

# EMERGING SCHOLARS

ENVIRONMENTAL HEALTH SCIENCES ACADEMY







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## AWARDS CEREMONY

July 28, 2017

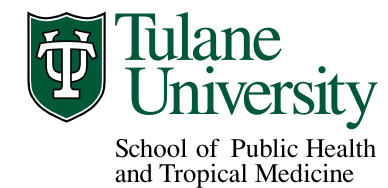
9:00 - 10:00 Introduction of Scholars, Faculty and Mentors  
Presentation of Certificates and Awards

10:00 - 11:00 Interactive Poster Session

11:00 - 12:00 Lunch

## MISSION

The mission of the Emerging Scholars Environmental Health Sciences Academy is to provide a safe and rigorous academic environment for students interested in environmental health science research and issues essential to life-long learning, commitment, and leadership.







## TAYLOR MILLER

*Emerging Scholar*

Taylor Miller attended International High School of New Orleans where she graduated in May, 2017. Miller completed a research project in *Psychological Distress during Pregnancy* with the support and mentorship of Dr. Maureen Lichtveld and Cecilia Alcala, doctoral student. She will attend the University of Louisiana at Lafayette where she will major in psychology, with a concentration in forensic psychology. Miller wants to pursue a master's of law degree with a concentration in human rights law upon completion of her undergraduate work.

**“This program has helped me gain more respect for environmental health and an understanding of how I affect the environment on a daily basis.”**

**– Taylor Miller**



## CECILIA ALCALA

*Mentor*

Cecilia Sara Alcala is a doctoral student at the Tulane University School of Public Health and Tropical Medicine studying in the Global Environmental Health Sciences Department. She attended Drexel University Dornsife School of Public Health in Philadelphia, PA, where she received her master's in public health with a concentration in environmental health and global health. Alcala received her bachelor's in psychology/public health from Agnes Scott College in Decatur, GA. Prior to attending Tulane University; she was an Association of Schools and Programs of Public Health (ASPPH) Environmental Health Fellow which was hosted by the National Center of Environmental Assessment (NCEA) at the US Environmental Protection Agency. Alcala is a student counselor, chair of the Student and New Researcher Committee, and the co-chair of the Diversity Committee of the International Society of Exposure Science. Additionally, she is a member of the Board of Directors and the chair of the Alumni Engagement Committee of the Drexel Dornsife Public Health Alumni Network. Alcala hopes to study occupational pesticide exposure among pregnant women in the Caribbean.

## MAUREEN LICHTVELD, MD, MPH

*Professor and Chair*



Dr. Maureen Lichtveld, a member of the National Academy of Medicine, has over 35 years of experience in environmental public health and currently is Professor and Chair, Department of Global Environmental Health Sciences, Tulane University, School of Public Health and Tropical Medicine. She holds an endowed chair in environmental policy and is Associate Director, Population Sciences, Louisiana Cancer Research Consortium. Beginning in 1987, she served as one of the highest-ranking Centers for Disease Control and Prevention Agency for Toxic Substances and Disease Registry environmental health scientists engaged in designing research tools and protocols guiding national environmental health studies in communities living near hazardous waste sites and science-driven policies, often accompanied by congressional testimonies. Her national and global research focuses on environmentally-induced disease, health disparities, environmental health policy, disaster preparedness, public health systems, and community resilience. Lichtveld has a track record in community-based participatory research with a special emphasis on examining the impact of chemical and non-chemical stressors on communities facing environmental health threats, disasters and health disparities. As Director of the Center for Gulf Coast Environmental Health Research, Leadership, and Strategic Initiatives, Lichtveld serves as Principal Investigator of several Gulf Coast-associated environmental health research and capacity building projects ascertaining the potential impact of the Gulf of Mexico Oil spill.

