Marella Schammel

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EDUCATION

University of Southern California, Los Angeles, CA **Expected: May 2025**

Ph.D., Environmental Engineering

Advisor: Dr. Daniel L. McCurry

Towson University, Towson, MD **May 2020**

B.S., Chemistry, Cum Laude, Departmental Honors

Thesis: *Investigating Electrophilic Aromatic Halogenation in Synthetic and in Natural Waters*

Advisor: Dr. John D. Sivey

TECHNICAL SKILLS

- Instrumentation: GC-MS, GC-ECD, HPLC-DAD, UPLC-qTOF, IC, NC Analyzer, UV-vis, NMR, IR, and Ion-Selective Electrodes
- Computer programs: Sigma Plot, Scientist 3.0, Visual Minteq, SpinWorks, and Microsoft Excel
- Lab skills: Thin-Layer Chromatography, Column Chromatography, Kinetic Batch Reactors

RESEARCH EXPERIENCE

Towson University Chemistry Department

Research Lab Manager **January 2019- May 2020**

Undergraduate Research Assistant **May 2017- August 2020**

- Analyze composition of natural water samples on IC, NC Analyzer, and Ion-Selective Electrodes
- Perform kinetic experiments to examine bromination kinetics in natural waters
- Optimize methods and run samples on GC-MS
- Perform weekly lab upkeep duties
- *Faculty Mentor: Dr. John Sivey*

TEACHING EXPERIENCE

Towson University Chemistry Department

Teaching Assistant **September 2018- May 2020**

Towson University Academic Achievement Center

Tutor **September 2017- May 2020**

ACADEMIC AWARDS AND HONORS

National/International Honors

5. National Science Foundation Graduate Research Fellow (**2020**)
4. American Chemical Society Undergraduate Student Award in Environmental Chemistry (**2019**) [one award per department at a university]
3. Barry Goldwater Scholarship (**2019**) [awarded to ~500 students nationwide annually]

2. American Water Works Association SUEZ/Vernon D. Lucy II Scholarship (**2018**) [one award per year in North America; first awardee at Towson University]
1. National Merit Scholarship Corporation James E. Casey Scholarship (**2016**)

Local/Regional Honors

9. Ronald and Linda Raspet Summer Research Fellowship (**2019**) [$5,000 stipend to support eight-week summer research project]
8. Greater Washington Institute of Chemists Student Award (**Spring 2019**)
7. Dean's List Towson University (**Fall 2016, 2017, 2018, 2019; Spring 2017, 2018**)
6. Towson University Student Associates of the American Chemical Society Scholarship (**2018)**
5. James R. Hoffa Memorial Scholarship Fund (**2016**)
4. Towson University Alan and Eileen Wingrove Endowment for Chemistry Scholars (**2016**)
3. Towson University Honors College Scholarship (**2016**)
2. Towson University Provost Scholarship (**2016**)
1. Honors College of Towson University Member (**2016-present**)

FUNDED GRANTS

1. Jess & Mildred Fisher College of Science and Mathematics Research Grant: $490 **September 2017**
   Project Title: Bromination and chlorination kinetics in natural waters: How useful are data collected in "clean" systems?
2. Undergraduate Research and Creative Inquiry Committee Travel Grant: $300 **March 2018**
   Project Title: Bromination and chlorination kinetics in natural waters: How useful are data collected in "clean" systems?
3. Jess & Mildred Fisher College of Science and Mathematics Research Grant: $500 **September 2018**
   Project Title: Comparing the bromination kinetics of dimethenamid in natural and in synthetic waters
4. Towson University Undergraduate Research Club Travel Grant: $125 **March 2019**
   Project Title: Comparing bromination and chlorination kinetics of the herbicide dimethenamid in natural and in synthetic waters
5. Undergraduate Research and Creative Inquiry Committee Travel Grant: $150 **March 2019**
   Project Title: Comparing bromination and chlorination kinetics of the herbicide dimethenamid in natural and in synthetic waters
6. ACS Maryland Section Undergraduate Travel Grant: $500 **March 2019**
   Project Title: Comparing bromination and chlorination kinetics of the herbicide dimethenamid in natural and in synthetic waters
7. Jess & Mildred Fisher College of Science and Mathematics Research Grant: $700 **September 2019**
   Project Title: Formation of trihalomethanes via halogenation of natural organic matter precursors
8. Undergraduate Research and Creative Inquiry Committee Research Impact Award: $1,000 **December 2019**
   Project Title: Formation of trihalomethanes via halogenation of natural organic matter precursors

PEER-REVIEWED PUBLICATIONS

3. **Schammel, M.H**.; Martin-Culet, K.R.; Taggart, G.A.; Sivey, J.D. Structural effects on the rate and selectivity of alkyl- and alkoxybenzene bromination in aqueous solution. *In preparation*.

