amount of the rate covenant in Section 19 and additional bonds test in Section 22, whether the Bonds are issued as First Lien Bonds or Junior Lien Bonds, and other terms and conditions relating to the Series 2021 Bonds and the sale thereof provided, however, the last annual principal installment shall not be more than thirty three years from the date of issuance of the Series 2021 Bonds. The Authorized Officer's approval of the terms shall be evidenced by his or her signature on the document or agreement stating such terms. The Authorized Officer is hereby authorized for and on behalf of the Issuer, without further City Council approval, to do all acts and take all necessary steps required to effectuate the sale, issuance, and delivery of the Series 2021 Bonds. The Authorized Officer is authorized to execute any orders, receipts, agreements, pledge agreements, documents or certificates necessary to complete the transaction, including, but not limited to, any issuers certificate, any certificates relating to federal or state securities laws, rules or regulations, and any revenue sharing pledge agreement. The Issuer hereby approves the Revenue Sharing Pledge Agreement in substantially the form presented to

this meeting, with such changes as are approved by the Authorized Officer and authorizes the Authorized Officer to execute and deliver the Revenue Sharing Pledge Agreement to the Authority if such action is recommended by the Issuer's financial advisor. The Authorized Officer is authorized to execute and file any applications to the Michigan Department of Treasury, including an Application for State Treasurer's Approval to Issue Long-Term Securities and any other applications to the Michigan Department of Treasury and to seek any waivers from the Michigan Department of Treasury.

Section 12. EXECUTION OF BONDS. The Series 2021 Bonds shall be executed in the name of the Issuer by the manual or facsimile signatures of The Mayor and the Clerk of the Issuer and authenticated by the manual signature of the bond registrar and paying agent, and the seal of the Issuer (or a facsimile thereof) shall be impressed or imprinted on the Series 2021 Bonds, either manually or by facsimile. Upon execution, the Series 2021 Bonds shall be delivered to the purchaser thereof.

Section 13. RIGHTS OF BONDHOLDERS. The Bondholders representing in the aggregate not less than twenty percent (20%) of the entire amount of Bonds then outstanding may protect and enforce the statutory lien, either at law or in equity, by suit, action, mandamus, or other proceedings, and enforce and compel the performance of all duties of the officials of the Issuer, including the fixing of sufficient rates, the collection of revenues, the proper segregation of revenues and the proper application thereof; provided, however, that such statutory lien shall not be construed to give any Registered Owner of any Bond authority to compel the sale of the System, the revenues of which are pledged thereto.

If there is any default in the payment of the principal of or interest on any of the Bonds, any court having jurisdiction in any proper action may appoint a receiver to administer and operate the System on behalf of the Issuer and under the direction of such court, and by and with

the approval of such court, to fix and charge rates and collect revenues sufficient to provide for the payment of any Bonds or other obligations outstanding against the revenues of the System and for the payment of the expenses of operating and maintaining the System and to apply the income and revenues of the System in conformity with the Act and this Resolution.

The owners or Bondholders, from time to time, of the Bonds, shall have all the rights and remedies given by law, and particularly by the Act, for the collection and enforcement of the Bonds and the security therefor.

Section 14. MANAGEMENT OF SYSTEM. Except as provided in this Resolution, the construction, alteration, repair and management of the System shall be under the supervision and control of the City Council. The Issuer may employ such persons in such capacities as it deems advisable to carry on the efficient management and operation of the System. The City Council may make such rules, orders and regulations as it deems advisable and necessary to assure the efficient management and operation of the System.

Section 15. SUPERVISED BANK ACCOUNTS. The Director of Finance of the Issuer shall be custodian of all funds belonging to and/or associated with the System and such funds shall be deposited in a bank or banks, each of which has unimpaired capital and surplus of at least \$2,000,000, or which are each a member of the Federal Deposit Insurance Corporation.

Section 16. FUNDS AND ACCOUNTS. The Director of Finance is hereby directed to create and maintain the following funds, which shall be designated as follows, into which the Bond proceeds and the revenues and income from the System shall be deposited, which funds and accounts shall be established and maintained, except as otherwise provided, so long as any of the Bonds hereby authorized remain unpaid.

(a) CONSTRUCTION FUND. The proceeds of the Series 2021 Bonds shall be deposited in the Construction Fund. Such moneys shall be used solely for the purpose for

which the Series 2021 Bonds were issued. Any unexpected balance in the Construction Fund remaining after completion of the Improvements may be used for such purposes as allowed by law. After completion of the Improvements and disposition of remaining Series 2021 Bond proceeds, if any, pursuant to the provisions of this Section, the Construction Fund shall be closed.

(b) RECEIVING FUND. The gross income and revenue of the System shall be set aside into the Receiving Fund. The moneys so deposited are pledged for the purpose of the following funds and accounts and shall be expended and used only in the manner and order as follows:

(i) Operation and Maintenance Fund. The Issuer shall create and maintain the Operation and Maintenance Fund. Prior to the beginning of each fiscal year, the City Council shall prepare an annual budget of the System for the ensuing fiscal year. Out of the revenues in the Receiving Fund, there shall be set aside, quarterly and deposited into the Operation and Maintenance Fund a sum sufficient to pay the reasonable and necessary current expenses of administering, operating and maintaining the System for the ensuing three months.

(ii) Redemption Account. The Issuer shall create and maintain the Redemption Account.

(A) First Lien Redemption Account. The First Lien Redemption Account shall be established as a subaccount within the Redemption Account to be used solely for the purpose of paying the principal of and interest on First Lien Bonds. After the transfers required above, there shall first be transferred quarterly from the Receiving Fund, and deposited in the First Lien Redemption Account, for payment of principal of and interest on the First Lien Bonds, a sum equal to at least one-half (1/2) of the amount of interest due on First Lien Bonds on the next ensuing interest payment dates plus not less than one-fourth (1/4) of the

principal maturing on First Lien Bonds on the next ensuing principal payment dates in each year. The moneys in the First Lien Redemption Account shall be accounted for separately.

(B) Bond Reserve Account. The Bond Reserve Account shall also be established as a subaccount of the Redemption Account. Upon the issuance of any First Lien Bonds, the Issuer shall deposit into the Bond Reserve Account such amounts determined by the Issuer in the resolution authorizing such First Lien Bonds, to be used as provided in the resolution authorizing their issuance. No deposit to the Bond Reserve Account shall be required for the Series 2021 Bonds.

(C) Junior Lien Redemption Account. The Junior Lien Redemption Account shall also be established as a subaccount within the Redemption Account to be used solely for the purpose of paying the principal of and interest on the Junior Lien Bonds. After the transfers required above, there shall be transferred quarterly from the Receiving Fund, and deposited in the Junior Lien Redemption Account for payment of principal of and interest on the Junior Lien Bonds, a sum equal to at least one-half (1/2) of the amount of interest on Junior Lien Bonds due on the next ensuing interest payment dates plus not less than one-fourth (1/4) of the principal maturing on Junior Lien Bonds on the next ensuing principal payment dates in each year. The monies in the Junior Lien Redemption Account shall be accounted for separately.

(D) Additional Deposits. If for any reason there is a failure to make a required deposit to any of the subaccounts of the Redemption Fund or for any reason there is a deficiency in any of the subaccounts, then an amount equal to the deficiency shall be set aside and deposited in the subaccount from the Net Revenues in the next succeeding period, which amount shall be in addition to the regular deposit required during such succeeding period.

No further payments need be made into a subaccount of the Redemption Fund after the amount accumulated and held in the subaccount is sufficient to pay

when due the entire amount of principal and interest that will be payable at the time of maturity or at an earlier redemption date of all the Bonds then remaining outstanding that are payable from the subaccount, or for Bonds that have been defeased as provided in Section 23.

(iii) General Obligation Debt Fund. The G. O. Fund is hereby established. After meeting the requirement of the foregoing funds, there may be transferred quarterly from remaining revenues in the Receiving Fund, or from other available monies, and deposited in the G. O. Fund, such sums as the City Council in its sole discretion determines to be desirable to pay debt service on presently existing or future general obligation bond issues of the Issuer or general obligation contractual obligations of the Issuer incurred or to be incurred for System purposes. This section shall not be construed to create a lien on the Net Revenues in favor of any obligations the debt service on which may be paid from the G. O. Fund from time to time.

(iv) Improvement and Repair Fund. The Issuer hereby establishes the Improvement and Repair Fund, into which there shall be placed, after meeting the requirements of the subsections set forth above, such sums as the City Council shall determine to be used by the Issuer for the purpose of acquiring and constructing improvements, additions and extensions to the System and for making repairs and replacements to the System.

(v) Surplus Moneys. All moneys remaining in the Receiving Fund at the end of any operating year after satisfying the above requirements may be transferred to the Redemption Account and its subaccounts and used as authorized in this Resolution or, at the option of the Issuer, transferred to the G. O. Fund or the Improvement and Repair Fund and used for the purposes for which said funds were established. Provided, however, that if there should be a deficit in the Operation and Maintenance Fund, and any subaccount of the Redemption Account, a bond reserve account or the G. O. Fund on account of defaults in setting aside therein

the amounts required in this Resolution, or a future resolution, then the Issuer shall transfer the moneys remaining in the Receiving Fund at the end of any operating year to such funds in the priority and order named, to the extent of such deficits. Available surplus moneys may be used to retire any outstanding obligations of the Issuer incurred for construction, expansion or addition to the System, including additional bonds, the issuance of which is authorized by this Resolution, or if no other disposition has been provided for, such moneys may be used for such other purposes of the System as the City Council may deem to be for the best interest of the Issuer.

(vi) Priority of Accounts. In the event the monies in the Receiving Fund are insufficient to provide for the current requirements of the Operation and Maintenance Fund or any subaccounts of the Redemption Account, any monies or securities in other funds of the System, except the Construction Fund, shall be credited or transferred, first, to the Operation and Maintenance Fund, second to the First Lien Redemption Account, third to a bond reserve account and fourth to the Junior Lien Redemption Account, to the extent of any deficit therein.

Section 17. INVESTMENT OF FUNDS. Moneys in the funds and accounts established herein may be invested by the Issuer in bonds, notes, bills and certificates of, or guaranteed by, the United States of America, or in interest bearing time deposits or other investments as shall be determined by the Issuer, subject to the provisions of Act 20, Public Acts of Michigan, 1943, as amended, or any statute subsequently adopted regulating investments by the Issuer, and subject to the limitations imposed by arbitrage regulations and Section 148 of the Code. Profit realized or interest income earned on investment of funds in the various funds and accounts shall be deposited in or credited as received to the Receiving Fund.

Section 18. DEPOSITORY AND FUNDS ON HAND. Monies in the several funds and accounts maintained pursuant to this Resolution, except monies in the Construction Fund and Redemption Account, which must be kept in a separate account, may be kept in one or more

accounts at financial institutions designated by resolution of the Issuer, and if kept in one account, the monies shall be allocated on the books and records of the Issuer in the manner and at the times provided in this Resolution.

Section 19. RATES AND CHARGES. Rates shall be fixed and revised from time to time by the City Council so as to produce amounts that are sufficient to pay the expenses of administration and the costs of operation and maintenance of the System, to provide an amount of revenues adequate for the payment of principal of and interest on the Bonds, reserve, replacement and improvement requirements, if any, and to otherwise comply with all requirements and covenants provided herein; and such that are reasonably expected to yield annual Net Revenues of the System, in the current fiscal year equal to at least 100% of the average annual principal and interest thereafter maturing in any fiscal year on the then outstanding First Lien Bonds and equal to at least 100% of the average annual principal and interest thereafter maturing in any fiscal year on the then outstanding Junior Lien Bonds; and promptly upon any material change in the circumstances which were not contemplated at the time such rates and charges were most recently reviewed, but not less frequently than once in each fiscal year, review the rates and charges for its services and promptly revise such rates and charges as necessary to comply with the foregoing requirement. The rates and charges for all services and facilities rendered by the System shall be reasonable and just, taking into consideration the costs and value of the System, the cost of maintaining, repairing, and operating the System, and the amounts necessary for the retirement of all Bonds and interest accruing on all Bonds, and there shall be charged such rates and charges as shall be adequate to meet the requirement of this and the preceding sections.

Section 20. Reimbursement. The Issuer declares that it reasonably expects to make advances of funds to make improvements to the Issuer's sewage disposal system. The entire amount

of such advances are reimbursable and will be reimbursed from proceeds of the Bonds in accordance with the Reimbursement Regulations.

Section 21. NO FREE SERVICE. No free service shall be furnished by the System to the Issuer or to any individual, firm or corporation, public or private, or to any agency or instrumentality.

Section 22. REVENUE BOND COVENANTS. The Issuer covenants and agrees, so long as any of the Bonds hereby authorized remain unpaid, as follows:

(a) It will punctually perform all duties with reference to the System and comply with applicable State laws and regulations and continually operate and maintain the System in good condition.

(b) It will not sell, lease, mortgage or in any manner dispose of the System, or any substantial part of it, until all Bonds payable from the revenues of the System shall have been paid in full or provision has been made for the payment of such Bonds.

(c) It will cause an annual review of rates and charges to be made and based thereon will adjust such rates and charges to provide the amounts required by this Resolution.

(d) It will maintain complete books and records relating to the operation of the System and its financial affairs, will cause such books and records to be audited annually at the end of each fiscal year and an audit report prepared, and will furnish a Bondholder a copy of such report upon written request.

(e) It will prepare, keep and file such records, statements and accounts as may be required by law and that, if required by law, it will file a report with the Michigan Department of Treasury, not later than one hundred and eighty (180) days after the close of the fiscal year, on forms prepared by the Department of Treasury, completely setting forth the financial operation for such fiscal year of the System in accordance with the accounting method of the municipality.

(f) It will maintain and carry insurance on all physical properties of the System, for the benefit of the Bondholders, of the kinds and in the amounts normally carried by municipalities engaged in the operation of similar systems. All moneys received for losses under any such insurance policies shall be applied solely to the replacement and restoration of the property damaged or destroyed, and to the extent not so used, shall be used for the purpose of calling Bonds.

(g) It hereby pledges, from other funds of the Issuer available for such purpose, such moneys as may be necessary on an annual basis to maintain the requirements of the following Section for the issuance of additional bonds.

Section 23. ADDITIONAL BONDS. Additional First Lien Bonds of equal standing and priority with any outstanding First Lien Bonds may be issued for repair, replacement, improvement or extension of the System, and to refund all or a portion of Bonds and paying the costs of issuing the Additional First Lien Bonds, but only if the average Adjusted Net Revenues for the last two completed operating years, or the Adjusted Net Revenues for the last completed operating year if the same shall be lower than the average, shall be equal to at least 100% of the average annual principal and interest thereafter maturing in any operating year on the then outstanding First Lien Bonds and the Additional First Lien Bonds then being issued. In addition, Additional First Lien Bonds of equal standing and priority with any outstanding First Lien Bonds may be issued to refund all or a portion of outstanding First Lien Bonds if the refunding would provide a net present value debt service savings to the Issuer. If the Additional First Lien Bonds are to be issued in whole or in part for refunding outstanding Bonds, the annual principal and interest requirements shall be determined by deducting from the principal and interest requirements for each operating year the annual principal and interest requirements of any Bonds

to be refunded from the proceeds of the Additional First Lien Bonds. Junior Lien Bonds may be issued in the discretion of the Issuer.

Any additional Bonds shall be subject to the various funds herein established, and all revenue from any such extension or replacement constructed by the proceeds of any additional Bonds shall be paid into the Receiving Fund.

Section 24. DEFEASANCE. In the event cash or direct obligations of the United States or obligations the principal of and interest on which are guaranteed by the United States, or a combination thereof, the principal of and interest on which, without reinvestment, come due at times and in amounts sufficient to pay at maturity or irrevocable call for earlier optional or mandatory redemption, the principal of, premium, if any, and interest on any of the Bonds, shall be deposited in trust, this Resolution shall be defeased with respect to such Bonds (the “Defeased Bonds”), and the owners of the Defeased Bonds shall have no further rights under this Resolution except to receive payment of the principal of, premium, if any, and interest on the bonds from the cash or securities deposited in trust and the interest and gains thereon and to transfer and exchange bonds as provided herein. Defeased Bonds shall be treated as if they have been redeemed for all purposes under this Resolution.

Section 25. REVENUE SHARING PLEDGE. The Issuer hereby authorizes the pledge and assignment to the full extent permitted by Act 140 and Act 227 to the Authority as purchaser of the Series 2021 Bonds all of the payments that the Issuer is eligible to receive under Act 140 as additional security for the payment of the principal of, premium, if any, and interest on the Series 2021 Bonds. Such pledge and assignment shall be evidenced by the Revenue Sharing Pledge Agreement.

Section 26. FISCAL YEAR OF SYSTEM. The fiscal year for operating the System shall coincide with the fiscal year of the Issuer.

Section 27. CONTRACT WITH BONDHOLDERS. The provisions of this Resolution shall constitute a contract between the Issuer and the Bondholders from time to time, and after the issuance of any of such Bonds, no change, variation or alteration of the provisions of this Resolution may be made that would lessen the security for the Bonds. The provisions of this Resolution shall be enforceable by appropriate proceedings taken by such Bondholder, either at law or in equity.

Section 28. TAX COVENANTS. The Issuer has consulted with its attorney and understands that the Code contains certain requirements on (i) the expenditure of proceeds from the sale of the Series 2021 Bonds, (ii) the investment of the proceeds from the issuance of the Series 2021 Bonds and (iii) the rebate of interest earned on the investment of the proceeds of the Series 2021 Bonds under certain circumstances. The Issuer hereby covenants to comply with such requirements.

The Issuer covenants to comply with all requirements of the Code necessary to assure that the interest on the Series 1999 Bonds will be and will remain excludable from gross income for federal income tax purposes. The Mayor, the Clerk, the Treasurer, the City Administrator, the Director of Finance and other appropriate officials of the Issuer are authorized to do all things necessary to assure that the interest on the Series 2021 Bonds will be and will remain excludable from gross income for federal income tax purposes.

Section 29. PUBLICATION AND RECORDATION. This Resolution shall be published once in full in a newspaper of general circulation in the Issuer qualified under state law to publish legal notices, and the same shall be recorded in the records of the Issuer and such recording authenticated by the signature of the Issuer Clerk.

Section 30. RESOLUTION SUBJECT TO MICHIGAN LAW. The provisions of this Resolution are subject to the laws of the State of Michigan.

Section 31. SECTION HEADINGS. The section headings in this Resolution are furnished for convenience of reference only and shall not be considered to be a part of this Resolution.

Section 32. SEVERABILITY. If any section, paragraph, clause or provision of this Resolution shall be held invalid, the invalidity of such section, paragraph, clause or provision shall not affect any of the other provisions of this Resolution.

Section 33. CONFLICT. All Resolutions or parts thereof, insofar as the same may be in conflict herewith, are hereby repealed to the extent of the conflict; provided, that the foregoing shall not operate to repeal any provision thereof, the repeal of which would impair the obligation on the Bonds.

Section 34. EFFECTIVE DATE OF RESOLUTION. Pursuant to Section 6 of the Act, this Resolution shall be approved on the date of first reading and this Resolution shall be effective immediately upon its adoption.

YEAS: _____

NAYS: _____

ABSENT: _____

RESOLUTION DECLARED ADOPTED.

CERTIFICATION

I, Inez M. Brown, the duly qualified and acting City Clerk of the City of Flint, Genesee County, Michigan, do hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Flint City Council at a regular meeting held on August _____, 2021, and that notice of said meeting was given pursuant to Act No. 267, Public Acts of Michigan, 1976, as amended.

IN WITNESS WHEREOF, I further hereunto affixed my signature this _____ day of August _____, 2021.

Inez Brown, City Clerk



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 08/19/2021

BID/PROPOSAL: N/A

AGENDA ITEM TITLE: Resolution the Authorize the Sale of Bonds for CWSRF Phase II – 5709-01

PREPARED BY: Krystal Wallace, Water Pollution Control

VENDOR NAME: N/A - SEWAGE DISPOSAL SYSTEM BOND ISSUANCE

BACKGROUND/SUMMARY OF PROPOSED ACTION:

The Clean Water State Revolving Fund (CWSRF) project plan was approved, adopted, and designated authorized project representatives on June 24, 2019. The CWSRF loan description and details are organized into a comprehensive 20-year Project Plan, separated into multiple Phases.

Currently the construction for Phase-I is ongoing and three of the six projects will be significantly completed by March of 2022. Engineering plans and the solicitation for the three Phase-II construction proposals have been successfully achieved. Resolutions to approve the Phase-II construction projects were adopted on August 10, 2021. Upon successful completion and acceptance of the pending Phase-II loan application; construction for the Phase-II projects may commence by November 2021.

The authorization to issue bonds is a requirement of the CWSRF Loan application process. These projects have been deemed essential to the continued reliability, safety, and cost effective operation of the wastewater system/sewage disposal system. The program offers a % forgiveness that will be determined at a later date.

Timelines for this project have been established by the Michigan Department of Treasury.

FINANCIAL IMPLICATIONS: None

BUDGETED EXPENDITURE? YES ☒ NO ☐ IF NO, PLEASE EXPLAIN:

Dept.	Name of Account	Account Number	Grant Code	Amount
DPW-WPC	No Costs Associated with this Resolution			
		FY21 GRAND TOTAL		\$0.00

PRE-ENCUMBERED? YES ☐ NO ☐ REQUISITION NO: N/A

ACCOUNTING APPROVAL: KWallace **Date:** 08/19/2021



CITY OF FLINT

WILL YOUR DEPARTMENT NEED A CONTRACT? YES ☐ NO ☐

(If yes, please indicate how many years for the contract) YEARS

WHEN APPLICABLE, IF MORE THAN ONE (1) YEAR, PLEASE ESTIMATE TOTAL AMOUNT FOR EACH BUDGET YEAR: (This will depend on the term of the bid proposal)

BUDGET YEAR 1

BUDGET YEAR 2

BUDGET YEAR 3

OTHER IMPLICATIONS (i.e., collective bargaining): None.

STAFF RECOMMENDATION: (PLEASE SELECT): ☒ **APPROVED** ☐ **NOT APPROVED**

DEPARTMENT HEAD SIGNATURE: _____

Jeanette M. Best
(Jeanette M. Best, WPC Manager)



RESOLUTION NO.: 210157
PRESENTED: APR - 7 2021
ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT OF DR. NANCY LOVE TO THE WATER
SYSTEM ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.

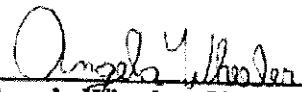
WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects.;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded.;; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

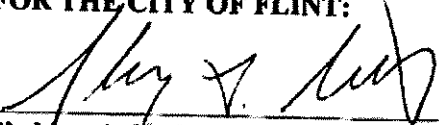
WHEREAS, Mayor Neeley desires to appoint Dr. Nancy Love to the Water System Advisory Council (See Attached Resume).

NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Dr. Nancy Love address 1351 Beal Avenue, Ann Arbor, MI 48109 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:


Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:


Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President

S:\AWO\Water System Advisory Council\Revised Documents\J.Gaskin (Clean Copy) Resolution to Appoint to the Water System Advisory Council (1).doc

NANCY G. LOVE, Ph.D., P.E., BCEE

Borchardt and Glysson Collegiate Professor

3B University of Michigan, 4B183 EWRE, 1351 Beal Avenue, Ann Arbor, MI 48109-2125

0B Voice: (734) 763-9664; 2BE-mail: nglove@umich.edu; N-E-Wcycles.org (*under construction*)**RESEARCH OVERVIEW**

In collaboration with my students, I work at the interface of water, infrastructure, and public health in both domestic and global settings. My group advances public and environmental health using chemical, biological, and computational approaches applied to water systems, and co-design methods in partnership with communities. Specific project areas include: evaluating the fate of chemicals, pathogens and contaminants of emerging concern in water with relevance to public health and the environment; using technologies to sense and remove these constituents; advancing technologies that recover useful resources from water, and developing approaches that enable local decision-making around water quality, resource efficiency, and equity.

EDUCATION

Doctor of Philosophy Environmental Systems Engineering, Clemson University Advisor: C. P. Leslie Grady Jr.	1994
Masters of Science Civil Engineering, University of Illinois at Urbana-Champaign Advisor: John T. Pfeffer	1986
Bachelors of Science Civil Engineering, University of Illinois at Urbana-Champaign	1984

PROFESSIONAL EXPERIENCE AND LICENSURE

Professor Department of Civil & Environmental Engineering, University of Michigan (U-M) Co-Founder and Co-PI, Environmental Biotechnology Lab, U-M	2008-present
U-M Faculty Affiliate Graham Sustainability Institute (http://graham.umich.edu/); Energy Institute (https://energy.umich.edu/); Poverty Solutions Institute (https://poverty.umich.edu/); African Studies Center (https://li.umich.edu/asc)	Present
Licensed Professional Engineer Environmental Engineering, State of Michigan, License No. 6201057483.	2010 - present
Adjunct Professor Institute of Biotechnology, Addis Ababa University, Ethiopia	2016 - 2019
Staff UNESCO-IHE (United Nations Water Education Institute), sabbatical	Feb – July 2014
Associate Dean for Academic Programs and Initiatives Horace H. Rackham School for Graduate Studies	2011 - 2012
Board Certified Environmental Engineer (BCEE) Certified by Eminence, American Academy of Environmental Engineers	2011-present
Department Chair Department of Civil and Environmental Engineering, University of Michigan	2008 – 2011
Professor Department of Civil and Environmental Engineering, Virginia Tech	2005 – 2007
Adjunct Professor Department of Biological Sciences, Virginia Tech	2002 – 2007

Associate Professor Department of Civil and Environmental Engineering, Virginia Tech	2000 – 2005
Assistant Professor Department of Civil and Environmental Engineering, Virginia Tech	1994 – 2000
Co-Founder and Co-Principal Investigator at Virginia Tech Environmental BioNanoTechnology Laboratory, Virginia Tech Fralin Environmental Biotechnology Laboratory, Virginia Tech	2005 – 2007 1995 – 1999
Project Engineer CH2M Hill, Inc. (now Jacobs Engineering Group), Dallas, Texas	1986 – 1989

ADMINISTRATIVE ACCOMPLISHMENTS

- | | |
|--|-------------------------|
| <ul style="list-style-type: none"> Became Diversity, Equity, and Inclusion (DEI) chair in the summer of 2020 to re-envision leadership around DEI and lead a collaborative team to develop an actionable roadmap for change. The committee was transformed to include voting members from across the department (students, staff, post-docs and faculty), all member categories were given equally visible leading positions in the committee, and structured the committee operating practices toward transparency and inclusion to serve as a model. A roadmap to drive systemic change was drafted, vetted, modified and is being finalized for publication. The roadmap includes efforts and goals across six pillars (recruiting a diverse community; building and valuing DEI skills; fostering a strong, connected, and successful community; developing a healthy and safe environment for mentoring, sponsorship, and advocacy; enabling an honest and transparent dialogue; and transforming our curriculum). In anticipation of an upcoming sabbatical and to ensure leadership continuity, I stepped down as lead once the roadmap was entering final production. This allows a new leader to be established in time for the public launch. | July 2020 - current |
| <ul style="list-style-type: none"> As a member of the board of the Association of Environmental Engineering and Science Professors (a position elected by the organization's membership), I was elected onto the Vice-President, President-Elect, and President path by the board. As president, I engaged international members by hosting the first AEESP-International Water Association (IWA) joint reception at the IWA World Congress in Quebec City, and appointed international members to key committee leadership positions. I also initiated the movement of the organization from being self-run to using a management company that continues to oversee the board's functions. This has allowed the board to act more as a visionary and less as a managing body. All these changes remain today. | 2007-2011 |
| <ul style="list-style-type: none"> As department chair of Civil and Environmental Engineering at the University of Michigan, I lead or oversaw: a significant transition in administrative staff; centralization of departmental operating management to enhance efficiencies; the development of procedures to achieve a balanced budget; the development of standard operating procedures and a governing document for the first time; the development of new strategic directions for the department; an increase in external funding of 40%; the doubling of student enrollments within a 5 year period; addition of \$8.5 million to the department's endowment; and hiring five faculty. | Jan 2008–
Aug 2011 |
| <ul style="list-style-type: none"> As a co-PI of the \$3.5 million Virginia Tech NSF Advance Institutional Transformation Grant focused on women's leadership in academia, I lead activities associated with graduate student and post-doctoral engagement toward the professoriate. | July 2003–
June 2008 |

