

TRENTON M. PETERS-CLARKE

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EDUCATION

UNIVERSITY OF WISCONSIN-MADISON, Madison, WI

PhD. Chemistry (in progress)

Joshua J. Coon Research Group

Jun 2018 – Present

GPA: 3.58/4.00

UNIVERSITY OF OREGON, Eugene, OR

B.S. with Honors in Biochemistry and Molecular Biology (double major)

Thesis: *Increasing the efficiency of a biotin-streptavidin pull down for investigation of Pt(II)-protein interactions*

Sep 2013 – Jun 2017

GPA: 3.54/4.00

WORK EXPERIENCE

Joshua J. Coon Laboratories, Madison, WI

Genomic Science Trainee

Nov 2018 – Present

- Developed and implemented high resolution mass spectrometry (MS)-based techniques to characterize the sequence and modification profiles of peptides, intact proteins, and nucleic acids
- Presented independent and collaborative research to professionals at Thermo Fisher via weekly conference calls
- Mentored a talented undergraduate student in her first research experience. Her efforts translated into a submitted publication, for which she has second authorship.

United States Gypsum Corporation (USG), Chicago, IL

Analytical Chemist

Jan 2018 – Jun 2018

- Independently tested, analyzed and reported on USG products, innovations and competitor products using techniques such as **GC/MS**, Thermal Desorption (TD), FT-IR, Ion Chromatography (IC), HPLC, and acid insoluble fraction analysis with XRD
- Performed Total Hydrocarbon and **formaldehyde emissions testing** and analysis on USG building material products
- Attended a LC/MS and Gel Permeation Chromatography (GPC) “Master Class” hosted by Agilent
- Received training on techniques such as ICP/MS, XRF, and XRD

Victoria DeRose and Ken Prehoda Biological Chemistry Laboratories, Eugene, OR

Ronald E. McNair Research Scholar

Sep 2015 – Jan 2017

- Independently optimized a biotin-streptavidin protein pull-down via the 1,3-dipolar cycloaddition, or **click reaction**
- Identified protein targets of the chemotherapeutic cisplatin within *S. cerevisiae*, **improving yield of prior pull-down tenfold**
- Presented findings at the **2017 McNair Scholars Research Symposium**
- Produced a research proposal to study **phospholipid organization** in *D. melanogaster* and its effect on cell polarity
- Purified proteins through sonication, centrifugation, and immunoprecipitation and FPLC
- Dissected *Drosophila* and used antibody-tagging to monitor **protein co-localization** at the larval stage

MedImmune, LLC., Gaithersburg, MD

Antibody Discovery and Protein Engineering Intern

Jun 2015 – Aug 2015

- Individually developed and assessed methods to improve **antibody discovery of complex membrane proteins** (G protein-coupled receptor, transporter, and tight junction protein) by phage display
- Collected and interpreted data from techniques such as PCR, DNA sequencing, Western blot, and Octet Analysis
- Presented work at a Protein Science group meeting and the **2015 MedImmune Summer Poster Symposium**
- One of five interns (of 1,700 nationwide) awarded the **Future Scientist Scholarship** based on research synopsis

Bayer Crop Science, Inc., Brooks, OR

Phytopathology Researcher

Jun 2014 – Sep 2014

- Contributed to multiple projects pertaining to the **disease resistance** of onion and carrot vegetable seed
- Inoculated strains of carrot and onion crops with various pathogens and documented the pathogen's effects
- Performed research in multiple greenhouse settings, in field plots and in the laboratory

David Tyler Organometallics Chemistry Laboratory, Eugene, OR

Undergraduate Researcher

Nov 2013 – Jun 2014

- Coordinated lab research efforts to study the effects of **nickel-plated catalysts on anti-Markovnikov** complexes
- Developed proficient skills with air-free techniques (Schlenk) and purification techniques such as distillation, column chromatography, recrystallization, sublimation, and extraction

- Acquired adept skills for characterization techniques such as IR, UV-Vis, and NMR spectroscopy, GC, and LCMS-MS

University of Oregon

Sep 2014 – Jun 2016

Student Ambassador

- Able to express all values and history of the University of Oregon accurately and succinctly
- Lead groups of prospective students and their families on tours of campus, often students' first point of contact with Oregon
- Recruited prospective students via student panels, off-site receptions, phone calls, and open house events