Lichtveld is a member of the National Advisory Environmental Health Sciences Council of the Institutes of Health's National Institute of Environmental Health Sciences; the U.S. EPA Scientific Advisory Board; the National Academy of Sciences-Institute of Medicine Roundtable on Environmental Health Sciences, Research, and Medicine; and a member of the Health Disparities Subcommittee of the Advisory Committee to the Director of the CDC. She was elected as Chair of the Editorial Board of the American Journal of Public Health and serves as the current President of the Hispanic Serving Health Professions Schools. Lichtveld was inducted in the Johns Hopkins University Society of Scholars, honored as CDC's Environmental Health Scientist of the Year, and twice named Woman of the Year by the City of New Orleans.



## RICARDO SALAS

*Emerging Scholar*

Ricardo Salas attends Haynes Academy for Advanced Studies where he will be in the 12th Grade this upcoming school year. Salas completed a research project in *Occurrence and Persistence of Somatic and F-Specific Coliphages in a Subtropical Lake: Implications for Water Quality Monitoring* with the support and mentorship of Dr. Tiong Aw and Emily Cooksey, graduate student. He wants to attend the University of Washington where he wants to pursue a pre-med track and major in biomedical engineering. Salas wants to attend the University of Washington School of Medicine to pursue a career as a cardiologist upon completion of college.

“Being a Tulane Emerging Scholar has brought me so many great experiences and memories. Working directly with incredible mentors has allowed me to learn so much about environmental science and public health. I will carry this knowledge with me through all of my college career and I can never be thankful enough for the great opportunities this program has offered me.”

– Ricardo Salas



## EMILY COOKSEY

*Mentor*

Emily Cooksey is a graduate student in the Global Environmental Health Science program at Tulane University School of Public Health and Tropical Medicine. She received her bachelor’s degree in biology with a focus in biomedical science and microscopy from Central Michigan University in 2015. Her undergraduate research was focused on confocal analysis of tau-expressing Dictyostelium cells and Drosophila neurons. Emily is currently working in Dr. Aw’s research lab focusing on waterborne viruses in Lake Pontchartrain. She plans to pursue a career working with urban water quality issues.

## DR. TIONG AW

*Assistant Professor*

Tiong Aw is a public health microbiologist with diverse training background including environmental engineering, microbiology, virology and bioinformatics. His research interests lie at the intersection of molecular microbial ecology, water quality and human/environmental health. His current research program focuses on data-driven discovery and the integration of biological big data towards the study of microbiome in natural and engineered water systems and their impacts on our environment and health. His other areas of expertise include rapid detection of waterborne and foodborne pathogens by advanced molecular techniques, fate and transport of viruses in urban water catchments and microbial source tracking. He is keen to bring scientific discovery and translational research to the water industry. He teaches environmental health microbiology. Prior to joining the faculty at Tulane, he was a research associate at the Michigan State University. He received his PhD in environmental microbiology from the Nanyang Technological University, Singapore and his BEng in environmental engineering from University of Technology Malaysia.





## SEMENDRA SHERCHAN, PHD

*Assistant Professor*

Semendra Sherchan received his bachelor's and master's degrees from Georgia College and his doctoral degree in soil, water and environmental science from the University of Arizona. He is a registered environmental health specialist (REHS). His research program addresses critical issues at the intersection of water quality, human health and environmental protection. Due to climate change and population growth, maintaining adequate water quality and quantity is becoming extremely difficult. While advances in water treatment have led to safe potable water, emerging contaminants continue to challenge the water supply. His specific research interests include water pollution, mechanisms of pathogen inactivation, advanced detection techniques for emerging contaminants, microbial source tracking, risk assessment, water reuse and challenges associated with safe drinking water, sanitation and hygiene.

Dr. Semendra Sherchan served as faculty mentor for the following students, Alexandra Maag, Jermaine Hill, and Nameera Islam.

## ALEXANDRA MAAG

*Emerging Scholar*



Alexandra Maag attended Chalmette High School where she graduated in May, 2017. Maag completed a research project in *Microbial Source Tracking in New Orleans East* with the support and mentorship of Dr. Semendra Sherchan and Kevin Caton, graduate student. She will attend Tulane University where she will major in biomedical engineering for pre-med. Maag wants to pursue a medical degree upon completion of her undergraduate work.