MAJOR HONORS AND NOTABLE RECOGNITIONS

• American Society of Civil Engineers Wesley W. Horner Award for Daigger et al., Progress and Promise Transitioning to the One Water/Resource Recovery Integrated Urban Water Management Systems. <i>J Env Eng</i> , 2019.	2021
• American Academy of Environmental Engineers & Scientists Science Award	2020
• University of Illinois Urbana-Champaign Civil & Environmental Engineering Alumni Assoc. Distinguished Alumna Award	2020
• Kappe Lecture, American Academy of Environmental Engineers & Scientists	2019 - 2020
• AEESP/WEF Master Lecture: An Academic Perspective on Rethinking Urban Water Infrastructure Across the Classroom, Lab and Field. WEFTEC 2017, Chicago IL. October 2, 2017.	2017
• Distinguished Faculty Fellow in Sustainability, University of Michigan	2017-present
• Named Borchardt and Glysson Collegiate Professor, University of Michigan	2016
• Elected Fellow, Association of Environmental Engineering & Science Professors.	2015
• <i>Environmental Science and Technology Letters</i> , Best of the Best Paper Award for Delgado Vela et al. 2015 (see publications list).	2015
• Selected AEESP Distinguished Lecturer.	2015-2016
• Elected Fellow of the International Water Association.	2014
• Alec Gallimore Faculty Award from the Society of Minority Engineers and Scientists - Graduate (SMES-G) for being an effective advocate, ally and advisor to students of color, April 2012.	2012
• Gordon Maskew Fair Distinguished Engineering Educator, Water Environment Federation.	2011
• Elected Fellow of the Water Environment Federation. Inaugural class.	2011
• Certification by Eminence, Board Certified Environmental Engineer (BCEE). American Academy of Environmental Engineers.	2011
• President and Member of the Board, Association of Environmental Engineering and Science Professors. Position on Board of Directors is elected nationally, and position of president is then elected by the Board of Directors.	2007 - 2011
• Rudolfs Industrial Waste Management Medal for noteworthy accomplishments in industrial waste management research, Water Environment Federation. For Henriques et al. 2007. Activated sludge inhibition by chemical stressors – a comprehensive study. <i>Water Environment Research</i> 79(9):940-951.	2008
• CEE Alumni Teaching Excellence Award, Virginia Tech	2006
• Women's Center Advancing Women Award, Virginia Tech	2005
• Excellence in Research Award, College of Engineering, Virginia Tech	2005
• Faculty Fellow, \$15,000 over 3 years, College of Engineering, Virginia Tech	2003 – 2006
• Harrison Prescott Eddy Medal for outstanding contribution to wastewater principles/process research, Water Environment Federation. For Charles B. Bott and Nancy G. Love, for "Investigating a mechanistic cause for activated sludge deflocculation in response to shock loads of toxic electrophilic chemicals." <i>Water Environment Research</i> , 74:306-315 (2002).	2003
• Outstanding Young Alumni, College of Engineering & Science, Clemson Univ.	2002
• Paul L. Busch Award for Innovation in Applied Water Quality Research, Water Environment Research Foundation (\$100,000)	2001

- National Science Foundation CAREER Award Recipient 1995
- American Association of University Women Selected Professions Fellow 1993
- Chi Epsilon Civil Engineering Honor Society initiate 1985

PROFESSIONAL MEMBERSHIPS, ACTIVITIES AND APPOINTMENTS

Editorial Boards

- **ACS ES&T Engineering**, Associate Editor (inaugural) 2020 - present
- **Water Environment Research**
Editorial Board 2019 – present
Editor-in-Chief search committee 2009
Associate Editor 2002 - 2005
2015 - present
- **Environmental Engineering Science**, Editorial Board 2015 - present

Current Memberships and Activities

- **American Association for the Advancement of Science**
Member 2016 - present
- **American Academy of Environmental Engineers and Scientist (AAEES)**
Member 2011 – present
Board Certified Environmental Engineer (by eminence) 2012 – present
Environmental Engineering Science Awards Committee 2020 - present
Environmental Engineering and Science Foundation Board of Directors 2014-2016
- **American Chemical Society**
Member 2012 - present
- **American Society of Civil Engineers (ASCE)**
Member Discontinuous
Active participant: ASCE Department Chair's meetings 1980's – present
EWRE Sustainability subcommittee 2008-2011
2007 - 2009
- **American Society for Engineering Education**
Member Discontinuous
1994 - present
- **Association of Environmental Engineering and Science Professors**
Member and Fellow (2015) 1994 – present
Master's Thesis Awards Subcommittee (Chair, 1999) 1997 – 1999
Awards Committee (Chair, 2006-2007) 2004 – 2007
Board of Directors (Elected by membership; elected by board as Vice-President 2008-2009; President-Elect 2009-2010; President 2010-2011) 2007 – 2011
Co-Chair, AEESP 2017 Biannual Conference 2016-2017
AEESP Fellows Selection Committee 2018
- **International Water Association**
Member and Fellow (2014) 1989 – present
Environmental Engineering Education specialist's group, chair effective 2014 2006 - present
Microbial Ecology in Water Engineering (MEWE, formerly Activated Sludge Population Dynamics) Specialty Group member 1995 – present
MEWE program committee 2005 - 2019
Chair, MEWE2013 conference, Ann Arbor, Michigan USA 2012 - 2013
Leading Edge Technology (LET) Program Committee 2007 – 2009
Instrumentation, Control and Automation Group 2001 – 2007
Organizing Committee, Nutrient Management 2007 Workshop 2005 – 2007

MEGA working group member	2005 – 2008
Biofilms 2010 Conference Program Committee	2009 – 2010
• Water Environment Federation	
Member and Fellow (2011)	1986 – present
Awards Committee	2012 - present
Research Symposium Subcommittee	1999 – 2003
Virginia WEA Student Activities Committee	1997 – 2007
Work Force Task Force – WEF Presidential Appointment	2008 – 2009
Nutrient Specialty Conference Program Committee	2008 – 2009
Chair, Academic Committee	2009 – 2013
• Water Environment Research Foundation	
Leaders Innovation Forum for Technology (LIFT) Steering Committee	2015 – current
Chlorination Control and Monitoring Practices Project Advisory Committee	2000 - 2002
Wastewater Security Project Subcommittee	2003 – 2004
Sensors for Security in WWT Systems Project Advisory Committee	2005 – 2007
Paul L. Busch Award Selection Committee	2005 – 2011
Membrane Aerated Biofilm Reactor Project Advisory Committee, U2R14	2016-2018
Current Board Appointments	
• National Water Research Institute Independent Science Advisory Panel for Metropolitan Water District	2019-present
• ReNUWit Engineering Research Center Science Advisory Board, Stanford, UC-Berkeley, Colorado School of Mines, New Mexico State University	2015-2020
• University of Iowa NSF Sustainable Water Development Graduate Program Advisory Board Member	2017-2019
Prior Memberships, Activities and Board Appointments	
• American Society for Microbiology, Member	1991–2010
• Environmental Protection Agency EPA Science Advisory Board, Drinking Water Subcommittee	2010 - 2012
• Appointed Member, Michigan Department of Agriculture/Michigan Department of Environmental Quality Food Processors Working Group	2009 - 2010
• Michigan Economic Development Corporation (MEDC) Water Cluster Committee, establishing water-based technology investment goals for Michigan.	2008 – 2010
• National Society of Professional Engineers Member	Discontinuous 1987 - 2019
• Member, NSF's CLEANER (later, WATERS Network) Initiative as (a) planning phase participant, (b) Co-PI on environmental impacts to coastal margins planning grant and (c) Member, sensor sub-committee.	2002 – 2007
• Appointed by Governors Warner and Kaine (Virginia) to the Scientific and Technical Advisory Committee to the Chesapeake Executive Council Workshop co-chair and author, Establishing a Research Agenda for Assessing the Bioavailability of Wastewater-Derived Organic Nitrogen in Treatment Systems and Receiving Waters, September 27 and 28, 2007, Baltimore, Maryland. http://www.chesapeake.org/stac/Pubs/eonreport.pdf	2005 – 2007
• Women In Engineering Leadership Institute (WELI) Strategic Planning Committee	2004 – 2005

MAJOR COMMUNITY SERVICE AND OUTREACH ACTIVITIES

- **N95DECON.org.** A consortium of volunteer researchers from universities across the United States and world who worked to decipher, evaluate, and disseminate technically accurate information about N95 respirators as well as other kinds of masks and face coverings, in response the coronavirus pandemic. A key member of the Heat Treatment sub-team and participant in other subcommittees, as needed. April 2020 - present
- **City of Flint Technical Advisory Committee.** Appointed by Mayors Weaver (2017-2019) and Neeley (2019 – current) to provide guidance on behalf of the city's efforts in response to the Flint Water Crisis and other environmental and public health needs. 2017 – present
- **Train-the-Trainers.** Designed, developed, and delivered a curriculum about faucet-mounted point-of-use filters to Flint residents who became trainers for other Flint residents. Syndicated the curriculum to other communities with input from Flint community and partners. 2018 - present
- **K-12 Drinking Water Filtration.** Working with multiple organizations in the following ways: (a) developing and providing technical guidance on assessing the performance of point-of-use filters and advanced hydration stations used in schools (Flint Community Schools, Ann Arbor Public Schools); (b) provided technical input to the development of a model law by the National Resources Defense Council; (c) serving in a technical advisory role to the FilterFirst grassroots initiative that has successfully introduced bipartisan legislation in the State of Michigan to require point-of-use filtration of drinking water in schools and daycare centers throughout the state. 2018 - present
- **Partnerships around Research and Education in Ethiopia.** Partnering with faculty in various Institutes at Addis Ababa University in Ethiopia to advance graduate education as new Ph.D. programs are implemented. Create opportunities for AAU students to visit U-M for beneficial research experiences and partner those students with U-M Ph.D. students who serve as peer collaborators. Serve on the Ph.D. committees of AAU students. 2017 - 2019
- **Community-Targeted Scholarship**
N. G. Love, R. Jackson, S. P. McElmurry. Water Stays in the Pipes Longer in Shrinking Cities – A Challenge for Public Health. *The Conversation*, May 24, 2019. <http://theconversation.com/water-stays-in-the-pipes-longer-in-shrinking-cities-a-challenge-for-public-health-116119>
N. G. Love. We All Deserve to Have Confidence in Our Water. *Medium*. May 10, 2019. https://medium.com/@nglove/we-all-deserve-to-have-confidence-in-our-water-6994b2f7e00c?source=friends_link&sk=a1703f45b60797717658138319b971b1

MAJOR UNIVERSITY, COLLEGE & DEPARTMENT SERVICE/PROGRAMMATIC RESPONSIBILITIES

University of Michigan

- President's Public Health Advisory Committee on COVID Fall 2020-present
- UM Center for Global Health Equity Leadership Council, and co-chair of Climate Vulnerability and Health group. \$20 million center that is launching in 2021. Aug 2020-present
- University of Michigan Scientific Reviewer, Institutional Biosafety Committee (IBC), appointed by Vice President for Research July 1, 2020 – June 30, 2023
- CEE Diversity, Equity, and Inclusion Chair (through 2020), then committee member Aug 2020–present
- CEE Executive Committee (elected position) 2019-2021
- Undergraduate Recruitment Committee 2019-2020
- Richart Lecture Committee 2017-2018

• Advisory Group on University of Michigan activities in Ethiopia, Provost's office	2019-2020
• Advisory Group: U-M Lead and Copper Rule Project, Graham Institute overseeing Mott Foundation project.	2017-2019
• College of Engineering Graduate Recruitment, Retention & Summer Programs Advisory Group	2018-2019
• Civil and Environmental Engineering Strategic Plan Implementation and Development Committee, Revising plan in 2017-2018	2013-2018
• Internal Advisory Board Member, Center for Socially-Engaged Design	2017-2018
• Administrative Structure Working Group, School of the Environment and Sustainability Transition Subcommittee	2017-2020
• U-M ADVANCE LAUNCH Committee Chair	2017
• College of Engineering Promotion, Tenure and Reappointment Process Review Committee, Chair	2016-2017
• UM Energy Institute Faculty Affiliate (https://energy.umich.edu/)	2017
• College of Engineering Faculty Search Committee for positions in Engineering Education Research (EER)	2018-present
• Ethiopia – Michigan Collaborative Consortium (EMC2) Planning Committee, appointed by Assoc Provost James Holloway	2015-2016
• Provost's Committee on Environment and Sustainability	2015-2018
• Provost's Poverty Visioning Committee	2016
• Integrated Training in Microbial Systems (ITIMS) (Burroughs Wellcome Fund training program) Faculty Affiliate	2015-2016
• President's Advisory Commission on Women's Issues	2015 - present
• President's Postdoctoral Fellowship Advisory Committee	2014-2015
• Rackham Graduate School Dean Search Committee	2014-2015
• Provost's Promotion and Tenure Committee	2014
• Mentoring Others Results in Excellence (MORE) Committee, Rackham Graduate School, Member and Chair	2013
• Alumni Liaison Committee, Civil and Environmental Engineering	2012 - 2013
• Deans Advisory Committee on Female Faculty, College of Engineering	2012-2014
• Faculty Search Committee Co-Chair, Civil and Environmental Engineering	2012-2013
• Center for Molecular and Clinical Epidemiology of Infectious Diseases (MAC-EPID) Faculty Affiliate	2011-2012
• Graham Sustainability Institute Faculty Affiliate	2009 - present
• College of Engineering Alumni Awards Selection Committee	2009 - current
• Graham Environmental Sustainability Institute, Executive Committee	2011
• College of Engineering Dean's Advisory Committee on Faculty Diversity	2009 - 2011
• Provost's Office - Classroom Emergency Training Video Planning Group	2010 - 2012
• College of Engineering <i>ad hoc</i> Committee on Graduate Student Excellence	Fall 2008 – 2009
Virginia Tech	Summer 2008
• Chair, College of Engineering "Think Tank" Committee (6 faculty)	2006 – 2007
• Space/Overhead Return Allocation <i>ad hoc</i> Committee, Provost apptmt	2005

- College of Engineering Dean's Search Committee 2005
- co-Coordinator, Via Academic Preparation Program for graduate student professional development, Dept of Civil and Environmental Engineering 2004 – 2007
- co-Principal Investigator and Advance Professor for \$3.5 million NSF Advance Institutional Transformation grant focused on increasing the participation and advancement of women in academic STEM careers. Chair: Advancing Women into the Profession 2003 – 2006
- Environmental Public Health Committee 2003 – 2004
- Provost's Implementation Committee, Biomedical & Public Health Institute 2002
- Board of Directors, WPI, Inc., a Virginia Tech affiliated company. 2001 – 2003
- Provost's Environmental Health Committee 2002
- Provost's Committee on Biomedical Research 2001 – 2002
- College of Engineering Diversity Committee 2001 – 2005
- Environmental Engineering Laboratory Coordinator & staff supervisor 1997 – 2005
- University Cross Cutting Initiatives Committee, Environment & Energy 1998 – 2000
- Fralin Biotechnology Center 5 Year Review Committee 2000
- Environmental Engineering Graduate Student Recruitment Officer 2000

UNIVERSITY TEACHING RESPONSIBILITIES

Introduction to Environmental Engineering; Models in Environmental Engineering; Water and Wastewater Treatment Design; Applied Biology of Environmental Systems; Biological Treatment Processes: Theory and Design; Environmental Microbiology; Introduction to Civil and Environmental Engineering; Engineering Solutions to Global Water Issues (Freshmen Design-Build-Test course); Decentralized Water Supply, Hygiene and Sanitation (co-produced with faculty at Addis Ababa University, Ethiopia); Urban Environmental Systems: Project-based Experiences for Students (focused on a diverse group of students in Engineering; Urban Planning, Public Health, Environment & Sustainability); Robots, Sensors and Smart Water Systems (co-developed Freshmen Design-Build-Test Course)

ADVISING RESPONSIBILITIES

Currently serving as advisor for 2 undergraduate research students, 1 master's students, and 8 Ph.D. students. Previously advised 44 M.S. students with thesis or significant project, 18 Ph.D. students, 7 post-doctoral research associates, and 36 undergraduate research projects/theses.

Major Undergraduate Research Projects

1. Harrison Suchyta. Summer 2019-current. Developing urine-derived fertilizers for flowering and woody plants at UM's Botanical Garden.
2. Leah Pifer. Fall 2019 – current. Developing an algorithm for a hand-held water quality monitoring strip.
3. Julia Raneses. Fall 2019 – Aug 2020. Building-Scale Urine Separation Systems.
4. Kensey Dahlquist. Spring 2019 – current. Projects in support of building-scale urine separation, collection and processing for nutrient-energy-water cycling.
5. Yen Jee Ooi. Summer 2018 (at Rich Earth Institute), then Fall 2018-2019. Nutrient analysis for NSF INFEWS project.
6. Brittany Brown. Summers 2017 and 2018. Characterization of *Stenotrophomonas maltophilia* from drinking water through culturing and qPCR, and bioavailability of high versus low water age carbon.
7. Myriam Sarment. 2018 summer. Bioavailability of high versus low water age carbon in drinking water isolates.
8. Alexi Sinanaj. 2017 – 2018. Pharmaceutical removal from urine through activated carbon adsorption.
9. Brady Nishimiya. 2017-2018. Disinfection residual effectiveness of point-of-use product.
10. Nicholas Lowe. 2017-2018. Automated flushing device to improve water quality through point-of-use drinking water filters.

11. Dylan Raye-Leonard. 2016-2018. Urine-derived fertilizer project.
12. Brittany Brown. 2016. Microbial ecology of novel nitrogen removal systems.
13. Ishi Keenum. 2015 – 2016. Plasma treatment of source-separated urine for fertilizer development (co-mentor with K. Wigginton).
14. Mariah Gnegy. 2015-2016. DNA-based analysis of bacteria and viruses in source separated urine (co-mentor with K. Wigginton).
15. Weitian Wang. 2010-2011. Microaerobic Removal of Pharmaceuticals from Wastewater
16. Celine Saucier. 2010-2011. Nitrate Removal to Enable the Effluent Organic Nitrogen Bioassay
17. Bryan VanDuinen. 2009. Life Cycle Assessment of Various Disposal Methods for Unused Pharmaceuticals.
18. Shayan Sengupta. 2009: Assessing the Toxicity of Pharmaceuticals at Doses Expected from Secondary Infections Experienced During a Pandemic.
19. Genevieve Ho. 2008-2009: First project - Assessing a Thin-Film pH Biosensor. Second project – Abiotic Ammonia release from Effluent Organic Nitrogen Along Salinity Gradients.
20. Brian Harris. 2007: Assessing Oxidative Stress Response Function of Alginate-Immobilized Bacteria
21. Zachary Frye. 2006. Assessing the Feasibility of Nanostructure-Enhanced Nitrifying Microbial Fuel Cells
22. Brian Segal. 2006-2007. Evaluation of Ammonia Oxidizing Bacterial Biofilms.
23. Stephanie Harris. 2005-2006. Development of a Microfluidic Immunomagnetic Separation Biosensor for Detecting Bacterial Pathogens.
24. Beth McConnell. 2003-2004. The Affect of Physiology on Bacterial Responses to Oxidative Uncouplers
25. Suzanne Ayers. 2002. VIA Undergraduate Scholar: Evaluating the Impact of Toxic Shocks on Wastewater Treatment Performance
26. Felicia Glapion. 2001-2002. NEM-Induced Potassium Efflux in *Pseudomonas aeruginosa*
27. Monica Mace. 2000-2001. GE Scholarship: Denitrification of Aquaculture Wastewaters
28. Denise Gillam. 2000. Water Center Undergraduate Fellowship: The Impact of Potassium Efflux on Biofilm Treatment Systems Exposed to Electrophilic Toxins
29. Mike Gatz. 1999-2000. Using Two-Dimensional Gel Electrophoresis to Characterize Stress Proteins (Co-advised with Dr. Ann Stevens)
30. Bethany McRae. 1999-2000. NSF REU: Induction of the Glutathione-Gated Potassium Efflux System in *Sphingomonas capsulata* Exposed to HOCl
31. Jennifer Abrajano. 1999-2000. NSF REU: Assessing the Metabolism of Xenobiotic Compounds by Microaerobically-Grown Magnetotactic Bacteria
32. Scott Phipps. 1998-1999. Dewatering of Oily Wastewater Sludges. (Co-advised with Dr. John Novak)
33. Katya Bilyk. 1998-1999. NSF REU: Nitrite Inhibition and Toluene Degradation Under Denitrifying Conditions
34. Julie Wheeler. 1997-1998. NSF REU: Impact of Xenobiotic Stressors on Activated Sludge System Performance
35. Mary Rust. 1996-1997. Water Center Undergraduate Fellowship and NSF REU: Development and Isolation of Acetaldehyde Oxime and Methylene Ketoxime Degrading Cultures
36. Elliott Wheeler. 1995-1996. The Role of Various Cations in Settling and Dewatering of Biological Wastewater Treatment Sludges
37. Jon Treadway. 1995. Determination of Proteins in Activated Sludge Using Commercial Assays
38. Kevin Gilmore. Fall 1995: The Impact of Oximes on the Degree and Rate of Nitrification in Activated Sludge Cultures. Spring 1996: Evaluation of Chemical Oxidation as Pretreatment for Wastewaters Containing Aldicarb Oxime

Masters Students with Theses, Extensive Research Project, or Project Report

1. Julia Raneses. 2019 – current. Nutrient balances at the community scale.
2. Nick J. Lowe. 2018 – 2019. Toxicological monitoring of SWIFT effluent from Hampton Roads Sanitation District.

3. Avery Carlson. 2016 – 2018. Isolating and identifying comma-shaped nuisance bacteria in Traverse City's membrane bioreactor treatment system. (co-advised with Glen Daigger)
4. Enrique Rodriguez. 2016 – 2018. Plasma as a platform for advanced oxidation of urine to generate safe fertilizers (co-advised with Krista Wigginton)
5. Zixu Zhao. 2016-2017. Optimizing flushing to reduce microbial contamination of point-of-use filtered drinking water.
6. Andrea McFarland. 2015 – 2018. NSF Fellowship Recipient. Water quality benefits due to green infrastructure. (Co-advised with Larissa Larsen, Urban Planning). National Achievement: NSF Graduate Research Fellowship.
7. Samayyah Williams. 2014-2015. Modeling, understanding, and assessing technologies for the Detroit Water and Sewerage Department (DWSD) Wastewater Treatment Plant.
8. Nigel Beaton. 2014-2015. Low energy-demanding nitrogen removal from anaerobic effluents using biofilm technologies.
9. Anton Dapcic. 2013 – 2014. A performance evaluation of the WASAC™ energy recovery process.
10. Angelica Perez De La Rosa. 2010-2012. The impact of chlorinated phenols on the microbial ecology of point-of-use drinking water filters.
11. C. Davis Powell. 2011-2014. Evaluating the environmental impacts of urine source separation.
12. Chris Moline. 2010-2011. The fate of pharmaceuticals in microaerobic biological treatment processes.
13. Alexi Ernstoff. 2009 – 2011. The impact of culturing buffer on the ability of *Nitrosomonas europaea* to biotransform 17 α -ethinylestradiol. Current affiliation – Ph.D. student, Technical University of Denmark.
14. Sam Hardin. 2006-2011. The effectiveness of corrective action strategies on chemically stressed biological wastewater treatment systems. Current affiliation – environmental engineering consulting. National Achievement: WEFTEC Best Poster, 1st Place, 2008.
15. Romeo Capuno. 2005-2007. Modeling anaerobic ammonia oxidizing biofilms. Current affiliation – environmental engineering consulting.
16. Jason Beck. 2005-2007. Evaluating deammonification processes to achieve nitrogen removal from dairy waste. Current affiliation – environmental engineering consulting.
17. Jeremy Guest. 2005-2007. Laboratory testing of process controls for the mitigation of toxic shock events at enhanced biological phosphorus removal wastewater treatment plants. Current affiliation – Assistant Professor, University of Illinois.
18. Kaoru Ikuma. 2004-2007. The development of a bacterial biosensor designed to detect oxidative chemicals in water: correlating sensor relevance to mammalian brain cells and assessing bacterial cell immobilization strategies. Current affiliation – Assistant Professor, Iowa State University.
19. Mert Muftugil. 2004-2011. Enhanced Biological Phosphorus Removal of Dairy Manure using Sequencing Batch Reactors: Performance, Kinetics and Model Development. Current affiliation – environmental engineering consulting.
20. Anna Zaklikowski. 2004-2006. Evaluating the Effectiveness of Disinfection Strategies in the Inhibition and Inactivation of Ammonia Oxidizing Bacteria. Current affiliation – environmental engineering consulting.
21. Ka Man Chan. 2004-2005. Feasibility Study of In Situ Bioremediation of Bis(2-Chloroethyl) Ether and 1,2-Dichloroethane. Affiliation upon graduation – water utility.
22. Paul Sweetman. 2004-2005. Evaluating the Fate of Manure Nitrogen in Confined Dairy Waste Operations: A Full-Scale Waste Analysis and Start-up Protocol for an Anammox –Based Treatment Technology Applicable to Dairy Waste Management. Affiliation upon graduation – government position in Ireland.
23. Irina Chakraborty. (Degree from University of Helsinki, Finland) 2002-2005. Characterizing the Adaptation of a Subsurface Microbial Community using Biomolecular Tools (co-advised with Dr. Ann Stevens, Biology). Affiliation upon graduation – Ph.D. student in environmental microbiology.
24. Katharine Linares. 2002-2004. Development of a Biosensor for Detecting Toxic Electrophilic Chemicals in Waters. Current affiliation – environmental engineering consulting.

25. Jennifer Dauphinais. 2002-2003. Effects of Toxic Chemicals on Biological Wastewater Treatment Processes. Current affiliation – US government-based environmental services.
26. Rachelle Rhodes. 2002-2004. Subsurface Microbial Community Adaptation to Xenobiotic Influx. Current affiliation – environmental engineering consulting.
27. Susanna Leung. 2001-2003. Oxygen Transfer Efficiency in a Biological Aerated Filter (co-advised with John Little). Current affiliation – environmental engineering consulting.
28. Giacomo Sonzini. (Degree from Politecnico Di Milano, Italy) 2001. Investigation of K⁺ Efflux as Response to Intoxication for Nitrifying Activated Sludge. Affiliation upon graduating – financial analyst in Italy.
29. Kristina Yanosek (Biological Systems Engineering). 2000-2002. Enhanced Biological Phosphorus Removal from Dairy Manure to Meet Nitrogen and Phosphorus Crop Nutrient Requirements (co-advised with Dr. Mary Leigh Wolfe). Affiliation upon graduation – US Dept of Interior.
30. David Whichard. 2000-2001. Nitrogen Removal from Dairy Manure Wastewater Using Sequencing Batch Reactors. Affiliation upon graduating – environmental services in industry.
31. Kofi Asiedu. 2000-2001. Evaluating Biological Treatment Systems: I. Moving Bed Biofilm Reactor Versus Biological Aerated Filter. II. Sulfide-Induced Corrosion in Anaerobic Digester Gas Piping. Current affiliation – Engineer III, Prince William County, Virginia.
32. Melissa Fouratt (Biological Sciences). 1998-2001. Application of Molecular Techniques to the Characterization of a Nitrifying Bioaugmentation Culture (co-advised with Dr. Ann Stevens). Position upon graduation – pharmaceutical sales.
33. Scott Phipps. 1999-2001. Performance Evaluation and Yield Determination of a Full-Scale Biological Aerated Filter. Current affiliation – environmental engineering consulting.
34. Brian Brazil. 1999-2001. Evaluation of an Effluent Treatment Strategy to Control Nitrogen from a Recirculating Aquaculture Facility. Current affiliation – environmental engineering consulting.
35. Robert Wimmer. 1998-2001. Development of a Biosensor to Predict Activated Sludge Deflocculation and the Link Between Chlorination and Potassium Efflux. Current affiliation – environmental engineering consulting.
36. Arnaud Delahaye. 1997-1998. Distribution and Characteristics of Biomass in an Upflow Biological Aerated Filter. Affiliation upon graduation – Civil servant in France.
37. Kari Husovitz. 1997-1998. The Influence of Hydraulic Loading Rate on Nitrification Performance in a Two-Stage Biological Aerated Filter Pilot System. Current affiliation – environmental engineering consulting.
38. Kevin Gilmore. 1997-1999. Using Oligonucleotide Probes to Characterize Nitrification in a Two-Stage Pilot Plant Scale Biological Aerated Filter System. Current affiliation – Associate Professor, Bucknell University.
39. Jeff McGinnis. 1996-2003. Biodegradation and Dewatering of an Industrial Waste Oil. Current affiliation – environmental engineering consulting.
40. Jennifer Phillips. 1996-1997. Denitrification or Recirculating Aquaculture System Waters Using an Upflow Biofilter and a Fermented Substrate. Current affiliation – environmental engineering consulting.
41. Kristina Perri. 1996-1997. The Effectiveness of Multiple Redox Treatment Strategies on the Treatability of a High Strength Industrial Wastewater. Current affiliation – environmental engineering consulting.
42. James Drew Fettig. 1995-1998. A Study of the Patterns, Stoichiometry, and Kinetics of Microbial BTX Degradation Under Denitrifying Conditions by an Activated Sludge Consortium Receiving a Mixed Waste. Current affiliation – environmental engineering consulting.
43. Michelle Smith. 1995-1996. The Effect of Cation Addition on the Settling and Dewatering Properties of an Industrial Activated Sludge. Affiliation upon graduation – environmental engineering consulting in Canada.
44. Erika Lubkowitz (Bailey). 1995-1996. Biological Treatment Schemes for Preventing Oxime Inhibition of Nitrification. Current affiliation – environmental engineering consulting.

45. Patrick Brooks. 1995-1996. An Investigation of Temperature Effects on Denitrifying Bacterial Populations in a Biological Nutrient Removal System. Current affiliation – environmental engineering consulting.