SELECTED PRESENTATIONS AND PUBLICATIONS

1. **TM Peters-Clarke**, Q Quan, DR Brademan, AS Hebert, MS Westphall, and JJ Coon. *Ribonucleic Acid Sequence Characterization by Negative Electron Transfer Dissociation (NETD) Mass Spectrometry*. (submitted to *Analytical Chemistry*)
2. **TM Peters-Clarke**, KL Schauer, NM Riley, JM Lodge, MS Westphall, and JJ Coon. *Robust Hollow-Core Fiber Implementation of Activated Ion-Electron Transfer Dissociation (AI-ETD) and Kinetic Characterization*. (in preparation)
3. NM Riley*, **TM Peters-Clarke***, C Mullen, SJ Kregel, JEP Syka, MS Westphall, and JJ Coon. *Negative Electron Transfer Dissociation using a Front-End Glow Discharge Source*. (in preparation)
4. **TM Peters-Clarke**, BJ Anderson, JM Lodge, DR Brademan, KL Schauer, MS Westphall, and JJ Coon. *Characterization of Activated Ion-Electron Transfer Dissociation (AI-ETD) Reaction Kinetics*. Morgridge Institute Scientific Advisory Board Meeting, June 2019, Madison, WI.
5. **TM Peters-Clarke**, JM Lodge, DR Brademan, KL Schauer, MS Westphall, and JJ Coon. *Characterization of Activated Ion-Electron Transfer Dissociation (AI-ETD) Reaction Kinetics*. Proceedings of the 67th ASMS Conference on Mass Spectrometry and Allied Topics, June 2019, Atlanta, GA.
6. **TM Peters-Clarke**, BJ Anderson, JM Lodge, DR Brademan, KL Schauer, MS Westphall, and JJ Coon. *Characterization of Activated Ion-Electron Transfer Dissociation (AI-ETD) Reaction Kinetics*. Biology of Genomes Meeting, May 2019, Cold Spring Harbor, NY.
7. **TM Peters-Clarke**, RM Cunningham, and VJ DeRose. *Improving the Efficiency of a Biotin-Streptavidin Protein Pulldown for Investigation of Pt(II)-Protein Interactions*. 2017 McNair Scholars Research Symposium, May 2017, Eugene, OR.
8. **TM Peters-Clarke**, ZT Britton. MedImmune 2015 Summer Intern Poster Symposium, August 2015, Gaithersburg, MD.

*Co-first authors

SELECTED AWARDS AND FELLOWSHIPS

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| Genomic Sciences Predoctoral Traineeship (T32)..... | UW-Madison (2019 - 2021) |
| Graduate Student Faculty Liaison Committee (GSFLC) Outreach Scholarship..... | UW-Madison (2019) |
| Catalyst Mentoring Scholarship..... | UW-Madison (2019) |
| Student Research Travel Grant (via UW-Madison Office of Diversity, Inclusion, and Funding)..... | UW-Madison (2019) |
| Pei Wang Fellowship..... | UW-Madison (2018) |
| Ronald E. McNair Post-Baccalaureate Scholarship..... | U. of Oregon (2015 – 2017) |

SELECTED LEADERSHIP AND OUTREACH

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| Mentorship of undergraduate student Qiuwen Quan..... | Jan 2019 – Present |
| Catalyst Mentorship Program, <i>mentor</i> | Aug 2018 – Present |
| St. Jude Hero for the Chicago Marathon and Half-Marathon..... | 2018 – Present |
| Junior Science Café, <i>mentor</i> | May 2018 – Present |
| Chemistry Opportunities Program (ChOPs), <i>mentee and mentor</i> | Sep 2016 - Present |
| North American Mass Spectrometry Summer School, <i>volunteer presenter</i> | July 2018 & July 2019 |
| Madison Country Day School STEAM Fair, <i>volunteer presenter</i> | May 2019 |
| University of Wisconsin-Madison Chemistry Teaching Assistant..... | Aug 2019 – Dec 2019 |
| Toastmasters, University of Oregon and USG Chapters..... | Sep 2014 – Jun 2018 |
| Student Affiliates of the American Chemical Society (SAACS), <i>Vice President</i> | Sep 2014 – Jun 2017 |
| University of Oregon Cross Country and Track & Field and Cycling Teams, <i>Team Captain</i> | Sep 2013 – Jun 2017 |
| Adopt a School (Page Elementary Springfield, OR), <i>organizer and mentor</i> | Sep 2013 – Jun 2017 |
| Delta Tau Delta Fraternity, <i>Community Service Chair</i> | Dec 2013 – Jun 2017 |

SKILLS

Laboratory Skills: Mass spectrometry, Liquid and Gas Chromatography, U/V-Vis, NMR, FT-IR spectroscopy, DNA Sequencing,

Cell Culture, Western Blot, Fluorescence Microscopy

Programming: C#, R, Python, Perl, SQL

Languages: French (conversant)