**“This program has allowed me to experience a wide variety of new things and learn plenty of new skills. I look forward to using the knowledge and skills I learned to further help me in whatever I may pursue in the future.”**

*– Alexandra Maag*

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## KEVIN CATON

*Mentor*



Kevin Caton received a bachelor's degree in biology from the University of Maine, after which he worked as a medical technologist in Portland, Maine. He is pursuing a master's in public health in the Global Environmental Health Sciences Department with a focus on water quality at Tulane University School of Public Health and Tropical Medicine. Caton first became interested in water quality aspects of public health through his experiences at McCormick Hospital in Chiang Mai, Thailand, while participating in the WASH program and other community outreach programs. He hopes to apply what he has learned in Dr. Sherchan's lab to improve water quality and access both domestically and internationally.





## JERMAINE HILL

*Emerging Scholar*

Jermaine Hill attends Sophie B. Wright Charter High School where he will be in the 12th Grade this upcoming school year. Hill completed a research project in *Detection of Fecal Indicator Bacteria and Naegleria Fowleri In Sediments Using Droplet Digital PCR* with the support and mentorship of Dr. Semendra Sherchan and Jennifer LaMori, undergraduate student. He wants to attend Loyola University where he will major in computer science. Hill wants to attend graduate school to pursue a career as a video game coder upon completion of college.

**“I am very lucky and grateful for being a part of the Emerging Scholars. Not many high school students get to do this!”**

*– Jermaine Hill*

## NAMEERA ISLAM

*Emerging Scholar*

Nameera Islam attends Haynes Academy for Advanced Studies where she will be in the 12th Grade this upcoming school year. Islam completed a research project in *Molecular Detection of Legionella, Mycobacteria and Naegleria Fowleri* in drinking tap water with the support and mentorship of Dr. Semendra Sherchan and Kinjal Shah, graduate student. She wants to attend Tulane University and is undecided on a major. Islam wants to attend graduate school upon completion of college.

**“I enjoyed the hands on experience in the lab and also the field trips and documentaries that showed us different aspects of public health I had not considered before.”**

*– Nameera Islam*



## JENNIFER LAMORI

*Mentor*

Jennifer LaMori is an undergraduate student studying public health at Tulane University. She is a rising senior, and has been accepted into Tulane’s Graduate School of Public Health with a concentration in international health and development. LaMori has worked in Dr. Samendra Sherchan’s lab for over a year studying water quality and testing for fecal bacteria in Lake Pontchartrain. In the future, she aspires to work internationally and aid in global disaster management or crises management.

## KINJAL SHAH

*Mentor*

Kinjal Shah received a bachelor’s degree in dental surgery from SDM College of Dental Sciences, India. After graduating, she worked as a dentist focusing on improving oral hygiene of patients from rural India. While working in rural areas, she realized the importance of environmental factors on human health leading her to pursue a master’s in public health in the Global Environmental Health Sciences Department at Tulane University. Currently, she is collaborating with the US Environmental Protection Agency on a project investigating E.coli contamination in New Orleans East waterways. The results will help guide the community on how to improve water quality. She aspires to work in the field of environmental sustainability in the future.





## ARDEN LEBLANC

*Emerging Scholar*

Arden LeBlanc attended Chalmette High School where he graduated in May, 2017. LeBlanc completed a research project in *The Mutagenesis of Benzo[a]pyrene* with the support and mentorship of Dr. Jeffrey Wickliffe and Rebecca Lichtler, doctoral student. He will attend Howard University where he will major in biology, with a concentration in anatomy and physiology. LeBlanc wants to pursue a graduate degree in prosthetics and orthotics upon completion of his undergraduate work.

“The Emerging Scholars Program has opened my eyes to a branch of science where amazingly passionate people can study details invisible to the naked eye and determine how those details can affect the entire human species. The program was informative and highly explanatory, but most of all, it was exciting. I am entirely grateful to have taken part in the program and highly recommend it to any interested scholars.