Ph.D. Dissertations, Student Placement and Nationally Recognized Achievements by Mentees

1. Brittany Brown Hicks. 2019 – 2024 (anticipated). Project being defined. *National Achievement*: Ford Foundation Predoctoral Fellowship.
2. Alyssa Schubert. 2018 – 2023 (anticipated). Crowd-sourced water quality monitoring and community access to water monitoring.
3. Lucinda Li. 2018 – 2023 (anticipated). The impact of urine derived fertilizers on soil health (co-advised with Krista Wigginton).
4. Enrique Rodriguez. 2018 – 2022 (anticipated). Suspect screening, effect directed analysis and chemical risk of resource efficiency processes (co-advised with Krista Wigginton).
5. Hollie Adejumo. 2017 – 2022 (anticipated). The Toxicity and Transformation of Nitrogenated Disinfection Byproducts in the Human Gut (co-advised with Laura Rozek). *National Achievement*: NSF Graduate Research Fellowship.
6. Avery Carlson. 2018 – 2021 (anticipated). Project topic being developed (co-advised with Glen Daigger)
7. Brett Wagner. 2016 – 2021 (anticipated). Membrane aerated biofilm reactor technology (co-advised with Glen Daigger). *National Achievement*: NSF Graduate Research Fellowship.
8. Sara Troutman. 2015-2020. Integrated urban water infrastructure systems modeling at the green and grey infrastructure interface. (co-advised with Branko Kerkez). *Current Affiliation*: Xylem, Inc. *National Achievement*: NSF Graduate Research Fellowship.
9. Zerihun Bekele Alemayehu. 2015-2020. Use of sensor-mediated controls to achieve enhanced, low energy nitrogen removal during mainstream wastewater treatment. (Co-advised with Charles Bott, Hampton Roads Sanitation District). *Current Affiliation*: Engineer with BASF Corporation.
10. Chia-Chen Wu. 2013- 2018. Bacterial colonization of point-of-use (PoU) drinking water filters, selection of opportunistic pathogens and presence of antibiotic resistance genes. (Co-advised with Terese Olson). *Current Affiliation*: Postdoctoral Research Associate, Wayne State University
11. Heather Goetsch. 2014 –2018. Evaluating the benefits and risks of source separation as a nutrient management strategy. (Co-advised with Krista Wigginton). *Current Affiliation*: Department of Energy. *National Achievement*: AAAS Fellow with the Dept of Energy.
12. Jeseth Delgado-Vela. 2012 –2018. NSF Fellowship Recipient and Ford Foundation Fellow. Nitrogen and Sulfur Cycling During Wastewater Treatment. (Co-advised with Greg Dick). *Current Affiliation*: Assistant Professor, Howard University, Washington D.C. *National Achievements*: NSF Graduate Research Fellowship; Ford Foundation Fellowship; AEESP Conference Best Student Presentation.
13. Lauren Stadler. 2010 – 2015. Fate of trace contaminants in bacterial communities under low dissolved oxygen environments. *Current Affiliation*: Assistant Professor, Rice University, Houston. *National Achievement*: NSF Graduate Research Fellowship; 2016 CH2M/AEESP Best Dissertation Award; AEESP Conference Best Student Presentation.
14. Sherri M. Cook. 2008-2014. Sustainable Waste Management: Modeling and Decision Strategies for Unused Medications and Wastewater Solids (Co-advised with Steve Skerlos). *Current Affiliation*: Assistant Professor, University of Colorado, Boulder. *National Achievement*: NSF Graduate Research Fellowship
15. Jeremy S. Guest. 2007-2012. Sustainable design of wastewater treatment systems: Evaluations of operational flexibility and phototrophs for resource recovery. (Co-advised with Steve Skerlos). *Current Affiliation*: Associate Professor, University of Illinois, Urbana-Champaign. *National Achievements*: 2014 NSF CAREER Award Recipient; 2016 Paul L. Busch Award, Water Research Foundation.
16. Ameet J. Pinto. 2005-2009. Upset Events at Wastewater Treatment Plants: Implications for Mitigative Strategy Development and Bioreactor Microbial Ecology. *Current Affiliation*: Assistant Professor, Northeastern University, Boston. *National Achievements*: 2018 NSF CAREER Award Recipient; 2018 ISME/IWA Rising Star Bio Cluster Award; 2019 Paul L. Busch Award, Water Research Foundation .

17. Wendell Khunjar. 2004-2009. Elucidating Factors that Impact the Removal of Organic Microconstituents by Heterotrophic and Ammonia Oxidizing Bacteria. *Current Affiliation:* Hazen and Sawyer Consultants.
18. Martin Musabyimana. 2005-2008. Deammonification Process Kinetics and Inhibition Evaluation. *Current Affiliation:* East Bay Municipal Utility District, San Francisco, CA.
19. Kevin R. Gilmore. 2005-2008. Treatment of High-Strength Nitrogen Wastewater With a Hollow-Fiber Membrane-Aerated Biofilm Reactor: A Comprehensive Evaluation. *Current Affiliation:* Associate Professor, Bucknell University.
20. Jocelyn Fraga Muller. 2002-2006. The Role of Multidrug Efflux Pumps in the Stress Response of *Pseudomonas aeruginosa* to Organic Contamination. (Co-advised with Ann Stevens) *Current Affiliation:* Community College Instructor.
21. Ines D. S. Henriques. 2001-2006. The Response of Activated Sludge Cultures to Toxic Chemicals: Process Performance Effects, Role of Floc Structure, and Detection of Physiological Changes by Footprinting Methods. *Current Affiliation:* Business CEO, Portugal. *National Achievement:* WEFTEC Best Poster 1st Place, 2003.
22. Richard T. Kelly II. 2001-2005. Chemical Inhibition of Nitrification: Evaluating Methods to Detect and Characterize Inhibition and the Role of Selected Stress Responses Upon Exposure to Oxidative and Hydrophobic Toxins. *Current Affiliation:* Brown and Caldwell, Seattle, Washington.
23. R. David Holbrook. 2000-2003. The Role of Colloids in Defining the Fate of Endocrine System Disrupting Chemicals in Wastewater Treatment Systems (Co-advised with Dr. John Novak). *Current Affiliation:* Chief, Surface and Microanalysis Sciences Division, National Institute of Standards and Technology. *National Achievement:* 2010 PECASE (Presidential Early Career Award for Scientists and Engineers) recipient.
24. Charles B. Bott. 1997-2001. Elucidating the Role of Toxin-Induced Microbial Stress Responses in Biological Wastewater Treatment Process Upset. Affiliation upon graduation: environmental engineering consulting, then Assistant and Associate Professor at Virginia Military Institute. *Current Affiliation:* Director of Water Technology and Research, Hampton Roads Sanitation District, Virginia. *National Achievements:* Parsons Engineering Science/AEESP Doctoral Thesis Award; AEESP Fred Pohland Medal.
25. Guihua Ma. 1995-1999. The Kinetics, Biochemical Patterns, and Microbial Ecology in Multiredox Activated Sludge Systems Treating BTX Containing Wastewater. *Current Affiliation:* KCI, Inc., Baltimore, MD.

Post-Doctoral Research Associates

1. William Tarpeh, 2017-2018. Pharmaceutical transformation products through urine-derived fertilizer processing technologies. Co-advised with K. R. Wigginton. *Current Affiliation:* Assistant Professor of Chemical Engineering, Stanford University.
2. Rebecca Lahr, 2015-2016. Microbial fate in source-separated urine. Co-advised with K. R. Wigginton. *Prior Affiliation:* Assistant Professor, Michigan State University.
3. Dr. Kelly Martin. 2013 – 2015. Innovative, Low Energy Nitrogen Removal from Anaerobic Effluents. *Current Affiliation:* Black and Veatch, Inc.
4. Dr. Sudeshna Ghosh. 2008-2012. Chemical stressor-induced antibiotic resistance. *Current Affiliation:* Self Employed.
5. Dr. Kartik Chandran. 2004-2005. Chemical stress mechanisms in nitrifying bacteria. *Current Affiliation:* Associate Professor, Columbia University. *National Achievements:* NSF CAREER Award recipient; 2015 MacArthur Fellow; 2010 Paul L. Busch Award, Water Research Foundation.
6. Dr. Jane Duncan. 1998-1999. Heat shock protein expression in response to chemical stress in activated sludge. *Current Affiliation:* Research Scientist, Dept of Biochemistry, Virginia Tech.
7. Dr. Kathy Terlesky. 1996-1997. Heat shock protein expression in response to chemical stress in activated sludge. *Current Affiliation:* Vice President, Division Manager, SAIC, Inc., Charlottesville, Virginia.

PUBLICATIONS

Textbooks

1. Grady, C. P. L. Jr., G. T. Daigger, N. G. Love and C. Filipe. 2011. *Biological Wastewater Treatment*, 3rd Edition, Taylor and Francis Publishers.

Peer-Reviewed Journal Articles (undergraduate students; graduate students; post-doctoral research associates; *corresponding or senior author)

2. Wigginton, K. R., P. J. Arts, H. Clack, W. J. Fitzsimmons, M. Gamba, K. R. Harrison, W. LeBar, A. S. Luring, L. Li, W. W. Roberts, N. Rockey, J. Torreblanca, C. Young, L. G. Anderegg, A. M. Cohn, J. M. Doyle, C. M. Meisenhelder, L. Raskin, N. G. Love*, and K. S. Kaye*. 2021. Validation of N95 filtering facepiece respirator decontamination methods available at a large university hospital. *Open Forum Infectious Diseases*. Accepted. DOI: 10.1093/ofid/ofaa610.
3. Delgado-Vela, J., L. A. Bristow, H. K. Marchant, N. G. Love and G. J. Dick*. 2021. Sulfide alters microbial functional potential in a methane and nitrogen cycling biofilm reactor. *Environmental Microbiology*. Accepted.
4. Hilton*, S., G. Keoleian, G. T. Daigger, B. Zhou, N. G. Love. 2021. Life-cycle assessment of urine diversion and conversion to fertilizer products at the city scale. *Environmental Science & Technology*. 55:593-603.
5. Anderegg, L., J. Doyle, M. L. Gardel, A. Gupta, C. Hallas, Y. Lensky, N. G. Love, B. A. Lucas, E. Mazenc, C. Meisenhelder, A. Pillarisetti, D. Ranard, A. H. Squires, J. Vechakul, N. B. Vilas, S. Williams, D. Wilson, *Chen, T. and the N95DECON consortium. 2021. Heat and humidity for bioburden reduction of N95 filtering facepiece respirators. *Applied Biosafety*. In press. DOI:10.1089/apb.20.0053.
6. Rockey, N., P. J. Arts, L. Li, K. R. Harrison, K. Langenfeld, W. J. Fitzsimmons, A. S. Luring, N. G. Love, K. S. Kaye, L. Raskin, W. W. Roberts, B. Hegarty, K. R. Wigginton*. 2020. Humidity and deposition solution play a critical role in virus inactivation by heat treatment on N95 respirators. *mSphere*. 5(5):e00588-20. DOI:10.1128/mSphere.00588-20.
7. Admassu Abate, T., A. F. Desta, F. Assefa, N. G. Love*. 2020 The performance of an Ethiopian tannery wastewater treatment system based on chemical and microbiological water quality. *Water Environment Research*. In press. DOI:10.1002/wer.1364.
8. Segrè Cohen*, A., N. G. Love, J. Árvai. 2020. Communicating the risks and benefits of human urine-derived fertilizer. *Sustainability*. 12(23): 9973. DOI:10.3390/su12239973.
9. Troutman, S. C., N. G. Love and B. Kerkez*. 2020. Balancing water quality and flows in combined sewer systems using real-time control. *Environmental Science: Water Research & Technology*. 6:1357-1369. DOI: 10.1039/c9ew00882a.
10. Schreiber*, T., S. Opperman, K. Nace, A. N. Palmeyer, N. Love and R. Hardin. 2020. Leveraging integrative research for inclusive innovation: urine diversion and re-use in agriculture. *Elementa Science of the Anthropocene*. 8:12. doi.org/10.1525/elementa.408
11. Cohen, A. S.*, N. G. Love, K. K. Nace and J. Árvai. 2020. Consumers' acceptance of agricultural fertilizers derived from diverted and recycled human urine. *Environmental Science & Technology*. 54(8):5297-5305. DOI:10.1021/acs.est.0c00576.
12. Carlson, A. L., G. T. Daigger*, N. G. Love and E. Hart. 2020. Multi-year diagnosis of unpredictable fouling occurrences in a full-scale membrane bioreactor. *Water Science and Technology*. 82(3):524-536. DOI: 10.2166/wst.2020.354.
13. Bekele, Z. A., J. Delgado Vela, C. B. Bott, N. G. Love*. 2020. Sensor-mediated granular sludge reactor for nitrogen removal and reduced aeration demand using a dilute wastewater. *Water Environment Research*. 92(7):1006-1016. DOI: 10.1002/wer.1296. Honor: Editor selected for issue cover art
14. Goetsch, H. E., N. G. Love, K. R. Wigginton*. 2020. Fate of extracellular DNA in the production of fertilizers from source-separated urine. *Environmental Science & Technology*. 54 (3):1808-1815. DOI:10.1021/acs.est.9b04263.
15. Brown, M., F. Karimova, N. Love, K. Pagilla, C. Bott, Z. He, B. Liner and S. Merther. 2020. University-utility partnerships: Best practices for water innovation and collaboration. *Water Environment Research*. 92(3):314-319. DOI:10.1002/wer.1252.

16. Brouwer, A. F., M. C. Eisenberg, N. G. Love, J. N. S. Eisenberg*. 2019. Phenotypic variations in persistence and infectivity between and within environmentally transmitted pathogen populations impact population-level epidemic dynamics. *BMC Infectious Diseases*, 19(1):449-461. DOI:10.1186/s12879-019-4054-8.
17. Daigger*, G. T., S. Sharvelle, M. Arabi, N. G. Love. 2019. Progress and Promise Transitioning to One Water/Resource Recovery Integrated Urban Water Management Systems. *Journal of Environmental Engineering*. 145 (10), 10 pages. DOI: 10.1061/(ASCE)EE.1943-7870.0001552. Recipient of the ASCE Wesley W. Homer Award.
18. McFarland, A. R., L. Larsen*, K. Yeshitela, A. N. Engida and N. G. Love. 2019. Guide for using green infrastructure in urban environments for stormwater management. *Environmental Science: Water Research & Technology*, 5(4):643-659. DOI:10.1039/C8EW00498F.
19. Liang, S., S. Qu, Q. T. Zhao, X. L. Zhang, G. T. Daigger, J. P. Newell, S. A. Miller, J. X. Johnson, N. G. Love, L. X. Zhang, Z. F. Yang, M. Xu*. 2019. Quantifying the urban food-energy-water nexus: The case of the Detroit Metropolitan Area. *Environmental Science & Technology*, 53(2):779-788. DOI:10.1021/acs.est.8b06240.
20. Stadler, L. B. and N. G. Love*. 2019. Oxygen half-saturation constants for pharmaceuticals in activated sludge and microbial community activity under varied oxygen levels. *Environmental Science & Technology*. 53(4):1918-1927. DOI:10.1021/acs.est.8b06051.
21. Delgado Vela, J., G. J. Dick and N. G. Love*. 2018. Sulfide inhibition of nitrite oxidation in activated sludge depends on microbial community composition. *Water Research*. 138:241-249, DOI:10.1016/j.watres.2018.03.047.
22. Byrne, B. G., S. McColm, S. P. McElmurry, P. E. Kilgore, J. Soback, R. Sadler, N. G. Love, M. S. Swanson*. 2018. Prevalence of infection-competent serogroup 6 *Legionella pneumophila* within premise plumbing in Southeast Michigan. *mBio*, 9(1): DOI: 10.1128/mBio.00016-18.
23. Zahran, S., S. P. McElmurry, P. E. Kilgore, D. Mushinski, J. Press, N. G. Love, R. C. Sadler, M. S. Swanson*. 2018. Assessment of the Legionnaires' Disease Outbreak in Flint, Michigan. *Proceedings of the National Academy of Sciences USA*, 115(8):E1730-E1739. DOI: 10.1073/pnas.1718679115.
24. Goetsch, H. E., L. B. Zhao, M. Gnegy, M. J. Imperiale, N. G. Love, K. R. Wigginton*. 2018. The fate of urinary tract virus BK human polyomavirus in source-separated urine. *Applied and Environmental Microbiology*, 84(7): DOI:10.1128/AEM.02374-17.
25. Stadler, L. B.†, J. Delgado Vela†, S. Jain, G. J. Dick, and N. G. Love*. 2017. Elucidating the impact of microbial community biodiversity on pharmaceutical biotransformation during wastewater treatment. *Microbial Biotechnology*, 11(6):995-1007. DOI: 10.1111/1751-7915.12870. †These authors contributed equally to this work.
26. Mullen, R. A., K. R. Wigginton, A. Noe-Hays, K. Nace, N. G. Love, C. B. Bott and D. S. Aga*. 2017. Optimizing extraction and analysis of pharmaceuticals in human urine, struvite, food crops, soil, and lysimeter water by liquid chromatography-tandem mass spectrometry. *Analytical Methods*. 9(41):5952-5962.
27. Troutman, S. C., N. Schambach, N. G. Love and B. Kerkez*. 2017. A self-calibrating framework for the sensor-driven and dynamical modeling of combined sewer systems. *Water Research*, 126:88-100. DOI: 10.1016/j.watres.2017.08.065
28. Wu, C.-C., S. Ghosh, K. J. Martin, A. J. Pinto, V. J. Deneff, T. M. Olson, N. G. Love*. 2017. The microbial colonization of activated carbon block point-of-use (PoU) filters with and without chlorinated phenol disinfection byproducts. *Environmental Science: Water Research & Technology*, 3(5):830-843. DOI: 10.1039/C7EW00134G.
29. Cook, S.M., S. J. Skerlos, L. M. Raskin and N. G. Love*. 2017. A sustainability assessment tool for anaerobic digestion. *Water Research*. 112:19-28.
30. Daigger*, G. T., J. Sandino, S. Murthy, N. G. Love. 2017. Transforming environmental engineering and science education, research and practice. *Environmental Engineering Science*, 34(1):42-50.
31. Lahr, R.H., H. E. Goetsch, S. J. Haig, A. Noe-Hays, N. G. Love, D. S. Aga, C. B. Bott, B. Foxman, J. Jimenez, T. Luo, K. Nace, K. Ramadugu and K. R. Wigginton*. 2016. Urine bacterial community

- convergence through fertilizer production: storage, pasteurization, and struvite precipitation. *Environmental Science and Technology*, 50(21):11619-11626.
32. Lester, Y., D. Aga, N. G. Love, R. Singh, J. Morrissey and K. Linden*. 2016. Integrative advanced oxidation and biofiltration for treating pharmaceuticals in wastewater. *Water Environment Research*. 88(11):1985-1993. DOI:10.2175/106143016X14504669767454
 33. Stadler, L. B. and N. G. Love*. 2016. Impact of microbial physiology and microbial community structure on pharmaceutical fate driven by dissolved oxygen concentration in nitrifying bioreactors. *Water Research*, 104:189-199. DOI: 10.1016/j.watres.2016.08.001
 34. Keen, O., N. G. Love, D. S. Aga and K. Linden*. 2016. Biodegradability of iopromide products after UV/H₂O₂ advanced oxidation. *Chemosphere*, 144:989-994.
 35. Delgado Vela, J., L. B. Stadler, K. J. Martin, L. Raskin, C. B. Bott and N. G. Love*. 2015. Prospects for biological nitrogen removal from anaerobic effluents during mainstream wastewater treatment. *Environmental Science and Technology Letters*, 2(9):234-244. DOI: 10.1021/acs.estlett.5b00191.
 36. Muller, J. F., S. Ghosh, K. Ikuma, A. M. Stevens and N. G. Love*. 2015. Chlorinated phenol-induced physiological antibiotic resistance in *Pseudomonas aeruginosa*. *FEMS Microbiology Letters*, 362(21):fnv172, DOI: 10.1093/femsle/fnv172.
 37. Jimenez*, J., C. Bott, N. Love, and J. Bratby. 2015. Source separation of urine as an alternative solution to nutrient management in biological nutrient removal treatment plants. *Water Environment Research*. 87(12):2120-2129. DOI:10.2175/106143015X14212658613884.
 38. Singh, R., Y. Lester, K. Linden, N. G. Love, G. Ekin Atilla-Gokcumen, D. S. Aga*. 2015. Application of metabolite profiling tools and time-of flight mass spectrometry in the identification of transformation products of iopromide and iopamidol during advanced oxidation. *Environmental Science and Technology*, 49(5):2983-2990.
 39. Stadler, L. B., L. Su, C. J. Moline, A. S. Ernstoff, D. S. Aga, and N. G. Love*. 2015. Effect of redox conditions on pharmaceutical loss during biological wastewater treatment using sequencing batch reactors. *Journal of Hazardous Materials*, 282:106-115. DOI/10.1016/j.jhazmat.2014.08.002
 40. Smith†, A. L., L. B. Stadler†, L. Cao, N. G. Love, L. Raskin, and S. J. Skerlos*. 2014. Navigating wastewater energy recovery strategies: A life cycle comparison of anaerobic membrane bioreactor and conventional treatment systems with anaerobic digestion. *Environmental Science and Technology*, 48:5972-5981. DOI/10.1021/es5006169. †These authors contributed equally to this work.
 41. Syed, A. K., S. Ghosh, N. G. Love, B. R. Boles*, 2014. Triclosan promotes *Staphylococcus aureus* nasal colonization, *mBio*, 5(2):e01015-13. doi:10.1128/mBio.01015-13.
 42. Orfield, Nolan D., G. A. Keoleian* and N. G. Love. 2014. A GIS-based national assessment of algal bio-oil production potential through flue gas and wastewater co-utilization. *Biomass and Bioenergy*, 63:76-85.
 43. Clouzot, L., J.-M. Choubert, F. Cloutier, R. Goel, N. G. Love, H. Melcer, C. Ort, D. Patureau, B. G. Plósz, M. Pomiès and P. A. Vanrolleghem*. 2013. Perspectives on modeling micropollutants in wastewater treatment plants. *Water Science and Technology*. 68(2):448-461. DOI/10.2166/wst.2013.272.
 44. Guest, J., M.C.M vanLoosdrecht, S. J. Skerlos and N.G. Love*. 2013. A lumped pathway metabolic model of organic carbon accumulation and mobilization by the alga *Chlamydomonas reinhardtii*. *Environmental Science and Technology*, 47:3258-3267. DOI/10.1021/es304980y.
 45. Gilmore*, K.R., A. Terada, B. F. Smets, S. Lackner, J. L. Garland, and N. G. Love. 2013. Autotrophic nitrogen removal in a membrane-aerated biofilm reactor under continuous aeration: A demonstration. *Environmental Engineering and Science*, 30(1):38-45. DOI: 10.1089/ees.2012.0222.
 46. Smith, A. L., L. B. Stadler, N. G. Love, S. Skerlos, and L. Raskin*. 2012. Perspectives on anaerobic membrane bioreactor treatment of domestic wastewater: A critical review. *Bioresource Technology*, 122 (Special Issue, SI):149-159. DOI: 10.1016/j.biortech.2012.04.055
 47. Pinto, A.J. and N. G. Love*. 2012. Bioreactor function under perturbation scenarios is affected by interactions between bacteria and protozoa. *Environmental Science and Technology*, 46(14):7558-7566. DOI: 10.1021/es301220f

48. Keen, O., N. G. Love, and K. G. Linden*. 2012. The role of effluent nitrate in contaminant oxidation during UV disinfection. *Water Research*, **46**(16):5224-5234. DOI:10.1016/j.watres.2012.06.052
49. Keen, O. S., S. Baik, K. G. Linden*, D. S. Aga and N. G. Love. 2012. Enhanced biodegradation of carbamazepine after UV/H₂O₂ advanced oxidation. *Environmental Science and Technology*, **46**:6222-6227. DOI: 10.1021/es300897u.
50. Cook, S. M., B. J. VanDuinen, N. G. Love and S. J. Skerlos*. 2012. Life cycle comparison of environmental emissions from three disposal options for unused pharmaceuticals. *Environmental Science and Technology*, **46** (10):5535-5541. DOI: 10.1021/es203987b
51. R. Mesfioui, N. G. Love, D. A. Bronk, M. R. Mulholland, P. G. Hatcher*. 2012. Reactivity and chemical characterization of effluent organic nitrogen from wastewater treatment plants determined by Fourier transform ion cyclotron resonance mass spectrometry. *Water Research*, **46**(3):622-634. DOI:10.1016/j.watres.2011.11.022
52. Lamp†, J. L., J. S. Guest†, S. Naha, K. A. Radavich, N. G. Love*, M. W. Ellis* and I. K. Puri. 2011. Flame synthesis of carbon nanostructures on stainless steel anodes for use in microbial fuel cells. *Journal of Power Sources*, **196**(14):5829-5834. † These authors contributed equally to this work.
53. Khunjar, W. O., S. A. Mackintosh, J. Skotnicka-Pitak, S. Baik, D. S. Aga, N. G. Love*. 2011. Elucidating the relative roles of ammonia oxidizing and heterotrophic bacteria during the biotransformation of 17 α -ethinylestradiol and trimethoprim. *Environmental Science and Technology*, **45**(8):3605-3612. DOI:10.1021/es1037035.
54. Ghosh, S., C. M. Cremers, U. Jakob, and N. G. Love*. 2011. Chlorinated phenols control the expression of the multi-drug resistance efflux pump MexAB-OprM in *Pseudomonas aeruginosa* by activating NaIC. *Molecular Microbiology*, **79**(6):1547-1556. DOI:10.1111/j.1365-2958.2011.07544.x.
55. Filippino*, K. C., M. R. Mulholland, P. W. Bernhardt, G. E. Boneillo, R. E. Morse, M. Semcheski, H. Marshall, N. G. Love, Q. Roberts and D. A. Bronk. 2011. Bioavailability of effluent-derived organic nitrogen along an estuarine salinity gradient. *Estuaries and Coasts*. **34**:269-280.
56. Zhao, Z., K. F. Knowlton*, N. G. Love, and J. A. Ogejo. 2011. Estrogen removal from dairy manure by pilot-scale treatment reactors. *Transactions of the American Society of Agricultural and Biological Engineers (ASABE)*. **53**(4):1295-1301.
57. Khunjar, W. O. and N. G. Love*. 2011. Sorption of carbamazepine, 17 α -ethinylestradiol, iopromide and trimethoprim to biomass involves interactions with exocellular polymeric substances. *Chemosphere*, **82**:917-922, doi:10.1016/j.chemosphere.2010.10.046.
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Reviews, Discussions, Editorials and General Technical News Pieces

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Refereed Conference Presentations (presenter in bold)

145. Hicks, B., C. C. Wu, M. B. Perri, Z. Zhao, M. Zervos, S. P. McElmurry, N. G. Love. Isolating and characterizing *Stenotrophomonas maltophilia* from drinking water point-of-use filters in an aged distribution system. Poster presentation. International Water Association Microbial Ecology of Water Engineering (MEWE) Biannual Conference, Hiroshima, Japan, November 17-20, 2019.
146. Love, N. G. The International Water Association Specialists Group on Environmental Engineering Education: History and Background. Podium Presentation for pre-conference workshop. International Water Association Microbial Ecology of Water Engineering (MEWE) Biannual Conference, Hiroshima, Japan, November 17-20, 2019
147. Love, N.G., A. Noe-Hays, D. Aga, J. Arvai, A. Cohen, G. Daigger, A. Davis, R. Dickman, R. Hardin, S. Hilton, G. Keoleian, L. Li, N. Lowe, R. Mullen, K. Nace, E. Rodriguez, T. Schreiber, S. Skerlos, W. Tarpeh, K. Wigginton. Achieving Nutrient Resource Efficiency through Urine Separation, Processing and Reuse: A Comprehensive Study. Podium Presentation. 3rd IWA Resource Recovery Conference, Venice, Italy, September 2019.
148. Carma Lewis*, Elizabeth Burtch*, Nick J. Lowe, Audrey Rose Zarb, Alyssa Schubert, Janée Rankin*, Lydia Starrs*, Rochelle Kelly*, Richard Kelley*, Alyssa Schubert, Enrique Rodriguez, Lucinda Li, Audrey Pallmeyer, Shawn P. McElmurry, Nancy G. Love (*community collaborators from Flint, Ms. Lewis and Ms. Schubert gave the talk). Community-driven Train-the-Trainers program for point-of-use

- filter maintenance in communities affected by drinking water lead contamination. Podium Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
149. **Tarpeh, W., Y. Du, C. Carpenter, D. Helbling, N. G. Love, K. R. Wigginton.** Suspect screening of pharmaceuticals during urine treatment processes. Podium Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 150. **Goetsch, H., L. Li, N. G. Love and K. R. Wigginton.** Understanding microbial agents in source-separated urine for the production of urine-derived fertilizers. Podium Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 151. **A. Noe-Hays, A. Davis, N. J. Lowe, J. Eraci, Y. J. Ooi, A. Sabido, K. Nace, E. Rodriguez, K. Wigginton, N. Love.** Onsite production of concentrated urine-derived fertilizer in building-scale systems using remote process monitoring and control. Poster Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 152. **Kerkez, B., N. G. Love, R. L. McCaffery, M. Bartos, J. Montgomery, E. TerBeek.** A First Year College Course on Smart Water Systems. Poster Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 153. **Cohen, A. S., N. G. Love, J. Árvai.** Consumers' preferences and perceptions regarding the use of urine-derived fertilizer for domestic agriculture. Poster Presentation. Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 154. **Pallmeyer, A. and N. G. Love.** Achieving Resource Efficiency with Resource Recovery: Introduction the NSF INFEWS Project on Urine-Derived Fertilizers. Podium Presentation. 91st Annual Water Environment Federation Technical Exhibition and Conference, New Orleans, LA, October 1-3, 2018.
 155. **Bekele, Z., J. Delgado Vela, C. B. Bott, N. G. Love.** Sensor-mediated Control for Aerobic Granular Sludge Process Treating Mainstream Anaerobic Effluent. Podium presentation. 91st Annual Water Environment Federation Technical Exhibition and Conference, New Orleans, LA, October 1-3, 2018.
 156. **Troutman, S.C., N. G. Love and B. Kerkez.** Evaluating market-based algorithms for system-level TSS control. 13th International Conference on Hydroinformatics. Palermo, Italy, July 1-6, 2018.
 157. **Troutman, S. C., N. G. Love and B. Kerkez.** Market-based real-time control of TSS across large sewer systems. World Environmental & Water Resources Congress, EWRI. Minneapolis, MN, USA. June 3-7, 2018.
 158. **Tarpeh, W., D. S. Aga, N. G. Love, K. Wigginton.** Assessing Risks from Pharmaceuticals and Transformation Products in Urine-Derived Fertilizers. Podium presentation. American Chemical Society Annual Meeting. New Orleans, LA. March 2018.
 159. **Troutman, S.C., N. G. Love and B. Kerkez.** Evaluating market-based algorithms for system-level TSS control. Podium presentation. 13th International Conference on Hydroinformatics. Palermo, Italy, July 1-6, 2018.
 160. **Wagner, B., G. T. Daigger, N. G. Love.** Partial nitrification/anammox membrane aerated biofilm reactor for nitrogen removal from aerobic secondary effluent. Podium presentation. Water Environment Federation Nutrient Removal and Recovery Conference, Raleigh North Carolina, June 18-21, 2018. Presentation with associated conference paper.
 161. **Love, N. G., A. Noe-Hays, K. R. Wigginton, L. Macpherson, D. S. Aga, C. B. Bott, G. T. Daigger, A. P. Davis, J. Eisenberg, A. Gagnon, Z. Getaneh, H. Goetsch, P. Gooding, R. Hardin, S. Hilton, J. Jimenez, G. Keoleian, N. J. Lowe, W. Mui, R. Mullen, K. Nace, A. Pallmeyer, N. Patel, D. Raye-Leonard, E. E. Rodriguez, T. Schreiber, A. Sinanaj, W. Tarpeh, R. Wombacher, B. Zhou.** Advancing Nutrient Recovery through Urine-Derived Fertilizers (UDF) in the United States. Podium presentation. Water

