MARIELLE REMILLARD

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EDUCATION

Harvard University
PhD Candidate in Environmental Engineering **2018**

The Johns Hopkins University, Baltimore, MD
M.S. in Environmental Engineering **2011**
Thesis: Small but Deadly? On the Ecotoxicity of Silver Nanoparticles and Carbon Nanotubes

Austin College, Sherman, TX
B.A. Honors in Math, summa cum laude **2009**
Minor: Biology
Honors Thesis: Pricing 'Aubun Contracts
Study Abroad: American University in Dubai, Dubai, UAE, William Jefferson Clinton Scholar 2008
January Term in Laos, Cambodia, and Vietnam 2008

RESEARCH EXPERIENCE

Harvard University, Cambridge, MA
PhD Student **August 2013 – Present**
Developed methods to fabricate carbon nanotube-based capacitive deionization (CDI) electrodes, looked at ion selectivity and operational design for CDI

Geo-watersheds Scientific, Fairbanks, AK
Research Hydrologist **August 2012 – August 2013**
Contributed to pre-impact assessment for proposed Susitna-Watana Dam

Los Alamos National Laboratory, Los Alamos, NM
Post Masters, D-3 **August 2011 – August 2012**
Worked on method validation in PCR laboratory

The Johns Hopkins University, Baltimore, MD
Masters Student, Visiting Scholar **August 2010 – July 2011**
Analyzed carbon nanotube (CNT) toxicity using Microtox®, looked at biofilm development of *P. aeruginosa* on CNT polymer surfaces

Sandia National Laboratory, Sandia, CA
Department of Homeland Security Student Intern **Summer 2010**
Evaluated the biological compatibility of digital micro-fluidic devices for use in pathogen detection.

Geo-watershed Scientific, LLC, Fairbanks, AK
Student Intern **August 2008-August 2009**
Analyzed arctic watersheds, reviewed green-housing solutions for cold climates, installed weather stations on Alaska's North Slope

Austin College, Sherman, TX
Math Tutor **August 2007-May 2008**
Tutored undergraduate mathematics, predominantly calculus

Colorado State University, Fort Collins, CO
National Science Foundation Research Experience for Undergraduates (NSF-REU) **Summer 2007**
Modeled the hydraulic dynamics of the Rio Grande using ArcGIS and Hec-Ras, prepared report for the New Mexico Bureau of Reclamation

Austin College, Sherman TX
Summer Biology Scholar **Summer 2006**
Explored a gene transcription pathway as possible cause of bi-polar disorder

PROFESSIONAL SERVICE

Engineers Without Borders , Boston Professional Chapter
Mentor **April 2016 – Present**

SustainUS: US Youth for Sustainable Development
Citizen Science Coordinator **August 2010 – November 2013**
Organized annual science paper competition for high school, college, and graduate students to present original research at the United Nations. Expanded program to two new conferences, established a partnership with *Consiliance* sustainable development journal, co-authored winning grant application for the Captain Planet Foundation.
Youth Delegate **August 2009 – December 2011**
Represented youth at the 15th, 16th, 17th and 19th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change. Coordinated policy strategies at COP 16 and COP 17.

Engineers Without Borders , The Johns Hopkins University, Baltimore, MD
Project Design **August 2009-May 2010**
Helped to design a solar powered water pumping system for a school in rural Guatemala.

WaterCan Walk for Water, Sherman, TX
Event Chair **2007, 2008**
Organized an event to raise awareness of global water issues and raise funds to help citizens in Eastern Africa gain access to clean water and better health. Raised over $1000 dollars and had more than 100 participants and volunteers in 2008.

Model United Nations, Austin College, Sherman, TX
UNEP, General Assembly **August 2007- May 2008**

International Aid Club, American University in Dubai, Dubai, UAE
Member **Fall 2008**
Raised funds for a teacher education initiative in Cameroon.

