

UNC CH Funding Source: Account 20170 12593 221010 KGENX

September 21, 2018

Dear Dr. Detlef Knappe:

On behalf of the University of North Carolina at Chapel Hill's North Carolina Policy Collaboratory (Collaboratory), I am pleased to inform you and your collaborating colleagues have been allocated research funding of \$15,000 to carry out the research proposal entitled, "Effect of Hurricane Florence on Concentrations of Per- and Polyfluoroalkyl Substances in North Carolina Drinking Water Sources." The period of performance for this work will begin on September 1, 2018 and conclude by June 30, 2019.

Please note that these are non-reverting funds received by the Collaboratory through the matching grant established by the North Carolina General Assembly (NCGA). Per section 10.4 of Session Law 2017-57, ***"Availability of these matching funds shall not revert but shall continue to be available as provided by this section, and any funds disbursed as a match to the Collaboratory shall not revert and shall continue to remain available."***

By accepting this funding, you agree to the following:

Acknowledgment

All published papers, abstracts, and presentations supported by this funding must acknowledge the support of the Collaboratory.

Accountability and Reporting

Funding for this project must be managed in accordance with state law. The Collaboratory will follow the same guidelines on cost allowability as outlined in Office of Management and Budget Uniform Guidance (2 CFR 200). In addition, the following costs are unallowable, meaning funds awarded by the Collaboratory cannot be used for:

- Meals, catering, and any other food or beverage costs for planned activities/events (this prohibition does not apply to meal expenses incurred during official travel in support of this project)
- Computer equipment, unless purchased solely for a specific project
- Overhead expenses

The funds allocated pursuant to this letter will only be used for the purposes of conducting research as outlined in your proposal (which is incorporated into this document as Appendix II) submitted to the Collaboratory, including:

- Collection of water samples in North Carolina watersheds impacted by Hurricane Florence, including the Neuse, Cape Fear, Lumber, and Catawba River basins. In addition, samples from two private wells near the Chemours site will be sampled.

- At select locations in the Cape Fear River basin, sampling will be conducted on a daily basis, to develop a time series of PFAS concentrations from the time the river crests until it recedes to below flood stage.
- Samples will be analyzed by both LC-QToF and LC-QqQ instruments to identify PFAS and to determine concentrations of more than 30 PFAS.
- Results will be compared to baseline conditions of samples that were collected prior to the hurricane as well as to samples that will be collected approximately one and two months after cresting of the Cape Fear River at Fayetteville.

Payment Schedule and Financial Reports

- The goal for transfer of funds to support the project in the amount of \$15,000 will be made no later than October 12, 2018 if this agreement is signed and returned to the Collaboratory within a timely fashion.
- Your unit (Department of Civil, Construction, and Environmental Engineering; North Carolina State University) will keep complete records of the receipt and disbursement of all funds under this project.
- Your unit will be required to submit financial reports to Laurie Farrar (laurie.farrar@unc.edu) with UNC Finance and Administration by December 31, 2018 to demonstrate the progress of spending funds.
- **All funds being transferred under this agreement are non-reverting** and should be managed in an appropriate manner, although the scope of this study is intended to be complete by June 30, 2018 (the end of the FY 2018-19).

Quarterly Expense Reporting

Because of the nature of these funds (i.e., NCGA matching grant), the Collaboratory is required to report quarterly to the North Carolina Office of State Budget and Management in Raleigh. Therefore, your unit will be required to track the expense categories indicated below and report back to the Collaboratory no later than the last day of each quarter (i.e., March 31, June 30, September 30, and December 31). As the PI, it is your responsibility to tender required reporting to the Collaboratory by these deadlines.

Expense	Total Amount (this quarter only)	Total amount (this calendar yr, cumulative)	Total amount (since award, cumulative)
Employee expenses (e.g. program related staffing)			
Service and contract expenses (e.g. utilities, telephone, lease related expenses)			
Goods (e.g., supplies and equipment) expenses			
Administration Expenses (e.g., project management)			
Other Expenses (e.g., related charges not assigned above and described by recipient)			

Progress Reports

- A preliminary progress report will be due to the Collaboratory by October 26, 2019
- Staff of the NC Policy Collaboratory may meet periodically with you to monitor and assess progress of the research.