- Environment Federation Nutrient Removal and Recovery Conference, Raleigh North Carolina, June 18-21, 2018. Presentation with associated conference paper.
162. **Troutman, S. C., N. G. Love and B. Kerkez.** Market-based real-time control of TSS across large sewer systems. Podium presentation. World Environmental & Water Resources Congress, EWRI. Minneapolis, MN, USA. June 3-7, 2018.
 163. **Rodriguez, E., W. Tarpeh, H. Clack, N. G. Love, K. Wigginton.** 2018. Degradation of pharmaceuticals in synthetic urine treated with plasma. Poster Presentation. American Chemical Society Meeting, New Orleans, LA, March 18-22, 2018.
 164. **Zerihun A. Bekele, Imre Takacs, Charles B. Bott, and Nancy G. Love.** Harnessing biofilm models to advance nitrogen removal from mainstream anaerobic wastewater treatment processes. Poster presentation. WRRMod2018 conference, Quebec, Canada, March 2018.
 165. **Tarpeh, W., D. S. Aga, N. G. Love, K. Wigginton.** Assessing Risks from Pharmaceuticals and Transformation Products in Urine-Derived Fertilizers. Podium presentation. American Chemical Society Annual Meeting. New Orleans, LA. March 2018.
 166. **Carlson, A., N. G. Love, G. T. Daigger and E. Hart.** Trouble-shooting long-term biofouling in full-scale membrane bioreactor. International Water Association Young Water Professionals Conference, South Africa. December 10-14, 2017.
 167. **Goetsch, H.E., Love, N.G., Imperiale, M.J., Wigginton, K.** Fate of Human BK polyomavirus through urine diverted for fertilizer. 2nd International Resource Recovery Conference: New York City, NY, USA August 5-9, 2017.
 168. **Delgado Vela, J., Dick, Gregory J., Love, N.G.** The Impact of Sulfide on Nitrification: Implications for Nitrification Processes. Fifth International Conference on Nitrification and Related Processes (ICoN5): Early Career and Graduate Student Workshop. Vienna, Austria, July 23-27, 2017.
 169. **Zerihun A. Bekele, Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love.** Using sensor-mediated control and modeling to develop an aerobic granular sludge technology for low energy nitrogen. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017.
 170. **Troutman, S. C., N. G. Love, B. Kerkez.** 2017. Controlling a Sewer Network as an Extension of the Wastewater Treatment Plant. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
 171. **Chia-Chen Wu, Katie Stroh, Shawn P. McElmurry, Terese M. Olson, and Nancy G. Love.** Understanding the transmission of planktonic and sessile bacteria across point-of-use (PoU) filters. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
 172. **Delgado Vela, J., Dick, Gregory J., Love, N.G.** Managing Healthy Activated Sludge Communities: Understanding the Impact of Sulfide on Nitrogen Removal. Podium presentation. AEESP Biannual Conference, Ann Arbor, Michigan, June 20-22, 2017
 173. **Bekele, Z. A., Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love.** Aerobic granular sludge process optimization and modeling for mainstream anaerobically treated wastewater. Poster presented at IWA Biofilm Reactors Conference, Dublin. Ireland, May 2017
 174. **Troutman, S. C., N. G. Love, B. Kerkez.** 2017. Understanding Combined Sewer Flow Dynamics through Data-Driven Modeling. World Environmental & Water Resources Congress, EWRI. Sacramento, CA, USA. May 21-25 2017.
 175. **Zerihun A. Bekele, Jeseth Delgado Vela, Kelly J. Martin, Charles B. Bott, and Nancy G. Love.** Aerobic granular sludge process optimization and modeling for mainstream anaerobically treated wastewater. Poster presented at IWA Biofilm Reactors Conference, Dublin. Ireland, May 2017
 176. **Goetsch, H., M. Imperiale, N. G. Love, K. R. Wigginton.** 2017. Fate of human polyomavirus in urine diverted for fertilizer use. American Chemical Society 253rd National Meeting, San Francisco, CA, April 2017.

177. **Goetsch, H., M. Imperiale, N. G. Love, K. R. Wigginton.** Refining liquid gold: Fate of human polyomavirus in urine diverted for fertilizer use. Oral presentation. Borchardt conference, Ann Arbor, Michigan, February 2017.
178. **Troutman, S., N. G. Love, B. Kerkez.** Use of Real-Time Sensor Data in City-Scale Water Modeling. Poster presentation presented at two different conferences: Borchardt conference, Ann Arbor, Michigan, February 2017; and CUAHSI Biennial Symposium
179. **Zhao, Z., M. P. Runho, C.-C. Wu, A. Zarb, T. M. Olson, S. P. McElmurry, and Nancy G. Love.** 2017 Effect of flushing on microbiological quality of water effluent from point-of-use filters. Poster presentation, Borchardt conference, Ann Arbor, Michigan, February 2017.
180. **Alemayehu, Z., C. B. Bott and N. G. Love.** 2017. Achieving nitrogen removal from mainstream anaerobically treated wastewater using aerobic granular sludge with low aeration rate. Poster presentation, Borchardt conference, Ann Arbor, Michigan, February 2017.
181. **Delgado Vela, J., Z. A. Bekele, A. McFarland, A. Arcelay, K. J. Martin, C. B. Bott, G. J. Dick and N. G. Love.** 2016. The membrane aerated biofilm reactor for nitrogen removal from mainstream anaerobic processes. 89th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, Sept 25-28, 2016.
182. **Desta, A. F., N. G. Love, K. R. Wigginton, H. Goetsch and R. Lahr.** 2016. Keynote lecture: Metagenomic analysis of biological contaminants in source-separated urine undergoing sanitization.: A way towards sustainable development in low-income countries. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
183. **Stadler, L. and N. G. Love.** 2016. Associations between microbial community activity, pharmaceutical biotransformation rates, and DO concentration in wastewater treatment. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
184. **Goetsch, H., M. Imperiale, N. G. Love and K. R. Wigginton.** 2016. Refining liquid gold: Fate of human polyomavirus in urine diverted for fertilizer use. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
185. **Wu, C.-C., T. M. Olson and N. G. Love.** 2016. Prevalence of Antibiotic Resistance Genes (ARGs) in Point-of-Use (PoU) Drinking Water Filters. Microbial Ecology and Biofilm Specialists Conference, Copenhagen, Denmark, Sept 3-5, 2016.
186. **Troutman, S., N. G. Love, B. Kerkez.** 2016. Predicting combined sewer flow through use of real-time, city-scale sensor data. Oral presentation, World Environmental and Water Resources Congress, ASCE, West Palm Beach, Florida, May 2016.
187. **Goetsch, H., R. Mullen, R. Lahr, A. Noe-Hays, D. Aga, C. Bott, B. Foxman, J. Jimenez, N. Love, T. Luo, K. Nace, K. Ramadugu, K. Wigginton.** 2015. Fate of pharmaceutical and biological contaminants through the preparation and application of urine derived fertilizers. International Water Association First Resource Recovery Conference. Ghent, Belgium, Aug 30-Sept 2, 2015.
188. **Delgado Vela, J., Martin, K. J., McFarland, A., Beaton, N., Stadler, L.B., Skerlos, S.J., Raskin, L., Bott, C. B., Love, N.G.** Removing nitrogen from effluents of anaerobic wastewater treatment processes: Understanding control and operation through biofilm modeling. 250th American Chemical Society National Meeting and Exhibition. Boston, MA, August 16-20, 2015. (podium).
189. **Delgado Vela, J., K. J. Martin, A. R. McFarland, N. L. Beaton, L. B. Stadler, C. B. Bott, L. Raskin, S. J. Skerlos, N. G. Love, A. Salvesson, T. Rauch-Williams.** 2015. Advancing energy neutral wastewater treatment: removing nitrogen and dissolved methane from dilute anaerobic effluents. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).
190. **Stadler, L. B., J. Delgado Vela and N. G. Love.** 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. AEESP Biannual Conference, Yale University, June 14-16 (podium presentation), *winner of best student paper award*.
191. **Goetsch, H., R., Lahr, R. Mullen, A. Noe-Hays, D. Aga, C. B. Bott, J. Jimenez, N. G. Love, K. Nace and K. Wigginton.** 2015. Fate of organic contaminants in urine-derived fertilizers. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).

192. **Lahr, R., H., Goetsch, A. Noe-Hays, D. Aga, C. B. Bott, B. Foxman, J. Jimenez, N. G. Love, T. Luo, R. Mullen, K. Nace, K. Ramadugu and K. Wigginton.** 2015. Microbial communities in urine separated for nutrient recovery. AEESP Biannual Conference, Yale University, June 14-16 (poster presentation).
193. **Stadler, L. B., J. Delgado Vela and N. G. Love.** 2015. Elucidating the relationship between wastewater treatment plant microbial diversity and pharmaceutical fate. American Society for Microbiology, New Orleans, LA, May 30-June 2 (Poster Presentation).
194. **Goetsch, H., R. Lahr, A. Desta, N. G. Love, C. Bott, A. Gagnon, K. Nace, A. Noe-Hays, D. S. Aga, R. Mullen, J. Jimenez, K. Wigginton,** 2015. Fate of pharmaceutical and biological contaminants through the preparation and application of urine-derived fertilizers. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.
195. **Stadler, L., J. Delgado Vela and N. G. Love.** 2015. Impact of low dissolved oxygen and microbial community on pharmaceutical biotransformations during wastewater treatment. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.
196. **Delgado-Vela, J., K. J. Martin, N. Beaton, A. McFarland, L. B. Stadler, C. B. Bott, S. J. Skerlos, L. Raskin, N. G. Love.** 2015. Nutrient removal from mainstream anaerobic processes using a membrane aerated biofilm reactor and a granular sludge sequencing batch reactor. 88th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, Sept 27-30, 2015.
197. **Delgado Vela J., Martin, K. J., Beaton, N., McFarland, A., Stadler, L., Bott, C. B., Raskin, L., Skerlos, S.J., and Love, N.G.** 2014. Nitrogen Removal Downstream of an Anaerobic Membrane Bioreactor for Domestic Wastewater Treatment. IWA Global Challenges: Sustainable Wastewater Treatment and Resource Recovery. Kathmandu, Nepal, October 26-30.
198. **Delgado Vela, J., Martin, K.J., Stadler, L.B., Bott, C. Skerlos, S.J., Raskin, L., Love, N.G.,** 2014. Nutrient Removal from Mainstream Anaerobic Effluents: Linking Biofilm Modeling to Experimental Design. 87th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 28-October 1. (poster presentation)
199. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. Iowa City, IA, August 19 – 22, 2014.
200. **Love, N. G.** 2014. Achieving resilience and sustainability in the global urban water sector – a role for environmental chemistry. Special Seminar Series: Women in Environmental Chemistry and Engineering, Abstract 312-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10-14. (podium presentation)
201. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. Abstract 415-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
202. **Wu, C.-C., K. J. Martin, A. Perez De La Rosa, G. Ryskamp, N. G. Love and T. M. Olson.** 2014. Effect of disinfection by-products on antibiotic resistance in the bacterial communities of point-of-use (PoU) drinking water filters. Abstract 473-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
203. **Lester, Y., N. G. Love, D. S. Aga, R. Singh and K. G. Linden.** 2014. Demonstrating advanced oxidation/biofiltration to remove emerging contaminants from wastewater: A pilot study. Abstract 130-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
204. **Aga, D. S., K. G. Linden, N. G. Love, R. Singh, Y. Lester, O. S. Keen and S. Baik.** 2014. Identification of degradation products of carbamazepine and iopromide after UV/H₂O₂ advanced oxidation and

- biodegradation. 283-ENVR, 248th American Chemical Society National Meeting. San Francisco, CA, August 10 – 14, 2014. (podium presentation)
205. **Stadler, L. B., Smith, A. L., Jain, A. K., Martin, K. J., Delgado Vela, J., Puente, P., Cao, L., Frenette, S., Bott, C. B., Rauch-Williams, T., Shimada, T., Salveson, A., Love, N. G., Raskin, L., and Skerlos, S. J.** 2014. Integrating Life Cycle Assessment and Experimental Research: Evaluating Anaerobic Membrane Bioreactors in Domestic Wastewater Treatment for Energy Recovery. Borchardt Conference. Ann Arbor, MI, February 25 – 26, 2014. (podium presentation)
 206. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2014. Understanding the impact of low dissolved oxygen treatment on nitrifier community characteristics and micropollutant fate. 4th International Conference on Occurrence, Fate, Effects, and Analysis of Emerging Contaminants in the Environment. Iowa City, IA, August 19 – 22. (podium presentation)
 207. **Stadler, L. B., Smith, A. L., Cao, L., Love, N. G., Raskin, L., and Skerlos, S. J.** 2013. Life Cycle Comparison of Emerging and Established Wastewater Energy Recovery Systems. In Mainstream Anaerobic Treatment Systems for Energy Neutral Wastewater Management Workshop at the 86th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, October 5 – 9.
 208. **Stadler, L.B., A.L. Smith, L. Cao, N.G. Love, L. Raskin, and S.J. Skerlos,** 2013. Energy Recovery from Wastewater: Life Cycle Comparison of Carbon Removal Technologies Upstream of Autotrophic Nitrogen Removal. *WEF/IWA Nutrient Removal and Recovery 2013: Trends in Resource Recovery and Use*, July 28-31, Vancouver, British Columbia, Canada.
 209. **Smith, A.L., T. Shimada, and L. Raskin,** 2013. Syntrophic interactions in full-scale two-phase anaerobic digesters determined by pyrosequencing. *5th International Conference on Microbial Ecology and Water Engineering Conference*, July 7-10, Ann Arbor, Michigan.
 210. **Stadler, L.B., A.L. Smith, L. Cao, N.G. Love, L. Raskin, and S.J. Skerlos,** 2013. Life cycle comparison of emerging and established wastewater energy recovery systems. Poster presentation. *2013 AEESP Education & Research Conference*, July 14-16, Denver, Colorado.
 211. **Delgado-Vela, J., Stadler, L.B., and Love, N. G.** 2013. Elucidating Biotransformation of Pharmaceuticals by Methanotrophic Bacteria. Association of Environmental Engineering & Science Professors 50th Anniversary Conference. Golden, CO, July 14 – 16.
 212. **Moline, C. J., Stadler, L. B., Su, L., Ernstoff, A. S., Dapcic, A. D., Vela, J. D., Aga, D., and Love, N. G.** 2012. Pharmaceutical Fate Under Varying Redox Treatment Environments. Proceedings of the 85th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 29 - October 3.
 213. **Smith, A. L., Stadler, L. B., Cao, L., Love, N. G., Raskin, L., and Skerlos, S. J.** 2012. Performance and environmental impacts of anaerobic membrane bioreactor for low-strength wastewater treatment, Proceedings of the 85th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), New Orleans, LA, September 29-October 3.
 214. **Jimenez, J., C. B. Bott, N. G. Love and J. Bratby.** 2012. Source separation of urine as an alternative solution to nutrient management in wastewater treatment plants: a model-based analysis. Water Environment Federation Technical Exhibition and Conference. New Orleans, LA. Sept 30-Oct 3, 2012. Podium presentation.
 215. **Love, N.G.** 2012. Challenges in predicting micropollutant fate in biological processes. WWTMod2012 workshop on modelling micropollutant fate in biological processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012. Podium presentation
 216. **Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N.** Impact of Copper Stress on Nitrification Performance and the Ammonia Oxidizer Community Structure in Activated Sludge. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.

217. **Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin.** 2011. Psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *2011 AEESP Education & Research Conference*, Tampa, Florida, July 10-12, 2011.
218. **Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin,** 2012. Effects of changes in temperature and hydraulic retention time on performance and environmental impacts of anaerobic membrane bioreactors for domestic wastewater treatment. *Leading-Edge Conference on Water and Wastewater Technologies*, June 3-7, Brisbane, Australia.
219. **Smith, A.L., Z. Li, H. Dorer, N.G. Love, S. Skerlos, and L. Raskin,** 2011. Energy recovery from domestic wastewater using anaerobic membrane bioreactors. *2011 Borchardt Conference*, February 23-24, Ann Arbor, Michigan.
220. **Guest, J. S., N. G. Love, S. Snowling, C. B. Bott, G. T. Daigger and S. J. Skerlos.** Quantitative sustainable design of wastewater treatment plants. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.
221. **Keen, O., S. Baik, K. Linden, D. Aga and N. G. Love.** 2011. Degradation of carbamazepine during UV/H₂O₂ treatment of wastewater. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.
222. **Smith, A., N. G. Love, S. J. Skerlos, and L. Raskin.** Role of membrane biofilm in psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.
223. **Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N.** Impact of Copper Stress on Ammonia Oxidizer Activity and Community Structure in Nitrifying Activated Sludge. Water Environment Federation Technical Exhibition and Conference. Los Angeles, CA. October 15-19, 2011. Podium presentation.
224. **Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin,** 2011. Analysis of microbial communities in an anaerobic membrane bioreactor for domestic wastewater treatment at psychrophilic conditions. *2011 Biogas Microbiology Conference*, September 14-16, Leipzig, Germany.
225. **Colby, A., Khunjar, W., Pinto, A., Ghosh, S., Raskin, L., Love, N.** 2011. Effect of Copper Stress on Ammonia Oxidizer Community Structure and Nitrification Performance in a Nitrifying Activated Sludge Wastewater Treatment Process. *2nd International Conference on Nitrification*. Nijmegen, the Netherlands. July 1-7.
226. **Guest, J.S., S.J. Skerlos, N.G. Love.** 2011. Quantitative sustainable design of wastewater treatment plants. *Engineering Sustainability 2011*, Pittsburgh, PA, March 10-12, 2011, Podium presentation.
227. **Cook, S. M., B.J. VanDuinen, S.J. Skerlos, N.G. Love.** Life cycle comparison of environmental impacts from alternative pharmaceutical disposal methods. *Engineering Sustainability 2011 Conference*, Pittsburgh, PA, April 11, 2011
228. **Smith, A.L., N.G. Love, S.J. Skerlos, and L. Raskin.** 2010. Anaerobic membrane bioreactors for sustainable domestic wastewater treatment at psychrophilic temperatures. *Proceedings of the 12th World Congress on Anaerobic Digestion*, Guadalajara, Mexico, November 1-4, 2010
229. **Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin.** 2011. Role of membrane biofilm in psychrophilic anaerobic membrane bioreactor for domestic wastewater treatment. *Proceedings of the 84th Annual Water Environment Federation Technical Exhibition and Conference*, Los Angeles, California, October 15-19, 2011.
230. **Pinto, A.J. and N.G. Love.** Impact of chemical perturbation on trophic interactions and its implications for ecosystem function in an engineered environment. *13th International Symposium on Microbial Ecology 2010*, Seattle, Washington. August 22-27, 2010
231. **Love, N.G., W. O. Khunjar, S. Mackintosh, S. Baik, and D. Aga.** The Relative Roles of Ammonia Oxidizing and Heterotrophic Activated Sludge Bacteria in Biotransforming 17 α -Ethinylestradiol and Trimethoprim. Podium presentation, AEESP Special Session. *83rd Water Environment Federation Technical Exposition and Conference 2010*, New Orleans, LA, October 3-6, 2010.

232. **Smith, A.L., N.G. Love, S. Skerlos, and L. Raskin, 2010.** Anaerobic membrane bioreactors for sustainable domestic wastewater treatment at psychrophilic temperatures. *12th World Congress on Anaerobic Digestion*, October 31 - November 4, Guadalajara, Mexico. International Water Association.
233. **N. G. Love, W. O. Khunjar, J. Skotnicka-Pitak, S. Mackintosh, S. Baik, D. S. Aga, T. Yi, and W. F. Harper Jr. 2010.** Elucidating the role of ammonia oxidizing bacteria versus heterotrophic bacteria during the biotransformation of 17 α -ethinylestradiol and trimethoprim. Podium presentation. International Water Association World Water Congress and Exposition, Montreal, Quebec, Canada, Sept 20-24, 2010.
234. **W.O. Khunjar, J. Skotnicka-Pitak, S. Mackintosh, S. Baik, N. G. Love, D.S. Aga, W.F. Harper Jr. 2010.** Elucidating factors that influence the biotransformation of 17 α -ethinylestradiol and trimethoprim. Poster presentation. International Water Association Leading Edge Technology Conference, Phoenix, AZ, June 1-4, 2010.
235. **Guest, J. S., S. J. Skerlos and N. G. Love. 2010.** An optimization methodology for elucidating locality-specific sustainability trade-offs in wastewater treatment plant process selection. Poster presentation. International Water Association Leading Edge Technology Conference, Phoenix, AZ, June 1-4, 2010.
236. **Pinto, A.J., Hardin, S.C., Love, N.G., Fairey, A., Earle, J., Washington, P., Iler, P., Doane-Weideman, T., and Lagrange, R.** Remedial Intervention Strategies for Wastewater Treatment Plant Exposed to Heavy Metal Stress: Laboratory and Pilot Scale Evaluations. Podium presentation. *Proceedings of the 82nd Water Environment Federation Technical Exposition and Conference 2009*, Orlando, Florida, October 10-14, 2009.
237. **Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Baik, S., Love, N.G., Aga, D.S., Harper Jr., W.F.** The Impact of Physiological State and Residual Organic Carbon on the Biotransformation of 17 α -Ethinylestradiol and Trimethoprim by Heterotrophic Bacteria. Podium Presentation. *82nd Annual Water Environment Federation Technical Exposition and Conference*, Orlando, Florida, October 10-14, 2009.
238. **Guest, J. S.; Cook, S. M.; Skerlos, S. J.; Love, N. G. 2009.** A methodology to assess the environmental impacts of upgrading wastewater infrastructure: A case study to evaluate energy recovery from black water. Podium presentation. *Proceedings of the 82nd Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC)*, Orlando, Florida, October 10-14, 2009.
239. **Thomas, W.A., Bott, C.B., Regmi, P., Schafran, G., Pinto, A., Love, N.G., McQuarrie, J., Rutherford, B., Baulmer, R., Waltrip, D.** Evaluation of Nitrification Kinetics for a 2.0 MGD IFAS demonstration project. Podium presentation. *Proceedings of the 82nd Water Environment Federation Technical Exposition and Conference 2009*, Orlando, Florida, October 10-14, 2009.
240. **Cook, S. M., J. S. Guest, S. J. Skerlos, N. G. Love. 2009.** Environmental characteristics of different energy recovery systems from the management of sewage sludge and food waste. Podium presentation, *IWA Sustainable Management & Technologies of Sludges Conference*, Harbin, China, August 8-11, 2009.
241. **Pinto, A.J., N. G. Love, A. Fairey, J. Earle, P. Washington, P. Iler, T. Doane-Weideman, and R. Lagrange. 2009.** Integration of online sensors with corrective action strategies to detect, monitor, and mitigate toxic shock events at nutrient removal wastewater treatment plants. *Water Environment Federation: Nutrient Removal Conference*. Washington, DC. June 28-July 1, 2009.
242. **Pinto, A.J. and N. G. Love.** Post-stress recovery of a complex ammonia oxidizing bacterial community following heavy metal cadmium stress. Short podium presentation and poster presentation. *International Conference on Nitrification 1*. Louisville, KY, July 5-9, 2009.
243. **Guest, J. S.; Skerlos, S. J.; Daigger, G. T.; Corbett, J. R. E.; Love, N. G. 2009.** The use of qualitative system dynamics to identify sustainability characteristics of decentralised wastewater management alternatives. *Proceedings of 6th IWA Leading Edge Conference on Water and Wastewater Technologies*, Singapore, June 22-25, 2009. *Invited for consideration in Water Science and Technology*.
244. **Pinto, A.J., S. C. Hardin, and N. G. Love. 2009.** Cadmium-induced short-term structural and functional changes in ammonia oxidizing community in conventional laboratory and pilot scale activated sludge

- systems. Podium presentation. *Proceedings of the ASPD5 (Activated Sludge Population Dynamics) Specialised Conference: Microbial Population Dynamics in Biological Wastewater Treatment*. International Water Association. Aalborg, Denmark, May 24-27, 2009.
245. Gilmore, K. R., B. F. Smets, A. Terada, S. Lackner, J. L. Garland, N. G. Love. 2009. Microbial community analysis in an autotrophic hollow-fiber membrane-aerated biofilm reactor (HFMBR) treating a high-strength nitrogen wastewater. Podium presentation. *Proceedings of the ASPD5 (Activated Sludge Population Dynamics) Specialised Conference: Microbial Population Dynamics in Biological Wastewater Treatment*. International Water Association. Aalborg, Denmark, May 24-27, 2009, pp 146-148.
 246. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. Elucidating the Role of Ammonia Oxidizing Bacteria versus Heterotrophic Bacteria in the biotransformation of 17 α -ethinylestradiol. Poster presentation. *Proceedings of the Activated Sludge Population Dynamics 5 (ASPD5): Microbial Population Dynamics in Biological Wastewater Treatment*. International Water Association. Aalborg, Denmark, May 24-27, 2009.
 247. Loh, K. J., J. S. Guest, G. Ho, J. P. Lynch, and N. G. Love. 2009. Layer-by-layer carbon nanotube bio-templates for in situ monitoring of the metabolic activity of nitrifying bacteria. *SPIE Smart Structures and Materials*, San Diego, CA.
 248. Ghosh, S. and N. G. Love. MexAB-OprM efflux pump mediated changes in antibiotic susceptibilities of *Pseudomonas aeruginosa*. ASM General Meeting, Philadelphia. May 19, 2009.
 249. Love, N. G., D. Bronk, E. Canuel, M. Poteat, Q. Roberts, K. C. Filippino, P. Hatcher, R. Mesfioui, M. M. Mulholland, and G. Ho. The importance of effluent organic nitrogen fate and its contribution to N management in N-limited regions. Podium presentation. *Association of Environmental Engineering and Science Professors Conference*, July 26-29, 2009, Iowa City, IA.
 250. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. 2009. Elucidating the role of ammonia oxidizing bacteria versus heterotrophic bacteria in the biotransformation of 17 α -ethinylestradiol. Poster Presentation. *Association of Environmental Engineering and Science Professors Conference*, July 26-29, 2009, Iowa City, IA.
 251. Pinto, A.J., J. S. Guest, R. Roots, N. G. Love, and S. Skerlos. 2009. A project-based active learning framework to introduce freshman engineering students to sustainable waste management and waste-to-energy technologies. Podium presentation. *Association of Environmental Engineering and Science Professors 2009 Conference*. Iowa City, IA, July 26-29, 2009.
 252. Pinto, A.J. and N. G. Love. 2009. Structural and Functional Response of the Ammonia Oxidizing Bacterial Community to Acute Cadmium Stress in Laboratory and Pilot Scale Activated Sludge Systems. Poster presentation. *Association of Environmental Engineering and Science Professors 2009 Conference*. Iowa City, IA, July 26-29, 2009.
 253. Khunjar, W. O., Skotnicka-Pitak, J., Celiz, M.D., Mackintosh, S., Love, N.G., Aga, D.S., Harper Jr., W.F. 2009. Elucidating the Role of Ammonia Oxidizing Bacteria versus Heterotrophic Bacteria in the biotransformation of 17 α -ethinylestradiol. Poster presentation. *Micropol and Ecobazard 2009, 6th IWA/GRA Specialized Conference on Assessment and Control of Micropollutants/Hazardous Substances in Water* June 2009, San Francisco, CA.
 254. Cook, S. M., J. S. Guest, M. G. Christianson, N. G. Love, S. J. Skerlos. 2009. Energy Recovery from Wastewater: Evaluation of Resource Management Alternatives for Appropriate and Environmentally Sustainable Energy Production. Podium presentation, *Engineering Sustainability 2009 Conference*, Pittsburgh, PA, April 21, 2009.
 255. H.A. Tucker, K.F. Knowlton, and N.G. Love. 2009. Fecal and urinary estrogens in dairy heifers during the estrous cycle. *J. Dairy Sci.* 92 (Suppl. 1).
 256. Hardin, S., A. Pinto, N. G. Love, and A. Shaw. 2008. Impact of Contaminant-Specific Corrective Action Strategies on Wastewater Treatment Plant Performance and Recovery. Poster presentation. *Water*

Environment Federation 81st Annual Conference and Exposition, Chicago, IL, October 19-22, 2008. 1st Place - Best Poster Award.