– Arden LeBlanc



## REBECCA LICHTLER

*Mentor*

Rebecca Lichtler received a bachelor’s degree from Tulane University in 2016 in Public Health. As an undergraduate, she worked to develop an assay for comparing enzymatic activity levels in the livers of obese and normal mice. In the fall of 2016, she began her research as a doctoral student at Tulane University School of Public Health and Tropical Medicine in the Department of Global Environmental Health Sciences, focusing on environmental toxicology.

## JEFFREY WICKLIFFE, PHD

*Associate Professor*

Dr. Jeffrey K. Wickliffe received his PhD from Texas Tech University where he looked at how radiation from the Chernobyl Nuclear Power Plant explosion affects the DNA and immune system of mice from the contaminated environment. He completed postdoctoral training as a NIH toxicology fellow at the University of Texas Medical Branch in Galveston, Texas. Dr. Wickliffe looks at how genetic differences in people affect their sensitivity to environmental and occupational chemicals. He also studies how chemicals work together to cause disease and how certain types of exposures, such as during pregnancy, increase the risk of disease. As an Associate Professor at Tulane University in the Department of Global Environmental Health Sciences he is currently studying the effects of the oil spill on peoples’ health. He also teaches courses in toxicology and human health risk assessment.





## MICHAEL MCCASKILL, PHD, MPH

*Assistant Professor*

Michael L. McCaskill received his PhD in toxicology from Florida A & M University, and his MPH in industrial hygiene from the University of South Carolina. Prior to joining Tulane University, he was a post-doctoral fellow in the Pulmonary, Critical Care, Sleep and Allergy Division and faculty in the College of Public Health at the University of Nebraska Medical Center in Omaha, Nebraska. His doctoral training in toxicology, professional experience as a public health professional, and post-doctoral training in pulmonary and critical care have uniquely prepared him to elucidate the complex association between xenobiotic exposure, chronic ethanol consumption, and immune response. As PI for NIH/NHLBI and State of Louisiana funded research projects, he currently investigates xenobiotic-induced vitamin D dysmetabolism and is interested in anti-microbial peptide production as a measurement of respiratory health. He conducts in vivo and in-vitro studies focused on quantifying ethanol-mediated lung pathology, function, and metabolizing gene expression. His laboratory has studied and published in-vivo data displaying phase 1 metabolizing disturbances in CYP27B1 function, and ethanol-mediated vitamin D dysmetabolism (McCaskill 2015). McCaskill's laboratory research group has also recently observed a correlation between vitamin D deficiency and painful crisis events in sickle cell disease patients. Although he utilizes in-vitro and in-vivo models to elucidate biochemical activity of genes and non-coding proteins, his feels his experience public health practice has provided an additional value to the organism in which these biochemicals reside.

**Michael McCaskill, PhD served as faculty mentor for Alma Adoue and Alicia Clark.**

## ALMA ADOUE

*Emerging Scholar*



Alma Adoue attends Haynes Academy of Advanced Studies where she will be in the 12th Grade this upcoming school year. Adoue completed a research project in *The Affect of Subchronic Alcohol Exposure on Levels of the Antimicrobial Peptide LL-37 in Pulmonary Epithelial Cells* with the support and mentorship of Dr. Michael McCaskill, Taylor Burns, research laboratory technician, and Eshani Rughani, graduate student. She wants to attend the University of Florida where she will major in either environmental science or dietetics.

**“I believe that the Emerging Scholars program has given me the skills and confidence to work competently in a laboratory setting and further pursue the sciences. I am profoundly grateful to have been given this opportunity to learn from and work with such wonderful faculty, mentors, and classmates.”**

*– Alma Adoue*

## ESHANI RUGHANI

*Mentor*



Eshani Rughani received a bachelor's degree in dental surgery from Rajasthan, India. She worked as a Dentist, primarily addressing the rural and underserved population in India as she focused on advancements in dental treatments to increase awareness for oral hygiene. Currently she is pursuing a master's in public health in the Global Environmental Health Sciences Department at Tulane University School of Public Health & Tropical Medicine. She is working as a mentor on an environmental research project with Dr Michael McCaskill in his lab, which investigates the impact of ethanol exposure on human pulmonary cells, interacts with Vitamin D, and the related human immune response. Rughani is interested in exploring industrial hygiene, and occupational health and safety, and its impact on health hazards on industrial workers and work-safety for her future career.