Final Report

A summary of the research and activities for the project is due to the Collaboratory no later than June 30, 2019. As part of the final report, please provide information that includes how many personnel were paid at any level from this award (e.g., faculty, staff, post-docs, graduate students, undergraduate students, etc.) and their academic affiliation.

Presentation

You may be asked to participate in public events, (e.g. stakeholder meetings, convening of academic partners, etc.) during 2018-2020 to describe your team's work and share findings.

Prior to the commencement of funding, a signed copy of this letter confirming your acceptance of the funding and willingness to comply with the terms as outlined above must be received.

Please direct all questions regarding this funding to Jeff Warren at jeff.warren@unc.edu.

On behalf of the Collaboratory, I want to thank you for your work on this important project.

Sincerely,



Brad Ives, Executive Director
North Carolina Policy Collaboratory

Acknowledgment:

Signature:  9/26/18
NC State University Signatory Date

Appendix I

Budget Allocation

Non-personnel Costs: \$15,000*

Total: \$15,000*

**Personnel costs are outlined in the budget worksheet in Appendix II but not included above because the Collaboratory will not be paying personnel fringe prior to transferring the award to NCSU (the Collaboratory only pays fringe prior to funding transfer for units within UNCCH). Therefore, for the purposes of the transfer between UNCCH and NCSU, all funds are considered non-personnel and NCSU shall bear the responsibility of paying fringe and other personnel costs as depicted in Appendix II.*

Appendix II

Effect of Hurricane Florence on Concentrations of Per- and Polyfluoroalkyl Substances in North Carolina Drinking Water Sources

PI: Detlef Knappe, Professor, NC State University (knappe@ncsu.edu)

Hurricane Florence resulted in record flooding in several North Carolina watersheds. Runoff from the intense rainfall associated with the storm likely dislodged per- and polyfluoroalkyl substances (PFAS) from PFAS source areas, such as firefighting training areas, fields receiving wastewater-derived biosolids, and PFAS-contaminated soils on and near the Chemours manufacturing plant near Fayetteville, NC. In a team effort with NC river keepers, utilities, and affected residents, we will collect water samples in North Carolina watersheds impacted by Hurricane Florence, including the Neuse, Cape Fear, Lumber, and Catawba River basins. In addition, samples from two private wells near the Chemours site will be sampled. At select locations in the Cape Fear River basin, sampling will be conducted on a daily basis, to develop a time series of PFAS concentrations from the time the river crests until it recedes to below flood stage. Samples will be analyzed by both LC-QToF and LC-QqQ instruments to identify PFAS and to determine concentrations of more than 30 PFAS. Results will be compared to baseline conditions of samples that were collected prior to the hurricane as well as to samples that will be collected approximately one and two months after cresting of the Cape Fear River at Fayetteville. Results will be shared with residents of impacted communities, NC river keepers, the NC Department of Environmental Quality, and NC legislators.

Budget:

Personnel: \$6,43 (Grad student 2 months @ \$5,434 and \$1,000 for Detlef)

Supplies: \$7,000

Travel for sample collection: \$786

Lab/instrument use fees: \$780

TOTAL: \$15,000

UNC CH Funding Source: Account 20170 12593 221010 KGENX

September 21, 2018

Dear Dr. Angela Harris:

On behalf of the University of North Carolina at Chapel Hill's North Carolina Policy Collaboratory (Collaboratory), I am pleased to inform you and your collaborating colleagues have been allocated research funding of \$10,000 to carry out the research proposal entitled, "Evaluating the extent and sources of microbial contamination in water bodies impacted by Hurricane Florence." The period of performance for this work will begin on September 1, 2018 and conclude by June 30, 2019.