257. **Khunjar, W. O., Skotnicka-Pitak, J., Yi, T., Love, N.G., Aga, D.S., Harper Jr., W.F.** 2008. Biotransformation of pharmaceutical, personal care products during nitrification – the role of nitrifiers vs. heterotrophs. Podium presentation. *ASCE World Environmental & Water Resources Congress 2008*. Honolulu, HI.
258. **Aga, D., N. G. Love, W. Harper, W. O. Khunjar, J. Skotnicka-Pitak, T. Yi.** 2008. Biotransformation of pharmaceuticals by nitrifying and heterotrophic cultures: Investigation of degradation kinetics and metabolite identification. Keynote Address - International Water Association Leading Edge Technology Conference, Zurich, Switzerland, June 1-4, 2008.
259. **Shaw, A., deBarbadillo, C., Pinto, A. J., Guest, J. S., Love, N. G., Fairey, A. W., Iler, P. L., Earle, J. K., Shellenbarger, D., and Barker D.** 2008. Dynamic whole plant modeling to investigate mitigation strategies for toxic shocks. *1st IWA/WEF Wastewater Treatment Modeling Seminar*. Mont-Sainte-Anne, Quebec, Canada. June-1-3, 2008.
260. **Love, N. G. and Skerlos, S. J.** 2008. Global Sustainable Water Systems – Acknowledging Wastewater as a Resource. *Graham Environmental Sustainability Institute Water, Health + Environment Workshop*, University of Michigan, March 26-27, 2008.
261. **Musabyimana, M., N. G. Love, C. B. Bott and S. Murthy.** 2008. Evaluation of nitrite inhibition and toxicity in the deammonification process. Podium presentation alternate. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
262. **O'Shaughnessy, M, M. Musabyimana, J. Sizemore, S. Murthy, B. Wett, I. Takacs, D. Houweling, P. Sanjines, N. Love, K. Pallansch,** 2008. Operations and process control of the deammonification process as a sidestream option for nutrient removal. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
263. **Khunjar, W. O., J. Skotnicka-Pitak, N. G. Love, D. Aga, W. F. Harper Jr.** 2008. Elucidating the role of nitrifiers versus heterotrophic bacteria in the biotransformation of 17 α -ethinylestradiol during wastewater treatment. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
264. **Gilmore, K. R., N. G. Love, B. F. Smets, A. Terada, J. Garland.** 2008. Nitrifier and anammox population dynamics in an autotrophic nitrogen removal membrane biofilm reactor. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
265. **Pinto, A., S. Hardin and N. G. Love.** 2008. Structural and functional responses of the ammonia oxidizing community in activated sludge exposed to cadmium stress. Podium presentation. *Proceedings of the Water Environment Federation 81st Annual Conference and Exposition*, Chicago, IL, October 19-22, 2008.
266. **Gilmore, K. R., B. F. Smets, J. L. Garland, A. Terada, and N. G. Love.** 2008. Controlling gaseous nitrogen oxide emissions and nitrogen removal performance in hollow fiber membrane aerated biofilm reactors. *Proceedings of the WEF Membrane Technology 2008 Conference*, Atlanta, Georgia, January 27-30, 2008.
267. **DeBusk, J. A., J. Arogo Ogejo, N. G. Love, K. F. Knowlton.** 2007. Adjusting nitrogen to phosphorus ratios in liquid dairy manure through nitrification and chemical phosphorus removal to match crop fertilizer requirements. Podium presentation. *Proceedings of the American Society of Agricultural and Biological Engineers (ASABE)*, Paper No. 074048, June 17-20, 2007.
268. **Guest, J. S., A. J. Pinto, N. G. Love and A. Shaw.** 2007. Corrective action strategies for enhanced biological phosphorus removal WWTPs during short-term and prolonged toxic shock events. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.

269. **Khunjar, W. O., C. Klein, T. Yi, N. G. Love, D. Aga, and W. F. Harper Jr.** 2007. Cometabolism of pharmaceutical, personal care products (PPCPs) by the ammonia oxidizing bacterium *Nitrosomonas europaea*. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
270. **Ikuma, K., I. D. S. Henriques, B. J. Love and N. G. Love.** 2007. Immobilization of *Pseudomonas aeruginosa* in alginate microbeads for use in a biosensor designed to detect oxidative toxins. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
271. **Gilmore, K. R., N. G. Love and B. F. Smets.** 2007. Oxygen mass transfer in a flow-through hollow fiber membrane aeration reactor. Poster presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
272. **Beck, J. L., K. R. Gilmore, N. G. Love, K. F. Knowlton and J. Arogo Ogejo.** 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Podium presentation. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
273. **Pinto, A.J., Guest, J.S., Love, N.G., and Shaw, A.** 2007. Elucidating the importance of contaminant specific corrective action strategies for wastewater treatment plants during toxic shocks. *Proceedings of the Water Environment Federation 80th Annual Conference and Exposition (WEFTEC)*, San Diego, CA, October 14-17, 2007.
274. **Khunjar, W. O., Klein, C., Skotnicka-Pitak, J., Yi, T., Love, N. G., Aga, D. Harper, W. F. Jr.** 2007. Biotransformation of pharmaceuticals and personal care products (PPCPs) during nitrification: the role of ammonia oxidizing bacteria versus heterotrophic bacteria. WEF Specialty Conference - Compounds of Emerging Concern: What's on the Horizon? Providence, Rhode Island, July 29-30, 2007, Podium presentation.
275. **Fang, Y., Zhao, Z., Love, N. G., Knowlton, K. F., Novak, J. T.** 2007. Detecting endocrine disrupting compounds in various waste matrices using a bioassay. WEF Specialty Conference - Compounds of Emerging Concern: What's on the Horizon? Providence, Rhode Island, July 29-30, 2007, Podium presentation.
276. **Ikuma, K. Fraga Muller, J., Stevens, A. M., Hagedorn III, C., Love, N. G.** 2007. Evaluating the extent of pollution-induced antibiotic resistance in environmental bacterial strains. *American Water Resources Association Summer Specialty Conference – Emerging Contaminants of Concern in the Environment: Issues, Investigations and Solutions*. Vail, Colorado, June 25-27, 2007, Podium presentation.
277. **Khunjar, W. O., Klein, C., Yi, T., Henriques, I. D. S., Love, N. G., Aga, D. S., Harper Jr., W. F.** 2007. The relative roles of ammonia oxidizing bacteria versus heterotrophic bacteria in biotransforming 17 α -ethinylestradiol under low growth rate conditions. *American Water Resources Association Summer Specialty Conference – Emerging Contaminants of Concern in the Environment: Issues, Investigations and Solutions*. Vail, Colorado, June 25-27, 2007, Podium presentation.
278. **Zhao, Z., K. F. Knowlton, N. G. Love and Y. Fang.** 2007. Advanced treatment to reduce the estrogen content of dairy manure. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007. Podium presentation.
279. **Zhao, Z., Knowlton, K.F., Love, N. G., and Fang, Y.** 2007. Dairy manure estrogens with advanced treatments. *Journal of Dairy Science*, 90:332, Supplement 1.
280. **Pinto, A. J., Love, N. G.** 2007. Elucidating the importance of contaminant specific corrective action strategies for wastewater treatment plants during toxic shocks. Poster presentation. *Water Environment Federation 80th Annual Conference and Exposition*, San Diego, CA, Oct 14-17, 2007.
281. **Beck, J. L., N. G. Love, K. F. Knowlton and J. Arogo Ogejo.** 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Poster presentation. *Proceedings of the American Society of Agricultural and Biological Engineers (ASABE)*, June 17-20, 2007.

282. **Khunjar, W. O., Baik, S., Celiz, D., Yi, T., Henriques, I.D.S., Love, N. G., Aga, D. S., Harper Jr., W. F.** 2007. Evaluation of the fate of environmentally relevant micropollutants. Podium presentation. *American Society of Civil Engineers World Environmental & Water Resources Congress*, Tampa Bay, FL., May 15-19, 2007.
283. **Aga, D. S., Harper Jr., W. F., Love, N. G. Khunjar, W. O., Klein, C., Celiz, D. M., Baik, S., Yi, T.** 2007. Investigating the connection between nitrification and the removal of pharmaceuticals using engineered bioreactors. Micropol and Ecohazard 2007, Frankfurt, Germany. Podium Presentation.
284. **Pinto, A. J., Guest, J. S., Love, N. G., Shaw, A., Fairey, A. W., Iler, P. L., Earle, J. K., Shellenbarger, D., Barker, D.** 2007. Process control at nutrient removal wastewater treatment plants during toxic shock events. State of the Art Nutrient Removal Design, Water Environment Federation and International Water Association, March 3-7, 2007, Baltimore, Maryland.
285. **Klein, C., Aga, D. S., Love, N. G., Khunjar, W. O., and Harper Jr., W. F.** 2007. Characterizing the degradation products of 17 alpha-ethinylestradiol in activated sludge systems by LC/MS. 58th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy. Chicago, IL, Feb 25-March 2, 2007. Podium presentation.
286. **Harper Jr. W.F., Love, N.G., Aga, D.S., Yi, T., Khunjar, W.O., Klein, C., O'Connor, S.** Evaluating the link between nitrification and the removal of 17 α -ethinylestradiol. Poster presentation. *Nutrient Removal 2007: The State of the Art. Water Environment Federation Specialty Conference*, Baltimore, MD.
287. **Ikuma, K., Rzigalinski, B. A. and Love, N. G.** 2007. Predicting the public health impact of oxidative toxins using a bacterial glutathione-gated potassium efflux stress response biosensor. 233rd American Chemical Society National Meeting, Chicago, Illinois, March 25-29, 2007.
288. **Chandran, K. and Love, N. G.** 2006. Cd(II) mediated inhibition of *Nitrosomonas europaea* is linked to oxidative stress and is impacted by physiological state and growth mode. *Proceedings of the Water Environment Federation 79th Annual Conference and Exposition*, Dallas, TX Oct 22-25, 2006. (Number 1 Abstract out of 120+ submissions for Research Symposium)
289. **Kelly, R. T. Jr. and Love, N. G.** 2006. The role of glutathione mediated stress response mechanisms in nitrifying bacteria. *Proceedings of the Water Environment Federation 79th Annual Conference and Exposition*, Dallas, TX Oct 22-25, 2006.
290. **Capuno, R. E., Love, N. G., and Smets, B. F.** 2006. Mathematical modeling of start-up scenarios for nitrogen removal via a nitrification:anaerobic ammonia oxidation-coupled biofilm in a hollow fiber membrane bioreactor. *International Water Association Biofilm Systems VI*, Amsterdam, The Netherlands, September 24-27, 2006.
291. **Gilmore, K. R., R. E. Capuno, Jr., N. G. Love, and B. F. Smets.** 2006. Anaerobic stabilization of early planetary base ersatz wastewater formulation. Society of Automotive Engineers (SAE) Technical Paper Series 2006-01-2255. 36th International Conference on Environmental Systems, SAE, Norfolk, VA.
292. **Zaklikowski, A., Love, N. G., Vikesland, P. and Chandran, K.** 2006. The effect of breakpoint chlorination practices on the activity, viability and recovery of nitrifying bacteria in chloraminated water. *American Water Works Association Annual Meeting, Universities Forum*. June 12, 2006.
293. **Rushing, J. C., Vikesland, P., Love, N. G., Mutuc, M., Chan, K. M., Casselberry, R. and Cichy, P.** 2006. Evaluating in situ chemical and biological treatment approaches for two chlorinated aliphatic ethers: BCEE and BCEM. *The Fifth International Conference on Remediation of Chlorinated and Recalcitrant Compounds*. Battelle, May 22-25, 2006, Monterey, California.
294. **Xu, Y., Lei, G., Linares, K. A., Fleming, D. L., Meehan, K., Lu, G. Q., Love, N. G. and Love, B. J.** 2005. Maximizing dye fluorescence via incorporation of metallic nanoparticles in solution. *SPIE (The International Society for Optical Engineering)*, 5591:175-183.
295. **Henriques, I. D. S., Aga, D., Mendes, P. and Love, N. G.** 2005. Metabolic footprinting: A new approach to identify changes in activated sludge physiology upon exposure to toxic compounds.

- Proceedings of the Water Environment Federation 78th Annual Conference and Exposition*, Washington DC, Oct 31-Nov 2, 2005, 12 pages.
296. Muftugil, M., Knowlton, K. F., and Love, N. G. 2005. Using enhanced biological phosphorus removal to minimize nutrient delivery from dairy farms to receiving waters. Poster presentation at Water Environment Federation 78th Annual Conference and Exposition, Washington DC, Oct 31-Nov 2, 2005.
 297. Henriques, I. D. S., Aga, D., Mendes, P. and Love, N. G. 2005. Metabolic footprinting: A new approach to identify changes in activated sludge physiology upon exposure to toxic compounds. *Proceedings of the 4th International Water Association Activated Sludge Population Dynamics Specialist Conference*, Gold Coast, Australia, 12 pages.
 298. Henriques, I. D. S., Aga, D., Mendes, P., and Love, N. G. 2005. Metabolic Footprinting: A New Approach to identify Changes in Activated Sludge Physiology upon Exposure to Toxic Compounds. Association of Environmental Engineering and Science Professors Conference, July 24-26, Clarkson University, Potsdam, New York.
 299. Fraga Muller, J., Craig, J., Stevens, A. M., and Love, N. G. 2005. Using Whole Genome Arrays to Investigate Functional Response to Contaminant Stress: the Response of *Pseudomonas aeruginosa* to Pentachlorophenol. Association of Environmental Engineering and Science Professors Conference, July 24-26, Clarkson University, Potsdam, New York.
 300. Fraga Muller, J., Craig, J., Stevens, A. M., and Love, N. G. 2005. The Stress Response of *Pseudomonas aeruginosa* to Pentachlorophenol. *Abstracts of the 105th General Meeting of the American Society for Microbiology*, Atlanta Georgia.
 301. Kelly II, R. T. and Love, N. G. 2004. Investigating the role of oxidative stress mechanisms in chemically-inhibited nitrifiers. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 22 pages.
 302. Kelly II, R. T. and Love, N. G. 2004. A critical comparison of methods used to determine nitrification inhibition. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 15 pages.
 303. Henriques, I. D. S., Stevens, A. M. and Love, N. G. 2004. Is biomass concentration a factor determining the sensitivity of activated sludge to toxic shocks? *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 22 pages.
 304. Linares, K., Fleming, D., Xu, Y., Love, N. G., Love, B. J. and Meehan, K. 2004. Evaluating strategies for integrating bacterial cells into a biosensor designed to detect electrophilic toxins. *Proceedings of the Water Environment Federation 77th Annual Conference and Exposition*, New Orleans, LA, October 2004, 17 pages.
 305. Henriques, I. D. S., Kelly II, R. T. and Love, N. G. 2004. Deflocculation Effects Due to Chemical Perturbations in Sequencing Batch Reactors. 3rd International Symposium on Sequencing Batch Reactors, International Water Association, Brisbane, Australia.
 306. Leung, S.M., Little, J. C., Holst, T., and Love, N. G. 2003. Oxygen transfer and consumption in a biological aerated filter. *Proceedings of the Water Environment Federation 76th Annual Conference and Exposition*, Los Angeles, CA October 2003.
 307. Dauphinais, J. L. and Love, N. G. 2003. Determination of toxic inhibition potential from industrial dischargers to a POTW using a respirometric assay. *Proceedings of the Water Environment Federation 76th Annual Conference and Exposition*, Los Angeles, CA October 2003.
 308. Yanosek, K.A., Wolfe, M. L. and Love, N. G. 2003. Assessment of enhanced biological phosphorus removal for dairy manure treatment. In the *Animal, Agricultural and Food Processing Wastes*, *Proceedings of the Ninth International Symposium*, 11-14 October 2003 (Raleigh, North Carolina, USA), ed. Robert Burns. ASAE Pub #701P1203. pp. 212-220.
 309. Henriques, I. D. S. and Love, N. G. 2003. The role of floc morphology and composition on susceptibility of biomass to shock loads of chemical toxins. Poster presentation at Water Environment

- Federation 76th Annual Conference and Exposition, Los Angeles, CA October 2003. 1st Place - Best Poster Award.
310. **Holbrook, R.D., Novak, J. T. and Love, N. G.** 2002. The role of particulate and colloidal material in the fate and transport of endocrine disrupting compounds. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 311. **Leung, S., Holst, T., Love, N. G. and Little, J. C.** 2002. A fundamental investigation of oxygen utilization in a biological aerated filter. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 312. **Kelly, R. T. II, Henriques, I. D. S., Dauphinais, J. and Love, N. G.** 2002. Evaluation of source-effect relationships for activated sludge response to shock loads of disruptive chemical toxins. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 313. **Wimmer, R. F. and Love, N. G.** 2002. Activated sludge deflocculation in response to chlorine addition: the potassium connection. *Proceedings of the Water Environment Federation 75th Annual Conference and Exposition*, Chicago, IL October 2002.
 314. **Love, N. G., Wimmer, R. F., Barker, S., Travis, J., Love, B. J., and Locascio, L.** 2002. Developing sensing technologies to enable proactive operations in biological wastewater treatment. Association of Environmental Engineering and Science Professors/American Academy of Environmental Engineers Conference, August 10-14, University of Toronto, Toronto, Canada, p. 24.
 315. **Love, N. G.** 2002. Invited keynote speaker. Status and Potential for Biosensors in Wastewater Treatment. European Union COST meeting, *Biosensors in Wastewater*, Milan Italy.
 316. **Holbrook, R. D., Novak, J. T. and Love, N. G.** 2001. Process considerations for the reduction of endocrine disruption potential in wastewater effluents. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.
 317. **Wimmer, R. F., Waddell, E., Barker, S. L. R., Suggs, A., Locascio, L., Love, B. J. and Love, N. G.** 2001. Development of an upset early warning device to predict deflocculation events. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.
 318. **Phipps, S. D. and Love, N. G.** 2001. Quantifying observed biomass yield in a biological aerated filter. *Proceedings of the Water Environment Federation 74th Annual Conference and Exposition*, Atlanta, GA, October 2001.
 319. **Love, N. G. and Bott, C. B.** 2001. Evaluating the Role of Microbial Stress Response Mechanisms in Causing Biological Treatment System Upset. *Microorganisms in Activated Sludge and Biofilm Processes*, Rome, Italy [see associated *Water Science and Technology* publication above].
 320. **Love, N. G., C. B. Bott, K. C. Terlesky.** 2001. Proteomic approach to assessing environmental stress in complex microbial communities." Oral presentation at the 221st American Chemical Society National Meeting, San Diego, CA. April 2, 2001.
 321. **Bott, C. B., Abrajano, J. and Love, N. G.** 2000. A physiological mechanism for activated sludge deflocculation caused by shock loads of toxic chemicals. *Proceedings of the Water Environment Federation 73rd Annual Conference and Exposition*, Anaheim, CA, October 14-18, 2000.
 322. **Bott, C. B., Duncan, A. J. and Love, N. G.** 2000. Stress Protein Expression in Domestic Activated Sludge in Response to Xenobiotic Shock Loading. First World Congress of the International Water Association, Paris France [see associated *Water Science and Technology* publication above].
 323. **Ma, G. and Love, N. G.** 2000. Creating Anoxic and Microaerobic Conditions in Sequencing Batch Reactors Treating Volatile BTX Compounds. 2nd International Symposium on Sequencing Batch Reactor Technologies, Narbonne, France [see associated *Water Science and Technology* publication above].
 324. **Fouratt, M., Smithers, C., Love, N. G., and Stevens, A. M.** 2000. The characterization of nitrifying bioaugmentation cultures. Poster presentation. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.

325. **Fouratt, M., Smithers, C., Love, N. G., and Stevens, A. M.** 2000. The characterization of nitrifying bioaugmentation cultures. Poster presentation. *Abstracts of the 100th General Meeting of the American Society for Microbiology*, Los Angeles, CA. p. 491.
326. **Delahaye, A., Gilmore, K. R., Husovitz, K. J., Love, N. G., Holst, T., Novak, J. T.** 1999. Distribution and characteristics of biomass in pilot-scale upflow biological aerated filters treating domestic wastewater. Podium presentation. *Proceedings of the International Association on Water Quality Conference on Biofilm Systems*, New York, NY, October 17-21.
327. **Love, N. G., Gilmore, K. G., Husovitz, K. J., Delahaye, A. P., Novak, J. T. and Little, J. C.** 1999. Performance of a Biological Aerated Filter System Treating Domestic Wastewater for BOD, Ammonia and TSS Removal: Pilot Plant Results. Podium presentation. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.
328. **Husovitz, K. L., Gilmore, K. R., Delahaye, A. P., Love, N. G., and Little, J. C.** 1999. The influence of upflow liquid velocity on nitrification in a biological aerated filter. Podium presentation. *Proceedings of the Water Environment Federation 72nd Annual Conference and Exposition*, New Orleans, LA, October 9-13, 1999.
329. **Love, N. G., Bott, C. B., Duncan, A. J., Terlesky, K. C.** 1999. Using the molecular stress response as an indicator of system stress in complex environmental systems. Selected Podium Presentation, Association of Environmental Engineering and Science Professors Research Frontiers Conference, Pennsylvania State University, University Park, PA.
330. **Bott, C. B., Terlesky, K. C., Duncan, A. Jane, Wheeler, J., and Love, N. G.** 1998. The immunochemical detection of stress proteins as an indicator of toxic discharges to activated sludge systems. Podium presentation. *Proceedings of the Water Environment Federation 71st Annual Conference and Exposition*, Orlando, FL, October 3-7, 1998. 1:203-214.
331. **Phillips, J. B., and Love, N. G.** 1998. Biological denitrification using upflow biofiltration in recirculating aquaculture systems: pilot-scale experience and implications for full-scale. Podium presentation. *Proceedings of the Second International Conference on Successes and Failures in Commercial Recirculating Aquaculture*, Roanoke, VA. pp 171-178.
332. **Gilmore, K. R., K. J. Husovitz, T. Holst, and N. G. Love.** 1998. Influent of organic and ammonia loading on nitrifier activity and nitrification performance for a two-stage biological aerated filter system. 1998. *Proceedings of the International Specialty Conference on Microbial Ecology of Biofilms: Concepts, Tools, and Applications*, International Association on Water Quality, Lake Bluff, Illinois, October 8-10, 1998. 309-316.
333. **Terlesky, K. C. and Love, N. G.** 1998. Detection of Hsp60 in activated sludge following exposure to xenobiotic compounds. Poster Presentation, *Abstracts of the 98th General Meeting of the American Society for Microbiology*, Atlanta, Georgia, p. 444.
334. **Terlesky, K. C., and Love, N. G.** 1998. Photoheterotrophy in activated sludge, Poster Presentation, *Abstracts of the 98th General Meeting of the American Society for Microbiology*, Atlanta, Georgia, p. 423.
335. **Fettig, J. D., and Love, N. G.** 1997. BTX degradation in activated sludge culture under denitrifying conditions. Podium presentation. *Proceedings from the 2nd International Conference on Microorganisms in Activated Sludge and Biofilm Processes*, International Association on Water Quality, Berkeley, CA, pp 579-582.
336. **Lubkowitz, E. M. and Love, N. G.** 1997. Development of a single sludge biological treatment scheme that incorporates nitrogen removal for a wastewater containing compounds inhibitory to nitrification. Podium presentation. *Proceedings of the Water Environment Federation 70th Annual Conference and Exposition*, Chicago, IL, October 18-22, 1997. 3(2):577-588.
337. **Rasnake, W. J., Love, N. G., Black, W. L., and Gruber, D.** 1997. Application of a toxicity reduction evaluation at a seafood processing facility which emphasized source reduction and treatment

- efficiency to minimize environmental risk. Podium presentation. *Proceedings of the 29th Annual Mid-Atlantic Industrial and Hazardous Waste Conference*, Roanoke, VA, pp 263-269.
338. **Terlesky, K. C.** and Love, N. G. 1997. Analysis of total protein present in activated sludge: applicability to monitoring the induction of indicator proteins in a microbial consortium. Poster presentation. *Abstracts of the 97th General Meeting of the American Society for Microbiology*, Miami Beach, Florida, p. 469.
 339. **Novak, J. T., Smith, M. L., and Love, N. G.** 1996. The impact of cationic salt addition on the settleability and dewaterability of an industrial activated sludge. Podium presentation. *Proceedings of the Water Environment Federation 69th Annual Conference and Exposition*, 2:211-222.
 340. **Love, N. G.** and Grady, C. P. L. Jr., 1995. Impact of glucose and m-toluate on the rate and extent of benzoate-mediated TOL plasmid instability. Poster presentation. *Abstracts of the 95th General Meeting of the American Society for Microbiology*, Washington, D.C.
 341. **Lu, Y.-T., Love, N. G., and Grady, C. P. L. Jr.** 1993. A microscopic technique to detect plasmid-free cells in a background of plasmid-containing cells. Poster presentation. *Abstracts of the 93rd General Meeting of the American Society for Microbiology*, Atlanta, Georgia.

Published Reports (not peer reviewed)

342. Margaret R. Mulholland*, Nancy G. Love*, Deborah A. Bronk, Vikram Pattarkine, Amit Pramanik, H. David Stensel. 2009. Establishing a research agenda for assessing the bioavailability of wastewater treatment plant-derived effluent organic nitrogen in treatment systems and receiving waters. Chesapeake Bay Scientific and Technical Advisory Committee Publication 09-002, <http://www.chesapeake.org/stac/Pubs/eonreport.pdf>. (*co-chairs)
343. Mulholland, M. R., Love, N. G., Pattarkine, V. M., Bronk, D. A. and Canuel, E. 2007. Bioavailability of Organic Nitrogen from Treated Wastewater. Chesapeake Bay Scientific and Technical Advisory Committee Publication 07-001.

Conference Presentations (not listed elsewhere; presenter in bold, student designations as defined previously)

344. Several posters to be presented at the Association of Environmental Engineering and Science Professors Biannual Conference, Arizona State University, Tempe, Arizona. May 15-16, 2019.
 - A. Noe-Hays, A. Davis, **N. J. Lowe**, **J. Eraci**, **Y. J. Ooi**, A. Sabido, K. Nace, **E. Rodriguez**, K. Wigginton, N. Love. Onsite production of concentrated urine-derived fertilizer in building-scale systems using remote process monitoring and control.
 - **E. Rodriguez**, **W. Targeh**, K. Wigginton, N. G. Love. Comparative Examination of Pharmaceutical Degradation in Synthetic Urine by a Dielectric Barrier Discharge Plasma Jet and UV/H₂O₂ Reactor.
 - Kerkez, B., N. G. Love, R. L. McCaffery, **M. Bartos**, J. Montgomery, **E. TerBeek**. A First Year College Course on Smart Water Systems.
345. Several talks were given by invitation at the Rich Earth Institute's Urine Summit, August 16-17, 2017 in Brattleboro, VT. As PI, Nancy Love was involved with developing content for all these slides and overseeing their presentations.
 - Malavika Sahai. Social Research for the UM INFEWS Project.
 - Heather Goetsch. Microbial risks in source-separated urine.
 - Enrique Rodriguez. Urine-derived fertilizer tool.
 - Dylan Raye-Leonard. Pilot-scale urine diversion and processing @ UMICH
346. **Enrique Rodriguez**, **Dylan Raye-Leonard** and **Heather Goetsch**. 2017. Overview and tour of the urine-diversion and urine processing @Michigan. AEESP Biannual Conference, June 21, 2017.
347. **McFarland, A.**, Larsen, L., Love, N.G. Stormwater Management in Low-Resource Settings Using Green Infrastructure. Fall 2017. Dow Sustainability Symposium, Poster Presentation, Ann Arbor, MI.