2. Dias, R.P.; **Schammel, M.H.**; Reber, K.P.; Sivey, J.D. Applications of 1,3,5-trimethoxybenzene as a derivatizing agent for quantifying free chlorine, free bromine, bromamines, and bromide in aqueous systems. *Anal. Methods*. **2019**. *11* (43), 5521-5532. (Link to article)

   Recognition Information
   This article was selected to feature on the front cover of the journal issue.

1. Lau, S.S.; Dias, R.P.; Martin-Culet, K.R.; Race, N.A.; **Schammel, M.H.**; Reber, K.P.; Roberts, A.L.; Sivey, J.D. 1,3,5-Trimethoxybenzene (TMB) as a new quencher for preserving redox-labile disinfection byproducts and for quantifying free chlorine and free bromine. *Environ. Sci.: Water Res. Technol.* **2018**. *4* (7), 887-1070. (Link to article)

   Recognition Information
   This article was featured in the Best Papers from 2018 in the *Environmental Science* family of journals. It was designated as a HOT paper (top 10%) by the editors of the journal and selected to feature on the front cover of the journal issue.

PRESENTATIONS

Presenters are underlined.

6. **Schammel, M.**; Martin-Culet, K.; Taggart, G.; Sivey, J. Steric and electronic effects on reaction rates of substituted benzenes with often overlooked bromine species. Gulf Coast Undergraduate Research Symposium, Houston, TX (2019). *Invited presentation.*

   Award Information
   Awarded "Outstanding Presentation in Chemical Transformations"

5. Sivey, J.; Driessen, O.; **Schammel, M.**; Fitzgibbon, T.; Niedzwiecki, M.; Swanson, T.; Bickley, M.; Alexander II, G.; Dias, R.; Victor, D.; Jaffe, M.; Martin-Culet, K.; Taggart, G.; Race, N.; Reber, K. Chemistry and consequences of BrCl and other highly electrophilic halogenating agents in disinfected waters. Gordon Research Conference on Water Disinfection, Byproducts and Health, South Hadley, MA (2019). *Invited presentation*.

4. **Schammel, M.H.**; Swanson, T.L.; Dias, R.P.; Sivey, J.D. Comparing the bromination and chlorination kinetics of the herbicide dimethenamid in natural and in synthetic waters. Poster. ACS 257th National Meeting (ENVR Division), Orlando, FL (2019).

3. **Schammel, M.H.**; Swanson, T.L.; Dias, R.P.; Sivey, J.D. Comparing the bromination and chlorination kinetics of the herbicide dimethenamid in natural and in synthetic waters. Poster. Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland-Baltimore County, Baltimore, MD (2018).

   Award Information
   First place poster presentation, Chemical Sciences Division, Undergraduate Research Symposium in the Chemical and Biological Sciences

2. Swanson, T.L.; **Schammel, M.H.**; Sivey, J.D. Exploring the bromination kinetics of anisole and salicylic acid in natural waters. Poster. ACS 255th National Meeting (CHED Division), New Orleans, LA (2018).

1. **Schammel, M.H.**; Swanson, T.L.; Dias, R.P.; Sivey, J.D. Bromination and chlorination kinetics in natural waters: How useful are data collected in "clean" systems?. Poster. ACS 255th National Meeting (CHED Division), New Orleans, LA (2018).

EXTRACURRICULAR AND LEADERSHIP ACTIVITIES

Fisher College of Science and Mathematics College Council, Towson University
Undergraduate Student Representative **September 2019- May 2020**

Student Affiliates of the American Chemical Society, Towson University
President **May 2019- May 2020**
Vice President **May 2018- May 2019**
Member **August 2017- May 2020**

Undergraduate Research Club, Towson University
Committee Chair – Research Support **September 2018- May 2019**
Member **April 2018- May 2020**

Honors College of Towson University
Member **August 2016- May 2020**

COMMUNITY SERVICE

K-12 Educational Outreach Facilitator, *The Mathematics of Color and Light* discovery-based, interdisciplinary learning activity and promoting of STEM careers, Patapsco High School (March 2018, 2019).

Blood Drive Coordinator, Plan and organize blood drive and recruit donors with American Red Cross, (July 2016, 2017).

PROFESSIONAL MEMBERSHIPS

American Chemical Society (Division of Environmental Chemistry) *since 2017*
American Water Works Association (Chesapeake Section) *since 2017*