Please note that these are non-reverting funds received by the Collaboratory through the matching grant established by the North Carolina General Assembly (NCGA). Per section 10.4 of Session Law 2017-57, ***"Availability of these matching funds shall not revert but shall continue to be available as provided by this section, and any funds disbursed as a match to the Collaboratory shall not revert and shall continue to remain available."***

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Acknowledgment

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Accountability and Reporting

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- Meals, catering, and any other food or beverage costs for planned activities/events (this prohibition does not apply to meal expenses incurred during official travel in support of this project)
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The funds allocated pursuant to this letter will only be used for the purposes of conducting research as outlined in your proposal (which is incorporated into this document as Appendix II) submitted to the Collaboratory, including:

- Collection of surface water and ground water samples in impacted river basins, including the Neuse, Cape Fear, and Lumber Rivers.
- Sample processing using advanced molecular microbial source tracking assays that allow for the identification of the sources of fecal contamination (i.e., human, swine, or poultry).

Payment Schedule and Financial Reports

- The goal for transfer of funds to support the project in the amount of \$10,000 will be made no later than October 12, 2018 if this agreement is signed and returned to the Collaboratory within a timely fashion.
- Your unit (Department of Civil, Construction, and Environmental Engineering; North Carolina State University) will keep complete records of the receipt and disbursement of all funds under this project.
- Your unit will be required to submit financial reports to Laurie Farrar (laurie.farrar@unc.edu) with UNC Finance and Administration by December 31, 2018 to demonstrate the progress of spending funds.
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Quarterly Expense Reporting

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- Staff of the NC Policy Collaboratory may meet periodically with you to monitor and assess progress of the research.

Final Report

A summary of the research and activities for the project is due to the Collaboratory no later than June 30, 2019. As part of the final report, please provide information that includes how many

personnel were paid at any level from this award (e.g., faculty, staff, post-docs, graduate students, undergraduate students, etc.) and their academic affiliation.

Presentation

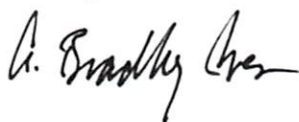
You may be asked to participate in public events, (e.g. stakeholder meetings, convening of academic partners, etc.) during 2018-2020 to describe your team's work and share findings.

Prior to the commencement of funding, a signed copy of this letter confirming your acceptance of the funding and willingness to comply with the terms as outlined above must be received.

Please direct all questions regarding this funding to Jeff Warren at jeff.warren@unc.edu.


On behalf of the Collaboratory, I want to thank you for your work on this important project.

Sincerely,



Brad Ives, Executive Director
North Carolina Policy Collaboratory

Acknowledgment:

Signature:  _____ Date: 9/26/18

NC State University representative

Appendix I

Budget Allocation

Non-personnel Costs: \$10,000*

Total: \$10,000*

**Personnel costs are outlined in the budget worksheet in Appendix II but not included above because the Collaboratory will not be paying personnel fringe prior to transferring the award to NCSU (the Collaboratory only pays fringe prior to funding transfer for units within UNCCH). Therefore, for the purposes of the transfer between UNCCH and NCSU, all funds are considered non-personnel and NCSU shall bear the responsibility of paying fringe and other personnel costs as depicted in Appendix II.*

Appendix II

Evaluating the extent and sources of microbial contamination in water bodies impacted by Hurricane Florence

Hurricane Florence has devastated North Carolina, and flood waters have reached unprecedented levels. Flooded areas of the state are also the sites of dense concentrations of hog and poultry farms, where fecal waste is often stored in lagoons or sprayed onto fields. In Johnston County, untreated wastewater has also been dumped into tributaries as a result of the extreme rainfall. Working with a team of people, we will collect surface water and ground water samples in impacted river basins, including the Neuse, Cape Fear, and Lumber Rivers. Samples will be processed using advanced molecular microbial source tracking assays that allow for the identification of the sources of fecal contamination (i.e., human, swine, or poultry). This will shed light on the extent of microbial contamination in flooded areas, and provide insight into which sources are significant contributors to the contamination. Results will shed light on the risks associated with flood waters, and will also help inform strategies for improved response to extreme flooding events and to prevent contamination in the future.

Budget:

Supplies: \$6000

Personnel: \$4000 (Grad student @ \$2k and non-faculty staff @ \$2k)

Estimated Timeline:

9/19/18-9/28/18- Sample collection and initial sample processing

9/28/18-12/15/18- DNA extraction and processing samples using MST assays

12/15/18-2/15/18- Data analysis and writing up of results for sharing with key stakeholders