348. **Delgado Vela, J., Stadler, L., Love, N.G.** 2014. Elucidating Biotransformation of Pharmaceuticals by the Methanotroph *Methylosinus trichosporium* Ob3b. Gordon Research Conference Environmental Sciences: Water, Plymouth, NH, June 22-27. (poster presentation)
349. **Stadler, L. B., Su, L., Stevens, L., Delgado Vela, J., Aga, D. S., and Love, N. G.** 2013. Impact of Redox Environment and Microbial Populations on Pharmaceutical Biotransformation. Poster presentation. IWA 5th International Conference on Microbial Ecology and Water Engineering, Ann Arbor, MI, July 7 – 10. (poster presentation)
350. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2013. Impact of Dissolved Oxygen Concentration on Pharmaceutical Biotransformations during Wastewater Treatment. Poster presentation. Engineering Graduate Symposium, University of Michigan, Ann Arbor, MI, November 15. (*1st place in Civil & Environmental Engineering track poster competition*).
351. **Stadler, L. B., Su, L., Aga, D. S., and Love, N. G.** 2013. Impact of Redox Environment and Microbial Populations on Pharmaceutical Biotransformation during Wastewater Treatment. Poster presentation. 86th Annual Water Environment Federation Technical Exhibition and Conference (WEFTEC), Chicago, IL, October 5 – 9.
352. **Delgado Vela, J., Stadler, L., Love, N.G.** 2013. Elucidating Biotransformation of Pharmaceuticals by Methanotrophic Bacteria. Association of Environmental Engineering & Science Professors (AEESP) 50th Anniversary Conference, Golden CO, July 14-16.
353. **Stadler, L. B., Moline, C. J., Ernstoff, A. S., Su, L., Dapcic, A. D., Aga, D., and Love, N. G.** 2012. Pharmaceutical Fate in Biological Treatment Reactors Across Varying Redox Environments. Poster presentation. Gordon Research Conference, Environmental Science: Water. Holderness, NH, June 25 - 29.
354. **Love, N.G.** Challenges in Predicting Micropollutant Fate in Biological Processes. WWMod2012 Workshop on Modelling Micropollutant Fate in Biological Processes, Mont-Sainte-Anne, Québec, Canada, Feb 26-28, 2012.
355. **Keen, O., Baik, S., Stadler, L. B., Linden, K. G., Aga, D. S., and Love, N.G.** 2011. Assessing the Use of Advanced Oxidation and Biofiltration to Remove Recalcitrant Pharmaceuticals Downstream of Biological Treatment. Borchardt Conference, University of Michigan, Ann Arbor, MI, February 23.
356. **Cook, S. M.** and N.G. Love. A Regional Strategy for Managing Food Processing and Septage Waste: The Grand Traverse Region Collaboration. Oral presentation at *Biogas Summit*. Flint, MI, October 29, 2010.
357. **Smith, A.L., H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin.** Methane Production from Domestic Wastewater using Anaerobic Membrane Bioreactors. Oral presentation at *Biogas Summit*, Flint, Michigan, October 29, 2010.
358. **Cook, S. M.** and N.G. Love. A Regional Strategy for Managing Food Processing and Septage Waste: The Grand Traverse Region Collaboration. *Michigan Food Processors Summit*. Mt. Pleasant, MI, October 20, 2010
359. **S. Ghosh, C. M. Cremers, U. Jakob, and N. G. Love.** Chlorophenols modulate expression of the multidrug resistance efflux pump MexAB-OprM in *Pseudomonas aeruginosa*. Gordon Research Conference on Environmental Sciences: Water. Holderness, New Hampshire. June 20-25, 2010
360. **Guest, J.S., S. J. Skerlos, N. G. Love.** 2011. Quantitative sustainable design of wastewater treatment plants. Borchardt 2011 Conference: A Seminar on Advancements in Water and Wastewater, Ann Arbor, MI. February 24, 2011. Podium presentation.
361. **Cook, S. M.** and N.G. Love. 2011. Two-phase anaerobic codigestion of septage and food processing waste: designing a reliable, regional waste management strategy. *Borchardt 2011 Conference*, Ann Arbor, MI, February 23-24, 2011. Poster presentation.
362. **S. Ghosh, J. F. Muller, A. M. Stevens and N. G. Love.** Chlorinated phenols and multidrug resistance in *Pseudomonas aeruginosa*. *Borchardt 2011 Conference*, Ann Arbor, Michigan. February 23-24, 2011. Poster presentation

363. Smith, A.L., Z. Li, H.J. Dorer, N.G. Love, S.J. Skerlos, and L. Raskin. 2011. Energy recovery from domestic wastewater using anaerobic membrane bioreactors. Presented at *Borchardt 2011 Conference*, Ann Arbor, Michigan, February 23-24, 2011. Podium presentation.
364. Guest, J.S., S.J. Skerlos, N.G. Love. 2010. An optimization methodology for elucidating locality-specific sustainability trade-offs in wastewater treatment plant process selection. *IWA Leading Edge Conference on Water and Wastewater Technologies*, Phoenix, AZ, June 2, 2010. Poster presentation.
365. Knowlton, K. F., Love, N. G., Thames, T. H., and Z. Zhao. 2010. Is manure turning boy fish into girl fish? An emerging environmental challenge for livestock producers. In *Proceedings of the Virginia State Feed Association Conference*, Roanoke, VA February 19, 2010, pp 83-89.
366. Guest, J. S., Love, N. G., Lamp, J., Ellis, M. W., Naha, S., and Puri, I. K. 2008. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Podium presentation. The Borchardt Conference, Ann Arbor, MI, Feb 27, 2008.
367. Khunjar, W. O., Love, N. G., Skotnicka-Pitak, J., Aga, D. S., Yi, T., and Harper, W. F. Jr. 2008. Biotransformation of pharmaceuticals and personal care products during nitrification: the role of ammonia oxidizing bacteria. Podium presentation. The Borchardt Conference, Ann Arbor, MI, Feb. 27, 2008.
368. Aruguete, D.M., Guest, J.S., Shrout, J. D., Love, N. G., Hochella, Jr., M. F. 2008. Bacteria quantum dot interactions and their environmental implications. Poster presentation. *Environmental Nanoparticles: Science, Ethics and Policy*, University of Delaware, Newark, DE, November 10, 2008.
369. Skotnicka-Pitak, J., Aga, D. S., Khunjar, W. O., Love, N. G., Yi, T., Harper Jr., W. F. 2007. Characterization of EE2 metabolite in bioreactors with pure cultures of *Nitrosomonas europaea* and in activated sludge using LC/ITMS. *56th ASMS Conference on Mass Spectrometry*.
370. Aruguete, D.M., J.S. Guest, J.D. Shrout, N.G. Love, and M.F. Hochella, Jr. 2007. Bacterial physiology and viability in the presence of quantum dot nanoparticles: towards an environmental perspective. American Geophysical Union Fall Meeting, San Francisco, California, December 10, 2007.
371. Pinto, A.J., Hardin, S.C., Guest, J.S., Love, N.G., Shaw, A. 2007. Comparing toxic shock event response protocols for wastewater treatment plants. Podium Presentation. Virginia American Water Works Association and Virginia Water Environment Association Joint Annual Meeting (WaterJAM), Hampton, VA, September 16-20, 2007.
372. Guest, J.S., A.J. Pinto, N.G. Love, and A. Shaw. Corrective action strategies for enhanced biological phosphorus removal wastewater treatment plants during short-term and prolonged toxic shock events. Podium Presentation. Virginia American Water Works Association and Virginia Water Environment Association Water Joint Annual Meeting 2007 (Water JAM), Hampton, Virginia, September 16-20, 2007. *Winner 2007 Best Student Paper Award*.
373. Kelly, R. T. and Love, N. G. 2007. Detecting nitrification problems: A comparison of methods. Podium presentation at the Pacific Northwest Clean Water Association Annual Conference, September 9-12, 2007, Vancouver, British Columbia.
374. Guest, J. S., Naha, S., Frey, S., Sole, J.D., Love, N.G., Puri, I.K., Ellis, M. W. 2007. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation. *First Place Student Poster – Environmental Technologies Category*.
375. Zhao, Z., Knowlton, K. F., Love, N. G. 2007. Can we remove estrogens in dairy manure during storage? Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation. *First Place Student Poster - Natural Environment Category*.
376. Pinto, A.J., Guest, J.S., Love, N.G., Shaw, A. 2007. Process controls at nutrient removal wastewater treatment plants during toxic shock events. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.

377. Khunjar, W. O., Baik, S., Celiz, D., Yi, T., Henriques, I. D. S., Love, N. G., Aga, D. S., and Harper Jr., W. F. 2007. Evaluation of the fate of environmentally relevant micropollutants. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
378. Gilmore, K. R., Love, N. G. and Smets, B. F. 2007. Nitrification and autotrophic nitrogen removal in a hollow-fiber membrane-aerated biofilm reactor. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
379. Ikuma, K., Henriques, I. D. S., Rzigalinski, B. A., Love, B. J., and Love, N. G. 2007. Predicting the public health impact of oxidative toxins using a bacterial glutathione-gated potassium efflux stress response biosensor. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
380. Fraga-Muller, J., Ikuma, K., Stevens, A. M., and Love, N. G. 2007. Organic contaminants cause increased antibiotic resistance in *Pseudomonas aeruginosa*. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
381. Gungor, K., Arogo Ogejo, J., Knowlton, K. F., Love, N. G. 2007. Biological phosphorus removal to produce "Designer Manures" for dairy farms. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
382. Arogo Ogejo, J., Gungor, K., Wen, Z., Hu, Z., Yao, T., Love, N. G., Knowlton, K. F. 2007. Recovery of phosphorus from dairy manure as struvite. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
383. DeBusk, J., Arogo Ogejo, J., Love, N. G., Knowlton, K. F. 2007. Adjusting N:P ratios in liquid dairy manure through nitrification and chemical phosphorus removal to match crop fertilizer requirements. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
384. Beck, J., Gilmore, K. R., Knowlton, K. F., Arogo Ogejo, J., Love, N. G. 2007. Nitrogen removal from dairy waste using deammonification fueled by fermented dairy manure. Virginia Tech's Deans' Forum on the Environment. Blacksburg, VA. February 26, 2007, poster presentation.
385. Muller, J. F., Stevens, A. M. and Love, N. G. 2006. Organic contaminants cause increased antibiotic resistance in *Pseudomonas aeruginosa*. Poster presentation. Environmental Science – Water Gordon Research Conference, June 25-30, 2006, Holderness School, Plymouth, New Hampshire.
386. Zhao, Z., Knowlton, K. F., Love, N. G., and Fang, Y. 2006. Estrogen content of treated dairy manure. Virginia Water Science and Technology Symposium, November 1-3, 2006, Blacksburg, VA. 2006 Best Student Presentation Award.
387. Capuno, R. E., Love, N. G. and Smets, B. F. 2006. Mathematical modeling of nitrogen removal via a coupled nitrification:anaerobic ammonia oxidation biofilm in a hollow fiber membrane bioreactor. Virginia Water Environment Association Annual Meeting, May 1-3, 2006, Roanoke, VA. 2006 Best Student Paper Award.
388. Muftugil, M., Knowlton, K. F., and Love, N. G. 2005. Using enhanced biological phosphorus removal to minimize nutrient delivery from dairy farms to receiving waters. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.
389. Khunjar, W., Sweetman, P., Knowlton, K. F., Smets, B. F. and Love, N. G. 2005. Treatment of anaerobically stabilized dairy waste with an oxygen limited autotrophic nitrification plus denitrification (OLAND) fixed film reactor: startup and maintenance issues. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.
390. Haley, M., Grandstaff, J. and Love, N. G. 2005. Solving a mystery: a case study using root cause analysis to decipher a toxic upset event. Presentation at AWWA/VWEA Joint Annual Meeting, Virginia Beach, Virginia, September 26-28, 2005.
391. Muftugil, M. B., Love, N. G. and Knowlton, K. F. 2005. Using Enhanced Biological Phosphorus Removal (EBPR) to Alter the Nitrogen:Phosphorus Ratio of Dairy Manure and to Minimize Nutrient

- Delivery to Receiving Waters, Water Environment Federation Innovative Uses of Agricultural Wastes Conference, Chicago, IL, July 1-3, 2005.
392. Xu, Y., Linares, K., Meehan, K. A., Love, N. G. and Love, B. J. 2004. pH dependent optical properties of surface modified gold nanoparticles using bovine serum albumin coating. NSTI Nanotechnology Conference and Trade Show, Boston, MA, March 2004.
 393. Kelly II, R. T. and Love, N. G. 2004. Investigating the role of oxidative stress mechanisms in chemically inhibited nitrifiers. Poster presentation. Environmental Science – Water Gordon Research Conference, June 27-July 1, 2004, Holderness School, Plymouth, New Hampshire.
 394. Sandu, S., Hallerman, E. and Love, N. G. 2004. Ozone treatability and pilot-scale treatment for aquaculture effluent recovery and reuse. Presented at the International Conference on Successes and Failures in Commercial Recirculating Aquaculture, Roanoke, VA, July 2004.
 395. Fleming, D., Linares, K., Xu, Y., Love, B., Love, N. and Meehan, K. 2004. Use of immobilized bacterial elements in an environmental biosensor. The Eighth World Conference on Biosensors, Granada, Spain. May 24-26, 2004.
 396. Chakraborty, I., Rhodes, R.R., Stevens, A.M., and Love, N. G. 2004. Monitoring the adaptation of an enriched bacterial consortium in response to chemical stressors using DGGE and sequencing. Poster Presentation, 10th International Symposium on Microbial Ecology, Cancun, Mexico, August 22-27, 2004.
 397. Kelly, R. T. and Love, N. G. Mechanisms of chemical inhibition of nitrification in wastewater treatment. Virginia Water Environment Association, Roanoke, VA, May 2003. 2003 Best Student Paper Award.
 398. Leung, S.M., Little, J. C., Holst, T., and Love, N. G. 2003. Oxygen transfer and consumption in a biological aerated filter. Virginia Water Environment Association, Roanoke, VA, May 2003.
 399. Dauphinais, J. L. and Love, N. G. 2003. Determination of toxic inhibition potential from industrial dischargers to a POTW using a respirometric assay. Virginia Water Environment Association, Roanoke, VA, May 2003.
 400. Bott, C.B., Henriques, I. D. S., Kelly, R. T., Dauphinais, J. L., and Love, N. G. 2002. WERF - Upset early warning systems for biological wastewater treatment. *Proceedings of the Water Environment Federation 8th Annual Industrial Wastes Technical and Regulatory Conference*, Atlantic City, New Jersey, August 11-14, 2002.
 401. Holbrook, R.D., Novak, J. T. and Love, N. G. 2002. The role of particulate and colloidal material in the fate and transport of endocrine disrupting compounds. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 402. Leung, S., Holst, T., Love, N. G. and Little, J. C. 2002. A fundamental investigation of oxygen utilization in a biological aerated filter. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 403. Kelly, R. T. II, Henriques, I. D. S., Dauphinais, J. and Love, N. G. 2002. Evaluation of source-effect relationships for activated sludge response to shock loads of disruptive chemical toxins. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 404. Wimmer, R. F. and Love, N. G. 2002. Activated sludge deflocculation in response to chlorine addition: the potassium connection. Joint Annual Meeting of the Virginia Water Environment Association and Virginia American Water Works Association, September 2002, Virginia Beach, VA.
 405. Love, N. G. and Bott, C. B. 2002. In search of physiological mechanisms linked to wastewater treatment malfunctions caused by toxic chemicals. Oral presentation. Gordon Research Conference on Microbial Stress Responses. July 14-19, Salve Regina University, Newport, Rhode Island.

406. Brazil, B. L. and Love, N. G. 2002. Design and implementation of a pilot-scale nitrogen removal system employing fermentation of endogenous carbon sources to treat an aquaculture waste stream. Aquaculture America 2002, Jan. 27-30, San Diego, CA.
407. Wimmer, R. F. and Love, N. G. 2001. Potassium efflux as a bacterial defense mechanism against chlorinated disinfectants. Virginia Water Environment Association Annual Meeting, May 2001. Williamsburg, VA. *2001 Best Student Research Paper Award.*
408. Brazil, B. L. and Love, N. G. 2001. Design and implementation of a pilot-scale nitrogen removal system employing fermentation and endogenous carbon sources to treat an aquaculture waste stream. Virginia Water Environment Association Annual Meeting, May 2001. Williamsburg, VA.
409. Bott, C. B. and Love, N. G. 2000. Mechanistic evaluation of activated sludge deflocculation in response to shock loads of electrophilic xenobiotic chemicals. Virginia Water Environment Association Annual Meeting, May 2000, Roanoke, VA. *2000 Best Student Research Paper Award.*
410. Ma, G. and Love, N. G. 1999. BTX biodegradation under anoxic, microaerobic, and aerobic conditions in activated sludge sequencing batch reactors. Podium presentation. Virginia Water Environment Association Annual Meeting, May 1999, Tyson's Corner, VA. *1999 Best Student Research Paper Award.*
411. Love, N.G., Delahaye, A., Gilmore, K. R., Holst, T., Husovitz, K. J., Little, J. C., and Novak, J. T. 1999. Performance of a two-stage biological aerated filter system treating domestic wastewater for BOD and ammonia removal – pilot-scale results. Podium presentation. Virginia Water Environment Association Annual Meeting, May 1999, Tyson's Corner, VA.
412. Love, N. G. 1999. The Applicability of the Microbial Stress Response as an Indicator for In Situ and Up-Stream Wastewater Treatment Monitoring. Invited podium presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA.
413. Ma, G., Bilyk, K. and Love, N. G. 1999. Nitrite accumulation and inhibition during denitrification. Poster presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA. *2nd Place Best Student Research Award.*
414. Phipps, S., Love, N. G., and Novak, J. T. 1999. Dewatering of oily wastewater sludge. Poster presentation. Virginia Water Environment Association Industrial Waste and Pretreatment Seminar, Charlottesville, VA. *3rd Place Best Student Research Award.*
415. Love, N.G., Duncan, A. J., and Bott, C. B. 1998. Detection of Hsp60 in activated sludge following heat shock and exposure to xenobiotic compounds. Poster presentation. Gordon Research Conference on the Microbial Stress Response, New England College, Henniker, NH.
416. McInnis, J., Love, N. G., and Novak, J. T. 1998. Pilot Study of Aerobic Treatment of Waste Oily Sludge. Podium presentation. Virginia Water Environment Association Annual Meeting, Norfolk, Virginia.
417. Fallon, A., Novak, J. T., and Love, N. G. 1998. Biological Treatment of Oily Sludge: Laboratory Studies. Podium presentation. Virginia Water Environment Association Annual Meeting, Norfolk, Virginia. *1998 Best Student Research Paper Award.*
418. Phillips, J., and Love, N. G. 1997. Denitrification of recirculating aquaculture system waters using an upflow fixed film bioreactor. Podium presentation. Virginia Water Environment Association Annual Meeting, Roanoke, Virginia. *1997 Best Student Research Paper Award.*
419. Perri, K. L., and Love, N. G. 1997. The effectiveness of sequential treatment strategies on the treatability of a high strength industrial wastewater. Podium presentation. Virginia Water Environment Association Annual Meeting, Roanoke, Virginia.
420. Love, N. G. and Grady, C. P. L. Jr. 1994. The impact of second substrates on the expression of a TOL plasmid. Poster presentation. Gordon Research Conference on Environmental Sciences: Water, New Hampton, New Hampshire.

421. **Hegan (Love), N. G.** and Pfeffer, J. T. 1987. Using oxidation-reduction potential as a monitoring device for biological phosphorus removal systems. Podium presentation. Texas Water Pollution Control Association Annual Meeting, Corpus Christi, Texas.

FUNDED PROJECTS

(Total Value: \$29.3 million; Share Value: \$7.4 million)

Research Support Received – External Programs

(Total Value: \$21.6 million; Share Value: \$5.8 million)

1. Love, N. G. An effect-directed monitoring program for SWIFT effluent-Yr 2. Hampton Roads Sanitation District \$130,000
3/1/17-continuing
100% share
2. Love, N. G., J. P. Newell, M. Arabi, T. Bradley and S. P. McElmurry. Planning Grant: Engineering Research Center for Regenerative, Restorative and Resilient Community Infrastructure Systems (R3CIS). National Science Foundation. \$100,000
09/18 – 08/20
100% share
3. McElmurry, S. P., M. Seeger, N. G. Love, B. Kerkez, J. A. MacDonald Gibson. COLLABORATIVE PROPOSAL: CRISP 2.0 Type 2 – Water and Health Infrastructure Resilience and Learning (WHIRL). National Science Foundation. \$2 million
09/18 – 08/22
5% share
4. Love, N. G., V. Bertacco, B. Kerkez, L. Larsen. IRES: Advancing Cyber-Enabled, Decentralized Water Systems in Rapidly Developing Cities. National Science Foundation. \$249,989
09/17 – 08/20
25% share
5. Lastoskie, C. and N. G. Love. Workshop: Advancing Healthy Communities – the 2017 AEESP Meeting. National Science Foundation. \$49,999
01/17 – 12/17
50% share
6. Kerkez, B. and N. G. Love. Dynamic collection system reconfiguration through real-time modeling and control. Great Lakes Water Authority \$131,864
5/22/17-11/21/18
10% share
7. Daigger, G. T. and N. G. Love. Characterizing the performance and operational characteristics of the bioreactors at the Detroit, MI wastewater treatment plant. Great Lakes Water Authority. \$100,000
5/1/17-4/30/17
10% share
8. Daigger, G. T. and N. G. Love. Traverse City regional wastewater treatment plant's comma-shaped Gram positive bacteria study. Traverse City Regional Wastewater Treatment Plant. \$120,000
9/1/16-12/31/17
25% share
9. Love, N.G., D. S. Aga, R. Hardin, A. Noe-Hays, and K. R. Wigginton. INFEWS/T3: Advancing technologies and improving communication of urine-derived fertilizers for food production within a risk-based framework. National Science Foundation. \$3 million
9/1/16-8/31/20
23% share
10. McElmurry, S. (PI, Wayne State University), multiple co-PIs, N. G. Love is co-PI for project and PI for UM. Flint Area Community Health and Environment Partnership (FACHEP) Phase II Study-Enhanced disease surveillance and environmental monitoring in Flint, Michigan. State of Michigan Department of Health and Human Services. \$2 million
8/1/16-12/31/17
~4% share
11. Xu, M., J. Johnson, N. G. Love, S. Miller and J. Newell. UNS: U.S.-China: Integrated systems modeling of food-energy-water (FEW) nexus for urban sustainability. National Science Foundation. \$499,990
6/1/16-5/31/20
10% share
12. Love, N.G. and T. M. Olson. RAPID: Assessing microbiological quality across point-of-use filters deployed in Flint, MI. (\$30,250 cost share from College of Engineering). National Science Foundation. \$49,999
4/1/16 – 3/31/2017
50% share
13. Newell, J. P., G. T. Daigger, N. McClintock, A. Ramswami, J. Vandermeer. N.G. Love Senior Personnel and one of three proposal authors (with Newell and \$69,242
7/01/15 – 12/31/15

	Daigger). FEW Workshop: "Scaling Up" Urban Agriculture to Mitigate Food-Energy-Water Impacts. National Science Foundation.	30% share
14.	Love, N.G. and C. B. Bott. GOALI: Developing Sensor-Mediated Control Strategies that Allow Innovative Treatment of Nitrogen in Wastewater. National Science Foundation.	\$330,000 9/1/14 – 8/31/18 100% share
15.	Wigginton, K. R., N. G. Love, J. Jimenez, A. Noe Hayes, D. S. Aga, C. B. Bott. Nutrient Recovery Through Urine Separation. Water Environment Research Foundation EPA Water Center.	\$554,034 5/1/14 – 12/31/15 10% share
16.	Raskin, L. and N. G. Love. Evaluation of Waste Activated Sludge Anaerobic Contactor (WASAC™) as a Process for Energy Conservation at Domestic Wastewater Treatment Plants. Carollo Engineering.	\$104,481 3/1/2013-4/30/2014 50% share
17.	Love, N.G., L. Raskin, C. Bott, S. Skerlos and A. Salvesson. Low Energy Alternatives for Activated Sludge-Advancing Anaerobic Membrane Bioreactor Technology. Water Environment Research Foundation.	\$527,000 1/1/2013-12/31/2014 33% share
18.	Burns, M. A. and N. G. Love. Point-of-Use Water Quality Assessment (Sensors for Faucets). MASCO Inc.	\$583,868 9/1/12-8/31/15 10% share
19.	Linden, K., D. S. Aga and N. G. Love. Demonstrating Advanced Oxidation/Biofiltration for Pharmaceutical Removal in Wastewater. Water Environment Research Foundation.	\$150,000 3/1/2012-8/31/2013 10% share
20.	Raskin, L., S. J. Skerlos and N. G. Love. Low-temperature Anaerobic Membrane Bioreactors for Sustainable Domestic Wastewater Treatment. National Science Foundation (CBET-1133793)	\$404,365 9/1/11 – 8/31/14 10% share
21.	Olson, T. and N. G. Love. Point-of-Use Devices as Incubators of Halogenated Phenol-Mediated Antibiotic Resistant Bacteria. National Science Foundation (CBET-1067450) (includes \$55,669 supplement to support dissertation work of Mr. Bayable Atnafu Kassa of Addis Ababa University)	\$373,556 5/1/11 – 4/30/15 50% share
22.	Love, N. G., J. S. Guest and S. J. Skerlos. Quantitative Sustainable Design of Chesapeake-Elizabeth WWTP Upgrade Alternatives	\$8,500 1/1/11-6/30/11 33% share
23.	Love, N. G. Understanding Microaerobic Metabolism in a Sustainable World. Water Environment Research Foundation	\$149,312 2/1/10–3/31/12 100% share
24.	Savage, P. E., G. Keoleian, A. Matzger, S. Linic, and N. Lin (Senior Personnel = H. Wang and N. G. Love). EFRI HyBi: The Science and Engineering of Microalgae Hydrothermal Processing. National Science Foundation (EFRI 0937992)	\$2,000,000 9/1/09-8/31/13 2% share
25.	Love, N. G., K. Linden and D. S. Aga. Demonstrating Advanced Oxidation Technologies on Pharmaceutical Removal Downstream of Biological Treatment. Water Environment Research Foundation.	\$80,000 1/1/10-5/15/11 34% share
26.	Love, N. G. and L. Raskin. MSB – Investigating the Relationship Between Structural Diversity and Functional Resilience to Stress in Ammonia Oxidizers. National Science Foundation (IOS-0919629)	\$312,560 9/1/09-8/31/11 50% share
27.	Raskin, L., S. J. Skerlos and N. G. Love. Anaerobic Membrane Bioreactors for Sustainable Wastewater Treatment. Water Environment Research Foundation	\$159,938 5/1/09-4/30/11 10% share

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| 28. | Bott, C. B., Schafran, G., Mulholland, M. and Love, N. G. Integrated Fixed-Film Activated Sludge (IFAS) Demonstration Project at the James River Wastewater Treatment Plant (JRWWT). Hampton Roads Sanitation District | \$100,000
4/1/08–3/31/09
30% share |
| 29. | Bronk, D., Canuel, E., Hatcher, P., Love, N. G. and Mulholland, M. Collaborative Research: Assessing the Bioavailability of Effluent Organic Nitrogen Along a Freshwater to Saltwater Continuum. National Science Foundation (NG Love original PI, shifted to co-PI upon moving to MI) | \$448,073
4/1/08–3/31/10
8% share |
| 30. | Love, N. G., Ellis, M., Puri, I. Development of a Nitrifying Microbial Fuel Cell for Sustainable Wastewater Treatment. Water Environment Research Foundation | \$155,869
3/15/07–3/14/09
50% share |
| 31. | Edwards, M. and Love, N. G. Effects of Nitrification on Distribution System Materials. American Water Works Research Foundation | \$350,000
1/15/07–11/15/09
8% share |
| 32. | Love, N. G. Anammox Studies in Association with DC Water and Sewer Authority. District of Columbia Water and Sewer Authority | \$95,000
9/1/06–8/31/08
100% share |
| 33. | Love, N. G. Development of Response Protocols for Wastewater Treatment Plants Exposed to CBR Contaminants. Water Environment Research Foundation. | \$300,000
1/1/06–8/31/08
100% share |
| 34. | Love, N. G. Preliminary Nitrification Experiments in Support of the Reject Water Treatment Study for The Blue Plains Advanced Wastewater Treatment Facility. District of Columbia Water and Sewage Authority. | \$32,133
12/24/05–6/24/06
100% share |
| 35. | Love, N. G. Planning, Mobilization, Enrichment and Evaluation of Anammox Organisms. District of Columbia Water and Sewage Authority. | \$7,364
11/15/05–9/30/06
100% share |
| 36. | Love, N. G. and Love, B. J. Detection of Toxins in the Water Supply. National Institute of Standards and Technology. | \$75,000
10/1/05–9/29/06
50% share |
| 37. | Love, N. G., Aga, D. S. and Harper, W. J. Collaborative Research: The Biotransformation of Hydrophobic and Hydrophilic Pharmaceuticals and their Metabolites by Nitrifying and Heterotrophic Cultures, National Science Foundation. | \$414,196
6/1/2005–5/31/2009
26% share |
| 38. | Bonner, J. S., Love, N. G., Jones, K. L., Zaslavsky, I., Baru, C. K., Fountain, T., Wentling, T. L., Collaborative Large-Scale Engineering Analysis Network for Environmental Research for the Coastal Margin, National Science Foundation. | \$85,309
8/1/2004–7/31/2005
8% share |
| 39. | Love, N. G., Knowlton, K. F. and Smets, B. F. Wastewater Treatment to Minimize Nitrogen Delivery from Dairy Farms to Receiving Waters. The Cooperative Institute for Coastal and Estuarine Environmental Toxicology. | \$214,200
9/1/2004–8/31/2006
60% share |
| 40. | Love, N. G. and Smets, B. F. Integrated Biotreatment Technology for Nitrogen-Rich Wastewaters in Advanced Life Support Systems. NASA. | \$419,119
10/1/2004–9/30/2007
90% share |
| 41. | Shaw, A. and Love, N. G. Feasibility Testing of Support Systems to Prevent Upsets. Water Environment Research Foundation. | \$175,000
3/1/04–2/28/06
15% share |
| 42. | Vikesland, P. and Love, N. G. Treatability Evaluation of Three Chlorinated Organic Compounds. Parsons Corporation. | \$115,730
12/19/03–12/31/04
50% share |

43. Vikesland, P. and Love, N. G. Effects of Dissimilatory Iron Reducing Bacteria on the Longevity of Iron Permeable Reactive Barriers. Virginia Water Resources Research Center. \$18,500
7/1/03–6/30/04
20% share
44. Knowlton, K. F., Love, N. G. and Mullins, G. Wastewater Treatment to Minimize Nutrient Delivery from Dairy Farms to Receiving Waters. The Cooperative Institute for Coastal and Estuarine Environmental Toxicology. \$278,934
9/1/03–8/31/05
40% share
45. Love, N. G., Meehan, K. A., Love, B. J. A Microfluidic Biosensor for Environmental Monitoring. U. S. Environmental Protection Agency Midwest Hazardous Substances Research Center. \$279,022
10/1/03–9/30/06
34% share
46. Love, N. G. Factors Affecting the Performance of Acid Phase Digesters Treating Municipal Sludges: Stage I. District of Columbia Water and Sewer Authority. \$24,382
6/3/02–11/30/02
100% share
47. Vikesland, P., Love, N. G. and DiGiano, F. Assessment of Seasonal Practices and Impacts to Chloraminating Utilities. American Waterworks Association Research Foundation. \$528,362
7/1/02–1/1/05
22% share
48. Little, J. D. and Love, N. G. Optimizing a Biological Aerated Filter. Virginia Center for Innovative Technology. \$30,000
3/1/02–10/31/02
50% share
49. Little, J. C., Filz, G., Berry, D., Eick, M., Hochella, M., Love, N., Schreiber, M., Widdowson, M. GAANN: An Interdisciplinary Program in Environmental Biogeochemistry. US Dept of Education. Phase I: \$432,855
8/16/01–8/15/04
17% share
Phase II: \$373,599
8/16/04–8/15/07
8% share
50. Novak, J. T., Holbrook, D., Love, N. G. Endocrine Disrupting Potential in Wastewater Effluents and Biosolids. Virginia Water Resources Research Center. \$19,200
7/1/01–6/30/02
33% share
51. Love, N. G. and Little, J. C. Development of a Fundamentally-Based Model of a Biological Aerated Filter. Degremont North American Research and Development, Inc. \$55,420
6/11/01–8/10/02
50% share
52. Novak, J. T., Holbrook, D., Love, N. G. Endocrine Disrupting Potential in Wastewater Effluents and Biosolids. Virginia Water Resources Research Center. \$19,200
7/1/01–6/30/02
33% share
53. Bishop, P., Love, N. G., and Stevens, A. M. Adaptation of subsurface microbial biofilm communities in response to chemical stressors. EPA Hazardous Substance Research Center (Purdue University). \$214,000
9/1/01–8/31/03
50% share
54. Love, N. G., Upset early warning systems for biological treatment processes: fundamental studies on source-cause-effect relationships, Water Environment Research Foundation. \$326,646
1/1/01–4/30/04
100% share
55. Novak, J. T., Love, N. G., and Hughes, J. M. Testing of a Package Wastewater Treatment System and Consultation Services for UTD, Inc., UTD, Inc. STTR II. \$150,100
10/1/00–5/1/02
45% share
56. Love, N. G. and Love, B. J. New technologies: integrating microfluidics, materials science and microbiology: biosensors for protecting wastewater treatment systems. National Science Foundation. \$105,050
9/1/00–12/31/02
75% share
57. Love, N. G., Grizzard, T., and Novak, J. T. Virginia Tech's Plan of Study for the Loudoun County Sanitation Authority Broad Run Advanced Wastewater Treatment Pilot Plant Study. CH2M Hill, Inc. \$126,564
8/15/00–5/31/01
30% share