## ALICIA CLARK

*Emerging Scholar*

Alicia Clark attends John Ehret High School, where she will be in the 12th grade this upcoming school year. Clark completed a research project in *The Effects of Antimicrobial Peptide LL-37 Levels in Week Six's Subchronic Exposed Pulmonary Epithelial Cells* with the support and mentorship of Dr. Michael McCaskill, Taylor Burns, research laboratory technician, and Eshani Rughani, graduate student. She wants to attend Xavier University where she will major in biology/pre-med. Clark wants to attend graduate school to pursue a career as an orthodontist upon completion of college.

**“Naeem Calloway once said, ‘Sometimes the smallest step in the right direction, ends up being the biggest step of your life. Tiptoe if you must, but take the step.’ If this is so, then it’s possible that attending this program, was that step for me. The Emerging Scholars has taught me so many things I would have never known during this time of my life, if not given this opportunity.”**

**– Alicia Clark**



## TAYLOR BURNS

*Mentor*

Taylor Burns received a bachelor’s degree in environmental science with a concentration in biological sciences from Loyola University in 2015. After graduation she completed a fellowship at Loyola University’s Institute for Environmental Communication and co-founded a company where she strategizes solutions addressing environmental socioeconomic challenges. She assists the development of research techniques with the guidance of Dr. Michael McCaskill on xenobiotic-induced metabolic disturbances, such as ethanol-mediated vitamin D deficiency and DNA damage at Tulane University, in the Global Environmental Health Sciences Department.

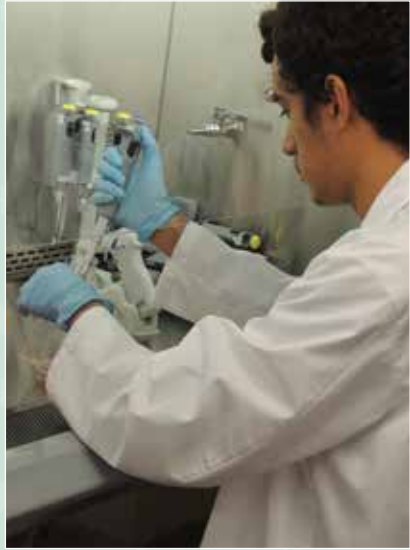
## LYNETTE DUPRE’ PERRAULT, MED SP. ED., MED ADM.

*Program Director,  
Assistant Director of Training & Educational Leadership*



Lynette Dupre’ Perrault received her bachelor’s degree from Loyola University in communications/sociology, and her master’s degrees in special education and educational leadership from the University of New Orleans. Her work in education spans over 17 years in public and charter schools and five years at the higher education level. Perrault promotes teacher efficacy and student achievement through her instructional leadership endeavors. Promoting high expectations for students is the core of her professional educational career. Perrault believes that all students can learn if provided enriching instructional programs taught by knowledgeable educators committed to educational excellence. She currently serves as the Assistant Director of Training and Educational Leadership in the Department of Global Environmental Health Sciences, with Tulane University School of Public Health and Tropical Medicine. Perrault is a PhD Candidate with the University of New Orleans in the Department of Educational Leadership, Counseling, and Foundations.









Emerging Scholars Environmental Health Sciences Academy  
Tulane University School of Public Health & Tropical Medicine  
Global Environmental Health Sciences

1440 Canal St., Suite 2100 | New Orleans, LA 70112

504-988-0961 | [gulfoastenvironmentalhealth.com](http://gulfoastenvironmentalhealth.com) | [tulaneemergingscholars.com](http://tulaneemergingscholars.com)