AWARDS

Stonington Endowment Graduate Fellowships of Environmental Science and Engineering	February 2015
James Mills Peirce Fellowship, Harvard University	September 2013
Department of Homeland Security Fellowship, Johns Hopkins	August 2009 – May 2011
Dean Scholarship, Austin College	August 2005 – May 2009
William Jefferson Clinton Scholarship, American University in Dubai	August 2008 – December 2008
Summer Biology Scholarship, Austin College	June 2006 – July 2006
Ambassador Award, American University in Dubai	December 2008
Comcast Leaders and Achievers Scholarship	May 2005
Joel Prichard Memorial Scholarship	May 2005
CWEA Student Paper Competition, 2nd Place	May 2011

PEER REVIEWED PUBLICATIONS

Robert A Hoyt, E. Marielle Remillard, Ekin D. Cubuk, Chad D. Vecitis, and Efthimios Kaxiras. (2016) Polyiodide-Doped Graphene. *J. Phys. Chem. C.* 121 (1):609–615. doi: 10.1021/acs.jpcc.6b11653

E. Marielle Remillard, Qiaoying Zhang, Sobambo Sosina, Zach Branson, Tirthankar Dasgupta, Chad D. Vecitis. *(2016)* Electric-field alignment of aqueous multi-walled carbon nanotubes on microporous substrates. *Carbon*. 100: 578–589. doi:10.1016/j.carbon.2016.01.024

MM Sidor, SM Spencer, K Dzirasa, PK Parekh, KM Tye, MR Warden, RN Arey, JF Enwright III, JPR Jacobsen, S Kumar, EM Remillrd, MG Caron, K Deisseroth and CA McClung. (2015) Daytime spikes in dopaminergic activity drive rapid mood-cycling in mice. *Molecular Psychiatry. 20:1406–1419; doi:10.1038/mp.2014.167;*

EM Remillard, Taylor LK, Layshock J, Van Cuyk S, Omberg KM. (2013) Detecting laboratory DNA contamination using polyester-rayon wipes: A method validation study. *J Microbiol Methods.* 92(3):358-65. doi: 10.1016/j.mimet.2013.01.003.

TECHNICAL REPORTS AND NON-PEER REVIEWED PAPERS

EM Remillard. (2011) "Small but Deadly? On the Ecotoxicity of Silver Nanoparticles and Carbon Nanotubes" Master's Thesis, Johns Hopkins University

EM Remillard (2011) "Small but Deadly? On the Ecotoxicity of Carbon Nanotubes" 2nd place Chesapeake Water Environment Association student paper competition (modified version of master's thesis)

Kim, H, MS Bartsch, RF Renzi, GL Pezzola, EM Remillard, EA Kittlaus, J He, KD Patel. (2011) "Digital Microfluidic Hub for Automated Nucleic Acid Sample Preparation." 14th International conference on Miniatruized Systems for Chemistry and Life Sciences

EM Remillard (2009) "Pricing 'Aubun Contracts" Honor's Thesis, Austin College

Kane, DL, D White, M Lilly, H Toniolo, S Berezovskya, W Schnabel, E Youcha, J Derry, R Gieck, R Paetzold, E Trochim, M Remillard, R Busey, K Holland (2009) "Meteorological and Hydrological Data and Analysis Report for Bullen Point and Foothills Projects: 2006-2008," Water and Enviromental Research Center, University of Alaska Fairbanks, Report No. INE/WERC 08.18.

PRESENTATIONS

"Toward Cross-Flow Capacitive Deionization"
New England Graduate Student Water Symposium, Amherst, MA 2016

"Far, Far Away"
Presentation on the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), Los Alamos National Laboratory, Los Alamos, NM 2012

"Small but Deadly? On the Ecotoxicity of Carbon Nanotubes"
Tri-Associations Conference, Ocean City, Maryland 2011

"Hot, hot, hot!"
Presentation at Johns Hopkins University on the 16th Conference of the Parties to the UNFCCC 2010

"To Copenhagen and Beyond: Explorations in Climate Change Policy"
Guest speaker for Think Green lecture series at Austin College 2009
Presentation at Johns Hopkins University 2009

LANGUAGES

English—native language
French—four semesters, intermediate proficiency
Arabic—two semesters, basic exposure

MEMBERSHIPS

Phi Beta Kappa
Pi Delta Phi (National French Honor Society)
American Water Resources Association (2008-2009)
New England Water Environment Association (2016-Present)