58.	Love, N. G. Monitoring the full-scale Biofor® biological aerated filter system at Roanoke, VA. Inflico Degremont, Inc.	\$30,000 12/24/99–2/15/01 100% share
59.	Love, N. G. and Bott, C. B. Assessment and framing workshop on upset early warning systems. Water Environment Research Foundation.	\$81,064 6/30/99–7/1/00 75% share
60.	Love, N. G. and Stevens, A. M. Characterizing nitrifying bioaugmentation cultures. Sybron Chemical Company and Virginia Center for Innovative Technology.	\$90,000 9/1/98–6/30/00 50% share
61.	Love, N. G. Evaluating protein induction patterns in industrial activated sludge cultures. Eastman Chemical Company.	\$43,294 12/1/97–12/31/98 100% share
62.	Love, N. G., Little, J. C., and Novak, J. T. A Fundamentally-based investigation into the operational potential of the Biofor® biological aerated filter. Degremont North American Research and Development, Inc., with matching from the Virginia Center for Innovative Technology.	\$95,592 9/97–12/98 50% share
63.	Widdowson, M. A. Love, N. G., and Novak, J. T. Evaluation of intrinsic bioremediation at the Douge Creek Subdivision, Ft. Belvoir, VA. Horne Engineering Services, Inc.	\$28,800 9/16/96–9/16/97 10% share
64.	Love, N. G., Widdowson, M. A., and Novak, J. T. An investigation into the use of biologically-based treatment technologies for waste oil volume reduction at Norfolk Southern Corporation. Norfolk Southern Corporation and Virginia Water Resources Research Center.	\$116,835 8/1/96–8/31/98 45% share
65.	Love, N. G. Laboratory studies to assess wastewater treatment strategies for Eastman Chemical Company. Eastman Chemical Company.	\$10,000 11/15/95–3/1/97 100% share
66.	Love, N. G. The distribution and expression of BTX-degrading microorganisms in anoxic/aerobic single sludge biological treatment processes. National Science Foundation CAREER Award.	\$335,618 7/1/95–6/30/99 100% share
67.	Love, N. G. The role of anoxic zones in preventing methylethyl ketoxime inhibition of nitrification. Virginia Water Resources Research Center and AlliedSignal Chemical Company.	\$20,000 4/1/95–4/30/96 100% share
68.	Love, N. G. and Novak, J. T. The impact of industrial wastewater composition on the bioflocculation of biological sludges. Virginia Water Resources Research Center and Eastman Chemical Company.	\$30,000 2/1/95–2/29/96 50% share

Research Support Received – Internal Programs
(Total Value: \$4.0 million Share Value: \$424,850)

69.	Love, N. G., M. Zimmerman. Partnerships that Support Confident Use and Management of Point-of-Use Drinking Water Units in Flint, MI. University of Michigan Poverty Solutions Center.	\$25,000 Jan 2020-present 90% share
70.	Love, N.G., J. Eisenberg, A. Jones. Addressing the Food-WASH Nexus Across the Urban-Rural Gradient and Impacts on Childhood Stunting. University of Michigan MCubed 2.0 Program.	\$60,000 2015-2017 33% share
71.	Schwank, J., M. Bareau, G. Fisher, P. Adriaens, E. Hill, N. G. Love, R. Clarke, J. Diana, K. Wigginton, D. Scavia, A. Hoffman, S. Miller, A. Huang-Saad, J. Trumpey, L. Raskin, S. Skerlos, A. Todd. REFRESH: Researching Fresh	\$2,998,832 7/1/14 – 6/30/17 1 of 17 co-PIs at 6% share each

	Solutions to the Energy/Water/Food Challenge in Resource-Constrained Environments. University of Michigan Third Century Initiative.	
72.	Newell, J., N. G. Love and R. Norton. Planning for Technological Innovation: Water, Infrastructure and Sustainability. University of Michigan MCubed program.	\$60,000 1/13/13 – 12/31/14 33% share
73.	Kolars, J. D., N. G. Love, S. Fisseha, A. Burton, L. Isom, P. Yadav, J. Godfrey, and K. Sienko. A Proposal to Develop the Ethiopia-Michigan Platform for Advancing Collaborative Engagement (EM-PACE). University of Michigan Third Century Initiative. N. Love co-leads the Environmental Initiative within this program.	\$297,800 1/1/14 – 8/31/15 1 of 8 co-PIs at 12% each
74.	Love, N. G., Skerlos, S., and Raskin, L. Global Sustainable Water Systems – Acknowledging Wastewater as a Resource. Graham Environmental Sustainability Institute, University of Michigan.	\$5,000 1/1/08–8/1/08 34% share
75.	Love, N.G., Muller, J. F., Stevens, A. M. and Hagedorn, C. Evaluating the extent of pollution-induced antibiotic resistance in environmental bacterial strains. Virginia Water Resources Research Center.	\$18,000 7/1/06–6/30/07 25% share
76.	Vikesland, P., Love, N. G. and Knocke, W. R. Construction of the Environmental BioNanoTechnology Laboratory (EB/NL), ASPIRES.	\$82,030 7/1/05–6/30/06 33% share
77.	Knowlton, K. F., Love, N. G., and Ogejo, J. A. Fate of endocrine disrupting compounds in dairy manure during storage and treatment. Virginia Water Resources Research Center.	\$18,000 7/1/05–6/30/06 33% share
78.	Hallerman, E. and Love, N. G. Scale up of water treatment and recovery system at Blue Ridge Aquaculture. Virginia Tech Commercial Fisheries and Shellfish Technologies Program	\$26,569 7/1/01–6/30/02 50% share
79.	Love, N. G., Dietrich, A., Edwards, M., Godrej, A., Grizzard, T., Novak, J. T., Schreiber, M. Acquisition of a gas chromatograph with both mass spectrometer and flame photometric detector in support of water quality research. Virginia Tech ASPIRES program.	\$88,340 1/1/01–12/31/01 14% share
80.	Gibson, H. W., Bevan, D. R., Love, N. G. A collaborative effort to establish a research program for developing biomimetic sensors using molecularly imprinted polymers (MIPs). Virginia Tech ASPIRES program.	\$50,393 1/1/01–12/31/01 33% share
81.	Widdowson, M., Schreiber, M., and Love, N. G. Evaluating processes that control natural attenuation of nitrate in natural waters. Virginia Water Resources Research Center.	\$5,000 7/1/00–6/30/01 33% share
82.	Love, N. G. and Knowlton, K. F. Development of a collaborative effort on environmentally responsible management of dairy wastes. Virginia Tech ASPIRES program plus College and Departmental matching support.	\$37,944 1/1/00–5/31/01 50% share
83.	Stevens, A. M. and Love, N. G. Development of a <i>lux</i> reporter for the anaerobic human pathogen <i>Bacteroides</i> . Virginia Tech Optical Sciences and Engineering Research Center.	\$50,000 7/1/00–6/30/01 10% share
84.	Love, N. G. and Brazil, B. L. Performance optimization and economic analysis of a fluidized denitrifying unit for treating aquaculture effluents. Virginia Tech Commercial Fisheries and Shellfish Technologies Program.	\$57,456 7/1/99–6/30/01 50% share
85.	Popham, D. L., Brewer, K. J., Esen, A., Love, N. G., Rutherford, C. L., Shirley, S. W., Stevens, A. M., and Walker, R. A. Establishment of a phosphor/fluorescent imaging facility in Derring Hall. Virginia Tech ASPIRES program.	\$69,200 1/98–12/99 2% share

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| 86. | Love, N. G. and Stevens, A. M. Development of a collaborative research effort in environmental biotechnology as applied to biological wastewater treatment systems. Virginia Tech ASPIRES program. | \$32,080
1/98–12/99
50% share |
| 87. | Widdowson, M. A., Love, N. G., Novak, J. T., and Berry, D. F. Intrinsic bioremediation of contaminants in groundwater and soil: A strategy for research and partnerships. Virginia Tech ASPIRES program. | \$37,300
4/97–3/98
25% share |
| 88. | Love, N. G. Denitrification of recirculating aquaculture system waters. Virginia Tech Commercial Fisheries and Shellfish Technologies Program. | \$6,000
3/1/95–6/30/96
100% share |
| 89. | Randall, C. W. and Love, N. G. Identification of bacterial groups in biological nutrient removal systems. Virginia CORE Research Program. | \$4,300
7/1/94–6/30/95
50% share |

Institutional/ Educational Support Received – External Programs
(Total Value: \$3.7 million, Share Value: \$1.2 million)

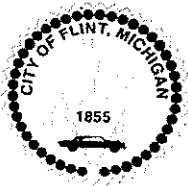
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| 90. | Love, N. G., Thole, K. A. and McCrickard, S. Development and Maintenance of a Portal Website for the NSF Advance Program, National Science Foundation. | \$94,671
9/1/04–8/31/06
12% share |
| 91. | Layne, P., Love, N. G. and Thole, K. A. ADVANCE Engineering Workshop, National Science Foundation. | \$61,381
8/1/04–1/31/05
33% share |
| 92. | McNamee, M., Hyer, P.B, Love, N. G. and Thole, K. A. ADVANCE Institutional Transformation Award for Virginia Tech. NSF. Co-initiated and co-authored proposal. Active participant from 2003-2006. | \$3,460,211
7/1/03–6/30/08
33% share |
| 93. | Oerther, D. and Love, N. G. Workshop to Explore the Value of Applying Molecular Biology Tools in Environmental Engineering, National Science Foundation. | \$21,400
10/1/01–9/30/02
10% share |
| 94. | Love, N. G. Making the Connection Program, Women in Engineering Programs and Advocates Network. | \$5,000
12/1/1999–1/31/2003
100% share |
| 95. | Little, J. C. and Love, N. G. Environmental Engineering: Creation of an electronic textbook. SUCCEED and College of Engineering Green Engineering Program. | \$30,416
1/1/95–5/31/97
50% share |

INVITED SEMINARS AND PRESENTATIONS

1. Invited Speaker – My Career Path: Seminar for CWEA-AWWA Student Chapter, California State Polytechnic University, Pomona. November 19, 2020.
2. Invited Speaker - Water Infrastructure in Resource-Constrained Shrinking and Expanding Cities: The Impact on Water Quality and Public Health. University of Arizona Department of Chemical and Environmental Engineering. September 21, 2020.
3. Invited Speaker: Rethinking America's Urban Water Infrastructure: Resource Efficiency, Access, and Public Health. University of Notre Dame, Civil and Environmental Engineering Challenges and Innovation Seminar Series. Virtual. September 17, 2020.
4. Invited Speaker. Water Infrastructure in Resource-Constrained Shrinking and Expanding Cities: The Impact on Water Quality and Public Health. Department of Environmental Engineering, Technical University of Denmark. January 17, 2020.
5. American Academy of Environmental Engineers and Scientists Kappe Lecturer

(<https://www.aees.org/kaplectureseries/kaplecturer.php>). 2019-2020. Offered two talks and presented both at most venues. Talk 1: "Rethinking America's Urban Water Infrastructure: Resource Efficiency, Access and Public Health" or Talk 2: "Environmental Engineering and Science Academic Scholarship in Service to Society: Our Role and Responsibility." Seventeen venues were selected among 20 applicants. Most venues involve more than one host school. Host schools include: Carnegie Mellon University and University of Pittsburgh; Clemson University; Georgia Tech; Michigan State University and Wayne State University; North Carolina State University; Old Dominion University; Rice University, University of Houston and University of Texas-Austin; Wilkes University; University of California-Merced; University of Cincinnati; University of Iowa; University of Minnesota; University of Nebraska-Lincoln; University of Rhode Island; University of Tennessee-Knoxville; University of Washington; University of Wisconsin.

6. Invited Keynote Speaker: The Microbiology of Drinking Water Systems in Shrinking and Expanding Resource-Constrained Cities and the Link to Public Health. International Water Association Microbial Ecology of Water Engineering (MEWE) Biannual Conference, Hiroshima, Japan, November 2019.
7. Invited Keynote Speaker: Achieving Resource Efficiency through Urine Separation and Nutrient Recovery: Advancing Hybrid Solutions for a Sustainable Future. Virginia Water Environment Association Education Seminar, May 8-9, 2019, Richmond, VA.
8. Invited Plenary Speaker: Shrinking and Expanding Urban Water Systems in Resource-Constrained Cities: the Link to Public Health. TransCon2019: Understanding and Managing Microbial Transformation of Environmental Contaminants, Monte Verita, Ascona, Switzerland. April 28 to May 3, 2019.
9. Invited speaker: The Microbial Characteristics of Drinking Water in Flint, MI: The Point-of-Use "Lead" Filter Field Study. Texas A&M University Department of Civil Engineering Environmental and Water Resources Seminar Series. March 4, 2019.
10. Invited speaker: Progress with Source Separation and Conversion to Fertilizer. Water Environment Federation Forum 2019: James Barnard Research Conference on Emerging Themes on Biological Phosphorus Removal and Recovery. January 14-15, 2019, Austin, TX.
11. Invited speaker: A Field Study of Microbial Changes Across Activated Carbon Block Point of Use Filters Deployed During the Flint Water Crisis. University of California-Davis. May 22, 2018.
12. Keynote speaker. "Water Infrastructure in Shrinking and Expanding Cities: The Impact on Water Quality and Public Health". Integrity of Creation Conference, The Global Water Crisis, Duquesne University. September 27-28, 2017, Pittsburgh, PA.
13. Invited speaker: Microbiome at the Global Tap: Understanding Microbial Colonization of Point-of-Use Drinking Water Filters. 14th Annual USEPA Drinking Water Workshop: Small Systems Challenges and Solutions, Cincinnati, OH, August 22-24, 2017.
14. Distinguished Lecture. Borchardt and Glysson Collegiate Professorship Induction. "At the interplay of water and health." Borchardt Conference, University of Michigan, February 22, 2017.
15. Distinguished Lecture. "The interplay between chemicals and microbiomes: an environmental biotechnology perspective." Wayne State "Water at Wayne" Lecture Series, Feb 1, 2017.
16. Invited speaker. "Microbiome at the Global Tap: Understanding microbial colonization of point-of-use drinking water filters." Marquette University, January 25, 2017
17. Invited speaker. "A Balancing Act: Achieving Nutrient Recovery via Urine-Derived Fertilizers while Managing Emerging Contaminants." University of Buffalo, November 11, 2016.
18. Distinguished Lecture. "At the Confluence: Nutrients, Trace Chemicals and Sustainability in the Urban Water Sector." Cornell University, October 24, 2016.
19. AEESP Distinguished Lecturer. 2015-2016 academic year. Presented one of two talks: "The Interplay Between Chemicals and Microbiomes: An Environmental Biotechnology Perspective", or "At the



RESOLUTION NO.: 210229
PRESENTED: MAY 19 2021
ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT OF SHAWN P. MCELMURRY TO THE WATER
SYSTEM ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.


WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Shawn P. McElmurry to the Water System Advisory Council (See Attached Resume).

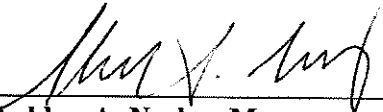
NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Shawn P. McElmurry, address 2153 Engineering Building 5050 Anthony Wayne Drive, Detroit, MI 48202 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:


Angela Wheeler (May 13, 2021 13:09 EDT)

Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:


Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:


Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 05/13/2021

BID/PROPOSAL#

AGENDA ITEM TITLE: RESOLUTION APPOINT MEMBERS TO THE WATER SYSTEM ADVISORY COUNCIL

PREPARED BY: Lottie Ferguson, Chief Resilience Officer
(Please type name and Department)

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

In July 2018, the State of Michigan's Department of Environment, Great Lakes and Energy (EGLE) established the Lead and Copper Rule (LCR) under the Michigan Safe Water Drinking Act 399.

The purpose of the LCR is to minimize lead and copper in drinking water and indicates that a Water System Advisory Council (WSAC) is to be established on behalf of cities with 50,000 or more people served by its municipal water system. The WSAC is responsible for assisting with public awareness to create transparency and consumer confidence through statewide efforts of public education and action steps to ensure water quality through: water sampling, water treatment and lead service line replacement. A Council shall consist of a least five members appointed by the community supply. To be eligible for appointment to Council, an individual must have a demonstrated interest in or knowledge about lead in drinking water and its effects. At least one member must be a local resident who does not formally represent the interest of any incorporated organization.

In June 2019, the City of Flint began to establish a board for the WSAC by sending letters of interest to various community partners and members. The process of establishing the board did not see completion and was then put on hold due to a change in City administration. The open public meeting was also delayed due to the COVID-19 pandemic.

In February 2021, the Office of Public Health (OPH) sent notices of participation to public health community partners and community members and requested resumes of those individuals in order to submit an approval to Flint City Council to officially establish the Water System Advisory Council. The WSAC will be hosted by the City's OPH, who will organize and oversee the annual meeting, according to the Open Meetings Act 267. This annual meeting will inform and include the public on the City's lead and copper status, progress and next steps.

The names of the individuals who are Mayoral appointed to the Water System Advisory Council are: Dr. Lawrence Reynolds, Shawn P. McElmurry, PhD, and Benjamin Pauli, PhD, Environmental. The designated Appointees have either lived or worked within the Flint community during the Flint Water



CITY OF FLINT

BUDGET YEAR 1 \$0

BUDGET YEAR 2 \$0

BUDGET YEAR 3 \$0

OTHER IMPLICATIONS (*i.e., collective bargaining*):

STAFF RECOMMENDATION: (PLEASE SELECT): X ☒ APPROVED ☐ NOT APPROVED

DEPARTMENT HEAD SIGNATURE: Lottie Ferguson, Chief Resilience Officer
(PLEASE TYPE NAME, TITLE)

SHAWN P. MCELMURRY, PhD, PE

2158 Engineering Building
5050 Anthony Wayne Dr
Detroit, MI 48202

Office: (313) 577-3876
E-mail: s.mcelmurry@wayne.edu

EDUCATION

Ph.D. Environmental Engineering, Michigan State University, 2008
Dissertation: *Characterization of Dissolved Organic Carbon: Assessment of Copper Complexation and Export of Carbon from Watersheds as a Function of Land Use*
Co-Advisors: Thomas C. Voice and David T. Long
M.S. Environmental Engineering, Michigan State University, 2002
B.S. Chemistry major, Central Michigan University, 1998

EXPERIENCE

2014-current Associate Professor, Department of Civil & Environmental Engineering, Wayne State University
2008-2014 Assistant Professor, Department of Civil & Environmental Engineering, Wayne State University

RESEARCH PROJECTS IN LAST 5 YEARS (PI listed first, otherwise co-PI unless noted)

2018-2022 McElmurry, S.P.; Seeger, M.; O'Donnovan, K.; Soback, J.; Smith, R.; Kilgore, P.; Love, N.G.; Kerkez, B.; MacDonald Gibson, J.A. CRISP 2.0 Type 2: Collaborative Research: Water and Health Infrastructure Resilience and Learning (WHIRL). National Science Foundation. Award #1832692 (\$1,570,000), 9/1/2018-8/31/2022

2020-2021 Harris, A.; Crouch, P.; McElmurry, S.P. Urban Residential Soil Lead Remediation Strategies Project. Erb Family Foundation, subcontract through EcoWorks, Cayuse Award #A17-0555. 1/1/2020-12/31/2021.

2018-2019 Dittrich, T.; Allen, M.; Boukhalfa, H.; Migdisov, A.; Mohanty, S.; McElmurry, S.P. AOI 2 Coupled Hydrothermal Extraction and Ligand-Associated Organosilica Media Recovery of REEs from Coal Fly Ash. U.S. Department of Energy. Award #DE-FE0031565 (\$538,849 total)

2017-2019 Harris, A.; Crouch, P.; McElmurry, S.P. Urban Residential Soil Lead Remediation Strategies Project. Erb Family Foundation, subcontract through EcoWorks, Cayuse Award #A17-0555. 6/1/2017-12/31/2019. (subcontract \$64,646)

2016-2017 McElmurry, S.P.; Kilgore, P.; Soback, J.; Seeger, M.; Zervos, M.; Sullivan, L. (+17 other investigators); Flint Area Community Health and Environment Partnership (FACHEP) – PHASE II State of Michigan, Contract #20163753-00. 6/1/2016-12/21/2017 (\$3,350,000 total)

2016-2017 McElmurry, S.P. RAPID: Chemical treatment efficiency of point-of-use filters deployed in Flint, Michigan National Science Foundation, Award #1633013 (\$49,992 total)

2016-2018 McElmurry, S.P.; Miller, C.J.; Pitts, D.K.; Sackey, D.J.; Seeger, M.; Masten, S.J.; Hanna-Attisha, M. Rapid Response to Contaminants in Flint Drinking Water. National Institute of Health; National Institute of Environmental Health Sciences. Award # 1R21ES027199-01 (\$422,110 total)

2016 McElmurry, S.P.; Kilgore, P. Seeger, M.; Zervos, M.; Sullivan, L. Flint Area Community Health and Environment Partnership (FACHEP) – PHASE I State of Michigan (\$123,091 total)

2015-2018 Nassauer, J., McElmurry, S.P., Sampson, J., Webster, J., Dewar, M., Alvarez, A., Schulz, A., Burton, A., Riseng, C. Providing support for watershed based policy and management decisions: Lake Erie and City of Detroit. Erb Family Foundation, subcontract through The University of Michigan (\$1,116,999 total; 82,392 subcontract)

2015-2018 Zhang, Y., Zhou, K., Lemke, L., McElmurry, S.P. (senior personnel) An Integrated Approach to Ensuring Food Safety and Sustainability in Urban Agriculture in the Greater Detroit Area US Department of Agriculture, grant # 2015-70001-23424 (\$272,532 total)

2015-2016 Zhang, Y., Lemke, L., Zhou, K., McElmurry, S.P. Heavy metals and the development of antibiotic resistance in urban agriculture. Center for Urban Responses to Environmental Stressors (CURES) Pilot Project funded through National Institute of Health Grant P30 ES020957 (\$80,000 total)

- 2015 Miller, C., Zhang, Y., **McElmurry, S.**, Lemke, L., Pothukuchi, K. *A Workshop for Integrative and Sustainable Food, Energy, and Water in Transitioning Urban Landscapes*. National Science Foundation, CBET Award # 1541869 (\$28,840 total)
- 2014-2016 Caruso, J.A.; **McElmurry, S.P.**; Moldenhauer, J.; Reynolds, R.; Sackey, D.; Schroeck, N.; Stemmer, P.; Westrick, J.; Zhang, K.; Giblin, F. *Petcoke in an urban environment: A community-based participatory model*. Center for Urban Responses to Environmental Stressors (CURES) Pilot Project funded through National Institute of Health Grant P30 ES020957 (\$150,000 total)

AWARDS, CERTIFICATES, HONORS, and LICENSURE

- 2014, 2015 *Outstanding Reviewer Award*, Journal of Environmental Engineering, American Society of Civil Engineers
- 2013 *2013 ExCEED New Faculty Excellence in Teaching Award*, American Society of Civil Engineering
- 2012 *Outstanding Faculty Service Award*, Engineering Student and Faculty Board, College of Engineering, Wayne State University
- 2012 *Favorite Professor Award*, Wayne State University
- 2010, 2011 *Assistant Mentor ASCE ExCEED Teaching Workshop*–American Society of Civil Engineering (ASCE) – U.S. Military Academy, West Point, NY
- 2010 *Michigan Professional Engineering License* (#6201057641, date issued 09/24/2010)
- 2009 *ExCEED Fellow* –American Society of Civil Engineering (ASCE)

PEER REVIEWED PUBLICATIONS FROM LAST 5 YEARS

*corresponding author, §graduate student, †undergraduate student

- [48] §Alla, L.N.R.; §Monshi, M.; §Siddiqua, Z.; §Shields, J.; §Alame, K.; §Wahls, A.; §Akemann, C.; §Meyer, D.; §Crofts, E.J.; §Saad, F.; §El-Nachef, J.; §Antoon, M.; §Nakhle, R.; §Hijazi, N.; §Hamid, M.; §Gurdziel, K.; **McElmurry, S.P.**; Kashian, D.R.; Baker, T.R.; *Pitt, D.K. (2021) *Detection of endocrine disrupting chemicals in Danio rerio and Daphnia pulex: Step-one, behavioral screen*. Chemosphere, 271, p.129442. DOI:10.1016/j.chemosphere.2020.129442
- [47] Salim, A.; *Kilgore, P.; Mudall, G.; **McElmurry, S.P.**; Zervos, P.K.; (2020) *Trends in Legionnaires' disease-associated hospitalizations, United States, 2006–2010*. Open Forum Infectious Diseases. DOI: 10.1093/ofid/ofaa296
- [46] *§O'Shay-Wallace, S.; Day, A.M.; §Islam, K.; **McElmurry, S.P.**; Seeger, M.W. (2020) *Boil Water Advisories as Risk Communication: Consistency between CDC Guidelines and Local News Media Articles*. Health Communication. DOI: 10.1080/10410236.2020.1827540
- [45] *Sobeck, J.; Smith-Darden, J.; Hicks, M.; Kernsmith, P.; Kilgore, P.E.; Treemore-Spears, L.; **McElmurry, S.P.** (2020) *Stress, Coping, Resilience and Trust during the Flint Water Crisis*. Behavioral Medicine. 46(3-4) DOI: 10.1080/08964289.2020.1729085 (PMID: 32787730)
- [43] *§Day, A.M.; §O'Shay-Wallace, S.; Seeger, M.W.; **McElmurry, S.P.** (2020) *Gender and Presence of Children: Examining Media Uses, Informational Needs, and Source Preferences during the Flint, Michigan Water Crisis*. Journal of International Crisis & Risk Communication Research DOI: 10.30658/jicrcr.3.2.2.
- [42] *Zahran, S.; Mushinski, D.; **McElmurry, S.P.**; Keyes, C. (2020) *Water Lead Exposure Risk in Flint, Michigan after Switchback in Water Source: Implications for Lead Service Line Replacement Policy*. Environmental Research. 181, 108928. DOI: 10.1016/j.envres.2019.108928 (NIHMSID: 1552950; PMID: 31787215)
- [41] *§Day, A.M.; §O'Shay-Wallace, S.; Seeger, M.W.; **McElmurry, S.P.** (2019) *Informational Sources, Social Media Use, and Race in Flint, Michigan's Water Crisis*. Communication studies. DOI: 10.1080/10510974.2019.1567566 (NIHMS ID: 1518397)
- [40] Zahran, S., Iverson, T., **McElmurry, S.P.**, Weiler, S., & Levitt, R. (2019). *Hidden Costs of Blight and Arson in Detroit: Evidence From a Natural Experiment in Devil's Night*. Ecological Economics, 157, 266-277. DOI: 10.1016/j.ecolecon.2018.11.009
- [39] Zahran, S.; **McElmurry, S.P.**; Kilgore, P.; Mushinski, D.; §Press, D.; Love, N.; Sadler, R.; *Swanson, M.S. (2018) *Assessment of the Legionnaires' Disease outbreak in Flint, Michigan*. Proceedings of the National Academy of Sciences, February 201718679. DOI: 10.1073/pnas.1718679115
- [38] Byrne, B.G.; McColm, S.; **McElmurry, S.P.**; Kilgore, P.E.; Sobeck, J.; Sadler, R.; Love, N.G.; *Swanson, M.S. (2018) *Prevalence of infection-competent serogroup 6 Legionella pneumophila within premise plumbing in Southeast Michigan*. mBio, 9 (1), e00016-18. DOI:10.1128/mBio.00016-18
- [37] Zahran, S.; ***McElmurry, S.P.**, Sadler, R.C. (2017) *Four Phases of the Flint Water Crisis: Evidence from Blood Lead Levels in Children*. Environmental Research. 157, 160–172. DOI: 10.1016/j.envres.2017.05.028 (NIHMSID: 880419)

- [36] Zahran, S., Iverson, T., **McElmurry, S.P.**, Weiler, S. (2017) *The Effect of Leaded Aviation Gasoline on Blood Lead in Children*. Journal of the Association of Environmental and Resource Economists. 4:2, 575-610 DOI: [10.1086/691686](https://doi.org/10.1086/691686)
- [35] *Masten, S.J.; Davies, S.H.; **McElmurry, S.P.** (2016) Flint Water Crisis: What happened and why? *Journal of American Water Works Association*. 108:12, 22-34. DOI: [10.5942/jawwa.2016.108.0195](https://doi.org/10.5942/jawwa.2016.108.0195) (NIHMSID: 845813)
- [34] [§]Pathirathna, P., [§]Siriwardhane, T., **McElmurry, S.P.**, Morgan, S.L., *Hashemi, P. (2016) *Fast voltammetry of metals at carbon-fiber microelectrodes: towards an online speciation sensor*. Analyst. 141, 6432 – 6437 DOI: [10.1039/C6AN01807F](https://doi.org/10.1039/C6AN01807F)
- [33] [§]Siriwardhane, T., [†]Sulkanen, A., [§]Pathirathna, P., [§]Tremonti, A., **McElmurry, S.P.**, *Hashemi, P. (2016) *Voltammetric Characterization of Cu(II) Complexation in Real Time*. Analytical Chemistry. 88 (15), 7603-7608. DOI: [10.1021/acs.analchem.6b01312](https://doi.org/10.1021/acs.analchem.6b01312)
- [32] Watson, S., Miller, C.J., Wilhelm, S.W., Steffen, M., Depew, D., Carmichael, W., Boyer, G.L., Murray, M., **McElmurry, S.P.**, Confesor, R., Richards, R.P., Charlton, C., Matisoff, G., Arhonditsis, G., Yerubandi, R. (2016) *Lake Erie: Sentinel of Impairment and SOS for action*. Harmful Algae. 253-219-4514. DOI: [10.1016/j.hal.2016.04.010](https://doi.org/10.1016/j.hal.2016.04.010) (PMID: 28073496)
- [31] Song, L. Li, L.; Yang, S.; Lan, J.; He, H.; **McElmurry, S.P.**; Zhao, Y. *Sulfamethoxazole, Tetracycline and Oxytetracycline and Related Antibiotic Resistance Genes in a Large-scale Landfill, China*. (2016) Science of the Total Environment, 551, 9-15. DOI: [10.1016/j.scitotenv.2016.02.007](https://doi.org/10.1016/j.scitotenv.2016.02.007)
- [30] Chambers, L.G.; Chin, Y.-P.; Filippelli, G.M.; Gardner, C.B.; Herndon, E.M.; Long, D.T.; Lyons, W.B.; Macpherson, G.L.; **McElmurry, S.P.**; McLean, C.E.; Moore, J.; Moyer, R.P.; Nezat, C.A.; Soderberg, K.; Teutsch, N.; Widom, E. (2016) *Developing the scientific framework for urban geochemistry*. Applied Geochemistry. 67,1-20 DOI: [10.1016/j.apgeochem.2016.01.005](https://doi.org/10.1016/j.apgeochem.2016.01.005)
- [29] [§]Faust, K.M., *Abraham, D.D., **McElmurry, S.P.** (2015) *Sustainability of Water and Wastewater Infrastructure in Shrinking Cities*. Public Works Management & Policy, 1-29. DOI: [10.1177/1087724X15606737](https://doi.org/10.1177/1087724X15606737)
- [28] *Harris, A., [§]Rogers, M.M., Miller, C.J., Wang, C., **McElmurry, S.P.** (2015) *Residential emissions reductions through variable timing of electricity consumption* Applied Energy. 158, 484-489 DOI: [10.1016/j.apenergy.2015.08.042](https://doi.org/10.1016/j.apenergy.2015.08.042)
- [27] Caruso, J.A., Zhang, K., Schroeck, N.J., **McElmurry, S.P.** (2015) *Petroleum Coke in the Urban Environment: A Review of Potential Health Effects*. International Journal of Environmental Research and Public Health. 12, 6218-6231; DOI: [10.3390/ijerph120606218](https://doi.org/10.3390/ijerph120606218)
- [26] [§]Zein, M., ***McElmurry, S.P.**, Kashian, D., Savolainen, P.T., Pitts, D. (2015) *Toxic effects of combined stressors on Daphnia pulex: Interactions between diazinon, 4-nonylphenol, and wastewater*. Environmental Toxicology and Chemistry. 34(5), 1145-1153. DOI: [10.1002/etc.2908](https://doi.org/10.1002/etc.2908)
- [25] *Wang, C., Miller, C.J., Nehrir, M.H., Sheppard, J.W., **McElmurry, S.P.** (2015) *A Load Profile Management Integrated Power Dispatch Using a Newton-Like Particle Swarm Optimization Method*. Water and Energy of Sustainable Computing. 8, 8-17. DOI: [10.1016/j.suscom.2014.10.001](https://doi.org/10.1016/j.suscom.2014.10.001)
- [24] [§]Alighalehbabakhani, F., [§]Abkenar, S.M.S., Jin, S.X., *Miller, C.J., Fracasso, P.T., **McElmurry, S.P.** (2015) *Comparative evaluation of three distinct energy optimization tools applied to real water network (Monroe)*. Sustainable Computing: Informatics and Systems. 8, 29-35. DOI: [10.1016/j.suscom.2014.11.001](https://doi.org/10.1016/j.suscom.2014.11.001)
- [23] [§]Abkenar, S.M.S., [§]Stanely, S.D., Chase, D.V., Miller, C.J., **McElmurry, S.P.** (2015) *Evaluation of genetic algorithms using discrete and continuous methods for pump optimization of water distribution systems*. Sustainable Computing: Informatics and Systems. 8, 18-23. DOI: [10.1016/j.suscom.2014.09.003](https://doi.org/10.1016/j.suscom.2014.09.003)
- [22] [§]Rogers, M.M., [§]Xu, G., *Miller, C.J., **McElmurry, S.P.**, Shi, W., [§]Wang, Y., Miller, S.S., Wang, C., [§]Xu, C.Z. (2015) *HERO: A Smart-Phone Application for Location Based Emissions Estimates*. Sustainable Computing: Informatics and Systems. 8, 3-7. DOI: [10.1016/j.suscom.2014.09.001](https://doi.org/10.1016/j.suscom.2014.09.001)

For complete list go to: <https://scholar.google.com/citations?user=vtHjmu8AAAAJ&hl=en>

OTHER ACADEMIC OUTPUT AND UNIVERSITY SERVICE (select, last 5 years)

- Love, N.G.; Jackson, R.; **McElmurry, S.P.** (2019) Water stays in the pipes longer in shrinking cities – a challenge for public health. The Conversation. 24 May 2019. <https://theconversation.com/water-stays-in-the-pipes-longer-in-shrinking-cities-a-challenge-for-public-health-116119>
- Love, N.G., Gebrie, G.S., Adejumo, H.A., **McElmurry, S.P.** (2019) Drinking Water Infrastructure in Shrinking and Expanding Cities: The Impact on Water Quality and Public Health. In G. Magil and J. Benedict (Eds) Cascading Challenges in the Global Water Crisis. Chapter Three (p. 23-39), Cambridge Scholars Publishing, ISBN: 978-1-5275-2447-7
- Zarb, A.R., **McElmurry, S.P.**, Moldenhauer, J.A. (2017) *Technical to Teachable: The Flint Water Crisis and the Design of Instructions for Assembling Water Sampling Kits*. In Design, User Experience, and Usability: Theory, Methodology, and Management, Springer.

- Zahran, S., Laidlaw, M.A.S., McElmurry, S.P., Filippeli, G.M., Taylor, M. (2015) Linking Source and Effect: Re-suspended Soil Lead, Air Lead, and Children's Blood Lead Levels in Detroit, Michigan. In A. Hassan (Ed) *Everyday Environmental Toxins: Children's Exposure Risks* (p. 163-181). Apple Academic Press: Waretown, NJ. ISBN: 978-1-77188-101-2
- US EPA Workshop titled Michigan Water, Public Health and Healthcare Coordination Workshop, 9/16/2019, Wayne State University, Detroit, MI (Organizer and presenter)
- US EPA Webinar titled A Critical Connection: The Water and Healthcare/Public Health Sectors Webinar - Healthcare/Public Health Sector Focus, 9/26/2019 (Presenter)
- US EPA Webinar titled A Critical Connection: The Water and Healthcare/Public Health Sectors Webinar - Water Sector Focus, 9/19/2019 (Presenter)

TEACHING AND ADVISING

Undergraduate Courses

- CE4210 – Introduction to Environmental Engineering (2014, 2015)
- CE4140 – Environmental Engineering Design (2017, 2018, 2019, 2020)
- CE5220 – Environmental Chemistry (2014, 2016)
- CE5230 – Water Supply and Wastewater Engineering (2017, 2019, 2021)
- CE5995 – Special Topics: Advanced Drinking Water Treatment (2016, 2019)

Graduate Courses

- CE 6150 – Hydrologic Analysis and Design (2015, 2018, 2020)
- PSC/CE6910 – Waste Pharmaceuticals: Environmental Impact and Management (2015)
- CE7260 – Surface Water Quality Modeling (2015)
- CE7580 – Environmental Remediation (2016)
- CE7995 – Special Topics: Advanced Drinking Water Treatment (2016, 2019)

Committee Chair of 4 Ph.D. and 4 M.S. Thesis Students

Committee Member of 15 Ph.D. and 4 M.S. Thesis Students

OTHER SERVICE

Committee Assignments

- Michigan State University Department of Civil and Environmental Engineering Professional Advisory Board (2016-current)
- Graduate Program Officer, Department Civil & Environmental Engineering (2014-2016, 2020-current)
- College of Engineering P&T Committee (2016-2019)
- Wayne State University Water Safety Committee (2018-current)
- Technical Advisory Committee, Flint, MI (2015-current)
- Great Lakes Science Advisory Board's Taking Action on Lake Erie (TAcLE) work group (2012-2013). Work resulted in the following report:

Lake Erie Ecosystem Priority | Scientific Findings and Policy: Recommendations to Reduce Nutrient Loadings and Harmful Algal Bloom, Draft Summary Report, August 2013. International Joint Commission. Available at: <http://www.ijc.org/files/tinymce/uploaded/Draft%20LEEP-Aug29Final.pdf>

Public Presentations as an Expert in Discipline

- Featured in "Flint's Deadly Water" produced by FRONTLINE, SEASON 2019: EPISODE 16; premiered September 10, 2019 on PBS. Available at <https://www.pbs.org/wgbh/frontline/film/flints-deadly-water>.
- 67TH DISTRICT COURT FOR THE COUNTY OF GENESEE. THE PEOPLE OF THE STATE OF MICHIGAN v. NICHOLAS LYON (Nov. 15, Dec. 1, 2017)
- 67TH DISTRICT COURT FOR THE COUNTY OF GENESEE. THE PEOPLE OF THE STATE OF MICHIGAN v. EDEN WELLS (Dec. 11, 12, 2017)
- Featured technical expert on *Secrets of the Earth: Mother Nature Reclaims Buildings*, a TV show that premiered on the Weather Channel on October 27, 2014
- WJBK-TV Health Works, My Fox Detroit. Interviewed regarding Pb research (~133,000 viewers), Aired June 14, 2013 <http://www.myfoxdetroit.com/video?autoStart=true&topVideoCatNo=default&clipId=8991514>
- WDET-Radio Interview discussing resuspension of Pb, Aired March 19, 2013

Proposal Review Panels

- National Institute of Environmental Health Sciences – Special Emphasis Panel
- National Institute of Environmental Health Sciences – Research to Action: Assessing and Addressing Community Exposures to Environmental Contaminants
- National Institute of Health - Social Sciences and Population Studies Study Section

- National Science Foundation - Civil, Mechanical and Manufacturing Innovation
- National Science Foundation – Chemical, Bioengineering, Environmental, and Transport Systems
- National Science Foundation - Geography and Spatial Sciences

Editorial Board Memberships

- *Toxics* (ISSN 2305-63040; Impact Factor = 3.271)

Reviewer

- *Applied Geochemistry*
- *Aquatic Geochemistry*
- *Chemosphere*
- *Desalination Water Treatment*
- *Elementa: Science of the Anthropocene*
- *Environmental Geochemistry & Health*
- *Environmental Research*
- *Environmental Science & Technology*
- *Environmental Science & Technology Letters*
- *Environmental Science: Processes & Impacts*
- *Environmental Science: Water Research & Technology*
- *Geohealth*
- *International Journal of Distributed Sensor Networks*
- *Journal of Environmental Engineering*
- *Journal of Environmental Pollution*
- *Journal of Exposure Science and Environmental Epidemiology*
- *Journal of Health and Place*
- *Landscape Architecture*
- *Photogrammetric Engineering and Remote Sensing*
- *Proceedings of the National Academy of Sciences*
- *Science of the Total Environment*
- *Sustainable Chemistry*
- *Toxics*
- *Water Science and Technology: Water Supply*



210395

RESOLUTION NO.: _____

PRESENTED: AUG 18 2021

ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT JARON HOUSTON TO THE WATER SYSTEM
ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.


WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Jaron Houston to the Water System Advisory Council (See Attached Resume).

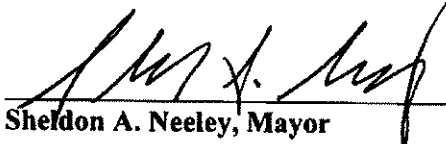
NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Jaron Houston address 2621 E. Court Street, Flint MI 48503 to serve on the Water System Advisory Council.

APPROVED AS TO FORM:



Angela Wheeler (Aug 12, 2021 09:51 EDT)
Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:



Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 08/11/2021

BID/PROPOSAL#

AGENDA ITEM TITLE: RESOLUTION TO APPOINT JARON HOUSTON TO THE WATER SYSTEM ADVISORY COUNCIL

PREPARED BY: Qiana Towns-Williams, Manager of Public Health
(Please type name and Department)

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

In July 2018, the State of Michigan's Department of Environment, Great Lakes and Energy (EGLE) established the Lead and Copper Rule (LCR) under the Michigan Safe Water Drinking Act 399. The purpose of the LCR is to minimize lead and copper in drinking water and indicates that a Water System Advisory Council (WSAC) is to be established on behalf of cities with 50,000 or more people served by its municipal water system. The WSAC is responsible for assisting with public awareness to create transparency and consumer confidence through statewide efforts of public education and action steps to ensure water quality through: water sampling, water treatment and lead service line replacement. A Council shall consist of a least five members appointed by the community supply. To be eligible for appointment to Council, an individual must have a demonstrated interest in or knowledge about lead in drinking water and its effects. At least one member must be a local resident who does not formally represent the interest of any incorporated organization.

In June 2019, the City of Flint began to establish a board for the WSAC by sending letters of interest to various community partners and members. The process of establishing the board did not see completion and was then put on hold due to a change in City administration. The open public meeting was also delayed due to the COVID-19 pandemic.

In February 2021, the Office of Public Health (OPH) sent notices of participation to public health community partners and community members and requested resumes of those individuals in order to submit an approval to Flint City Council to officially establish the Water System Advisory Council. The WSAC will be hosted by the City's OPH, who will organize and oversee the annual meeting, according to the Open Meetings Act 267. This annual meeting will inform and include the public on the City's lead and copper status, progress and next steps.

Jaron Houston, the designated appointee, is a current resident of Flint and has expressed interest and knowledge concerning lead in drinking water. Appointee's resume is attached.

CITY OF FLINT



CITY OF FLINT

(PLEASE TYPE NAME, TITLE)

Jaron Maurice Houston

2621 E Court St 810-449-4175
Flint, Michigan 48503 jaron.houston@gmail.com

Summary of Qualifications

Over 17 years of experience in education and customer service, engaging in community involvement and building rapport with families.

Work Experience

Genesee Intermediate School District

Flint, MI

Early On Service Coordinator/21st Century Team Leader

01/2018 – 3/2021

- Completed intake appointments for parents and children
- Completed assessments on children concerning their development
- Worked with parents on reaching developmental milestones
- Created lessons plans/activities for students
- Facilitated afterschool programming
- Administered medication to students if needed
- Provided support for youth and their families as we promote success

Baker College of Flint

Flint, MI

Academic Advisor

08/2016 – 10/2017

- Counseled students to help them understand their educational/vocational situations
- Reviewed transcripts to ensure that students meet graduation
- Provided students with information on such topics as college degree programs

Big Brothers Big Sisters of Greater Flint

Flint, MI

Case Manager

04/2014 – 8/2016

- Provides facilitation and delivery of all programs design components of program
- Recruit mentors to assist in encouraging and empowering juvenile offenders
- Provides support for youth and their families as we promote success

Human Investment and Development Corporation

Flint, MI

Case Manager

06/2013 - 09/2013

- Maintained documentation of compliance activities
- Filed appropriate compliance reports with regulatory agencies
- Conducted or directed the internal investigation of compliance issues

Baker College

Flint, MI

Academic Advisor

01/2011 - 6/2013

- Counseled students to help them understand their educational/vocational situations
- Reviewed transcripts to ensure that students meet graduation
- Provided students with information on such topics as college degree programs

Davenport University

Flint, MI

Advisor

05/2010 - 01/2011

- Counseled students to help them understand their educational/vocational situations
- Reviewed transcripts to ensure that students meet graduation.
- Referred students to degree programs based on interests and aptitudes

Baker College

Student Mentor/Academic Advisor

Flint, MI

07/2002-05/2010

- Counseled students to help them understand their educational/vocational situations
- Referred students to degree programs based on interests and aptitudes
- Promoted extracurricular activities such as clubs and student organizations

Education

Southwestern College

Masters in Leadership

Wichita, KS

01/2009 - 08/2011

Baker College

Bachelors of Business Administration

Bachelors of Education

Flint, MI

09/2001 - 06/2010



210396

RESOLUTION NO.: _____

PRESENTED: AUG 18 2021

ADOPTED: _____

**RESOLUTION FOR THE APPOINTMENT GINA SMITH TO THE WATER SYSTEM
ADVISORY COUNCIL**

BY THE MAYOR:

WHEREAS, pursuant to the State of Michigan's administrative rules section 325.10410(7), water supplies serving a population of 50,000 or more, and consecutive systems serving a population of 50,000 or more, shall create a water system advisory council;

WHEREAS, the council shall consist of at least five members, appointed by the community supply;

WHEREAS, the purpose of this council is to improve transparency in the City of Flint community by developing materials and advising the water system on public awareness and education efforts.

WHEREAS, to be eligible for appointment to the council, an individual shall have a demonstrated interest in or knowledge about lead in drinking water and its effects.;

WHEREAS, the council will develop plans for continuing public awareness about lead in drinking water, even when the action level is not exceeded.; review public awareness campaign materials provided by the statewide drinking water advisory council to ensure the needs and interest of the community, considering the economic and cultural diversity of its residents, are addressed; advise and consult with the water supply on the development of appropriate plans for remediation and public education to be implemented if a lead action level is exceeded; advise and consult with the water supply on efforts to replace private lead service lines at locations where the owner declined service line replacement; assist in promoting transparency of all data and documents related to lead in drinking water within the water supply service area

WHEREAS, Mayor Neeley desires to appoint Gina Smith to the Water System Advisory Council (See Attached Resume).

NOW THEREFORE BE IT RESOLVED, that Mayor Neeley hereby appoints Gina Smith, address 210 W. Flint Park Blvd Flint, MI 48505, to serve on the Water System Advisory Council.

APPROVED AS TO FORM:



Angela Wheeler, City Attorney

FOR THE CITY OF FLINT:



Sheldon A. Neeley, Mayor

APPROVED BY CITY COUNCIL:

Kate Fields, City Council President



CITY OF FLINT

RESOLUTION STAFF REVIEW FORM

TODAY'S DATE: 08/11/2021

BID/PROPOSAL#

AGENDA ITEM TITLE: RESOLUTION TO APPOINT GINA SMITH TO THE WATER SYSTEM ADVISORY COUNCIL

PREPARED BY: Qiana Towns-Williams, Manager of Public Health
(Please type name and Department)

VENDOR NAME: N/A

BACKGROUND/SUMMARY OF PROPOSED ACTION:

In July 2018, the State of Michigan's Department of Environment, Great Lakes and Energy (EGLE) established the Lead and Copper Rule (LCR) under the Michigan Safe Water Drinking Act 399.

The purpose of the LCR is to minimize lead and copper in drinking water and indicates that a Water System Advisory Council (WSAC) is to be established on behalf of cities with 50,000 or more people served by its municipal water system. The WSAC is responsible for assisting with public awareness to create transparency and consumer confidence through statewide efforts of public education and action steps to ensure water quality through: water sampling, water treatment and lead service line replacement. A Council shall consist of a least five members appointed by the community supply. To be eligible for appointment to Council, an individual must have a demonstrated interest in or knowledge about lead in drinking water and its effects. At least one member must be a local resident who does not formally represent the interest of any incorporated organization.

In June 2019, the City of Flint began to establish a board for the WSAC by sending letters of interest to various community partners and members. The process of establishing the board did not see completion and was then put on hold due to a change in City administration. The open public meeting was also delayed due to the COVID-19 pandemic.

In February 2021, the Office of Public Health (OPH) sent notices of participation to public health community partners and community members and requested resumes of those individuals in order to submit an approval to Flint City Council to officially establish the Water System Advisory Council. The WSAC will be hosted by the City's OPH, who will organize and oversee the annual meeting, according to the Open Meetings Act 267. This annual meeting will inform and include the public on the City's lead and copper status, progress and next steps.

Gina Smith, the designated appointee, is a current resident of Flint and has expressed interest and knowledge concerning lead in drinking water. Appointee's resume is attached.



CITY OF FLINT

(PLEASE TYPE NAME, TITLE)

GINA M. SMITH, MPH

210 West Flint Park Blvd.

Flint, MI 48505

Tel: +1 810 394 1996; Email: gjenkins.mph@gmail.com

Mrs. Smith seeks to reduce global health burden by increasing access to quality health care services, products and information in challenging settings. She is an experienced executive with over a decade of leadership in HIV/AIDS, reproductive health and maternal & child health projects management in Sub-Saharan Africa. She has a background in international health care settings, strategic development, business operations, and developing evidence based behavior change communication/marketing materials. In addition, she is a leader in change management, upholding internal controls and executing processes that achieve sustainable performance improvements with extensive experience with donor funds. Through demonstrated skills working with stakeholders she has been an influencer in her field leading to proven high impact results.

- | | | | |
|-------------------------|--------------------------|---------------------|-----------------------|
| •Strategic thinking | •Team leadership | •People management | •Entrepreneurship |
| •Leading change | •Results driven | •Problem solving | •Proposal development |
| •Compliance enforcement | •Supply chain management | •Program management | |

Population Services International, Washington DC, USA

Nov 2006-Present

**Senior Program & Supply Chain Manager
(March 2021-Present)**

Lead headquarter support for technical, operational, financial and administrative close out of a Global Fund malaria and a Global Fund HIV/TB project in Haiti, as well as Haiti office close out. Provide supervision of international consultants and remote supervision of the Haiti office Supply Chain Management team. Coordinate communications between Haiti team and PSI/W departments as relevant to the Global Operations (LAC, Asia & Global Fund projects) program support.

**Acting Country Representative/Chief of Party-SARAI, Society for Family Health (SFH), Zambia
(July 2019-Feb 2021)**

Provide organizational oversight of country office of ~110 employees, implement organizational vision in a continuously changing environment, Retention of high quality staff, Ensure compliance of internal controls and donor rules and regulations; Lead in proposal development and fundraising, manage government, donor and private sector relations; Oversee project implementation

Notable Achievements:

- Successful office closeout of SFH Zambia
- Surpassed USAID Sexual and Reproductive Health for All Initiative (SARAI) target to increase annual mCPR by 2%, achieving 4-6% annually.
- Successful closeout of \$5m UNITAID HIV Self-Testing Africa project with distribution of over 550,000 HIVST
- Authored two abstracts accepted to international conference ICASA 2019
- Surpassed targets for U.S. Department of Defense (DOD) for Voluntary Medical Male Circumcision (VMMC) project

Deputy Country Representative/Chief of Party-SARAI, SFH Zambia (June 2015-June 2019)

Provide oversight to human resources, administrative, operations and program teams; Develop and manage annual workplans and multiple donor budgets; Participate in board meetings; Develop and maintain relations with local authorities and implementing organizations; Manage multiple international implementing partnerships and subaward partners; Participate, and when necessary, lead program design, implementation and evaluation; Assist Country Representative in oversight of office operations

Notable Achievements:

- Facilitated the development and review of SFH Zambia strategic plans
- Increased VMMC uptake of target population using Human Centered Design approach
- Secured additional funding for USAID award Sexual and Reproductive Health for All Initiative (SARAI) increasing budget from \$11million to \$15.25 million
- Appointed as Key personnel position Chief of Party-SARAI in March 2018 by USAID
- Assisted Zambia Ministry of Health in developing and implementation of national roadmap for DMPA-SC
- Assisted South Sudan Ministry of Health with Global fund malaria grant proposal as primary beneficiary

Senior Program Manager, PSI- Washington DC (Jan 2014-June 2015)

Assume direct responsibility for the management support provided to Mali, Niger, Burkina Faso, Cote d'Ivoire and Togo country programs in the West and Central Africa Department; Advise Regional Director, Deputy Regional Director on strategic country issues; Mentor other program managers; Prepare donor budgets and monitor their implementation; Building, maintaining, or strengthening donor relations; Monitor contract compliance and adherence to internal and external reporting requirements; Provide technical assistance travel and proposal development, identifying new capture opportunities, program design, capacity building to achieve programmatic objectives.

Notable Achievements:

- Assisted in securing \$90 million follow-on grant under the Global Fund AIDS, Tuberculosis and Malaria for as principle recipient for Malaria under Zero Cash Policy conditions for Mali
- Led development design of New Funding Model, Modular Framework, for the Global Fund AIDS, Tuberculosis and Malaria with Mali used as a pilot country
- HQ Focal point for USAID Procurement and Supply Chain Management contract with JSI for mass and routine LLIN campaigns in Mali including storage and distribution
- Supervised and mentored a team composed of two Associate Program Managers and a Financial Analyst
- Assisted in development of winning proposal for largest USAID WASH project, Sanitation

Service Delivery, \$15.8m, implemented in Cote d'Ivoire, Ghana and Benin

Operations Technical Advisor, Mali (Feb 2011-Jan 2014)

Maintain operational standards and supervise finance, administration and IT for a staff of 89 employees in Mali while ensuring donor compliance and sustainability; Assist Country Representative in strategic planning initiatives and implementation of project objectives, Advise, Train, support, mentor staff and local partner organizations; Assist Country Representative in management of external relations and fundraising efforts with donors, governments, international and local NGOs, and commercial entities

Notable Achievements:

- *Implemented \$90 million malaria grant under the Global Fund AIDS, Tuberculosis and Malaria for as principle recipient under Zero Cash Policy conditions for the procuring, storage and distribution of LLINs, ACTs and RDTs.*
- *Provided technical assistance in areas of budgeting, monitoring of program expenditures and overall project management based on an annual budget of \$30 million for social marketing of health products and services*
- *Lead the strategic planning process and monitoring of performance*

Program Manager & Associate Program Manager- West and Central Africa, Washington, DC

Nov 2006 – Feb 2011

Advised country program teams on institutional development, strategic planning, budget tracking, contract compliance, systems strengthening, proposal development, fundraising, security, donor reporting and administrative oversight; Assisted in program management of integrated social marketing programs for HIV/AIDS, reproductive health and maternal & child health in Burkina Faso, Democratic Republic of Congo, Mali, Cameroon, C.A.R, Haiti, Rwanda and Burundi with combined annual budgets exceeding \$50 million.

Notable Achievements:

- *Supervised two associate program managers and one financial analyst*
- *Assisted Regional Director in Country Annual Operating Budgeting process for region*
- *Promoted to Program Manager in May 2008*
- *Selected as lead country grant writer for Mali and Cameroon Global Fund malaria proposal*
- *Conducted minimum standards assessments and strategic plan development*
- *Train Francophone countries on use of Disability adjusted life years (DALYs) to measure health impact*

Peace Corps-Master's International Program

Sept 2003 – Oct 2006

BCC Assistant/Rural Health Program Coordinator PSI-Togo (Jan 2005 – Oct 2006)

Served as a liaison between Peace Corps Volunteers in Togo and PSI to increase public-private collaboration and BCC outreach; Assisted in the project implementation, monitoring deliverables and evaluation of health interventions nationwide; Assisted CR in preparation of donor reports, annual reports, quarterly audits and project propositions; and execution of presentations; and monitoring and evaluation

Notable Achievements:

- *Assisted in the development and adaptation of educational materials for behavior change communication & marketing*
- *Managed Global Fund HIV/AIDS rural prevention program, supervising activities of three NGO's subcontracted to manage 2,975 trained community health workers covering 595 villages*
- *Published monthly Peace Corps Volunteer newsletter*

Community Health & AIDS Prevention Educator, Togo (Sept 2003 – Jan 2005)

Work at grassroots level to respond to the HIV epidemic and supporting the healthy and positive development of the host country with a focus on building youth friendly health services and reducing stigma and discrimination at the community level in order to improve access and retention for HIV care and treatment services. Assist youth in schools and across their communities, improving sexual and reproductive health education, economic and nutritional resilience, and adoption of healthy lifestyles.

Notable Achievements

- *Created and trained 6 in-school youth clubs and provided technical assistance in HIV/AIDS prevention, reproductive health and life skills*
- *Provided technical assistance and support to Peace Corps Volunteers and community based organizations*
- *Assisted host government health agents with public mobilization, child vaccination campaigns, infant growth monitoring, health sensitizations and home visits*

Tulane University School of Public Health & Tropical Medicine

Jan 2003 – Aug 2003

Epidemiology Researcher, Delgado STD Clinic, New Orleans, LA

Recruited male urethritis partner treatment study participants; collected and analyzed data; and advised patients on STD prevention/treatment

EDUCATION

MPH, Master's International Student Program, Tulane University School of Public Health & Tropical Medicine, New Orleans, LA.

B.S., Anthropology-Zoology, University of Michigan, Ann Arbor, MI

ADDITIONAL TRAINING

USAID Proposal Writing: From RFA to Proposal Workshop, Inside NGO, Bangkok, Thailand, 2016.

Competing for USAID Contracts in 2007, Center for Public Management, Washington, DC, 2007

USAID Administrative Compliance Requirements, Center for Public Management, Washington, DC, 2007

LANGUAGES

English (native SS/SR), French (fluent 4S/4R)