

Marta K. Maroń

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RESEARCH INTERESTS

My primary research interests are on the development and implementation of undergraduate curriculum in technical writing. Communication skills through written form for chemistry students are fundamentally important to their transformation from novice to expert chemists. However, many students who can successfully complete the undergraduate chemistry curriculum are not able to effectively construct and communicate scientific meaning in written form. The main focus of my work has been on developing a science writing scaffold using a progressive approach to improve student writing skills. The integration of the practice of writing journal style documents, which follow the standards and guidelines of the American Chemical Society, with peer- and TA-review, and revision has been progressively applied to three laboratory courses: Analytical Chemistry, Physical Chemistry Laboratory: Quantum Mechanics, and Instrumental Analysis. The central goals of my work are to create a framework for students so that they can improve their abilities in science writing and our understanding of how students progress toward autonomy in their writing.

EDUCATION

University of Colorado

Ph. D., Chemistry

Boulder, CO
2011

DePaul University

B.S., Chemistry (Major) and Mathematical Science (Minor)

Chicago, IL
2006

TEACHING EXPERIENCE

Assistant Professor C/T

Instructor

Department of Chemistry, University of Colorado, Denver, CO

2015 — *present*
2011 — 2015

Primary responsibilities include the development of curricula and experimental exercises for the upper division laboratories: Analytical Chemistry, Instrumental Analysis, and Physical Chemistry: Molecular Structure. Additionally, I am responsible for the presentation of recitation materials, day-to-day operations of the laboratory (i.e., set-up of the experimental exercises, maintaining laboratory supplies, maintaining instrumentation, chemical waste treatment, etc.), grading student work, and mentoring and supervision of undergraduate and graduate teaching assistants.

Lecturer for Foundations for General Chemistry, General Chemistry I and II, Instrumental Analysis, Practical Applications of Spectroscopy, and Environmental Chemistry, in which my duties include the development of the curriculum for each course, administration of lectures, and grading student work.

Supervising Instructor for Undergraduate and Graduate Teaching Assistants

Department of Chemistry, University of Colorado, Denver, CO

2011 — *present*

Trained and mentored undergraduate and graduate teaching assistants. Developed a vigorous training program, Teaching Assistant Boot-Camp, to overcome the challenges of incorporating teaching assistants into introductory and upper division chemistry laboratory courses. With an emphasis of departmental protocols, laboratory safety procedures, experimental exercises, and teaching and presentation of materials. Additionally, great efforts were made to unify grading practices, uniformity between laboratory sections, and organization of teaching assistant weekly documents and handouts.

Chemistry Instructor

University of Colorado, Upward Bound Program, University of Colorado, Boulder, CO

2009 – 2010

The Upward Bound program was developed to motivate and support students from disadvantaged backgrounds by supplementing their existing education and preparing them for academic success at all educational levels. The program at the University of Colorado Boulder specifically targets Native American students that live on or around Native American Reservations.

My duties as lecturer included the development of chemistry curriculum at the high school level, administration of lectures, and grading student work. Additionally, I supervised and mentored undergraduate learning assistants.

Graduate Teaching Assistant

Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO

2006 – 2011

Duties included the presentation of recitation lectures and supervision of undergraduates during laboratory sessions for General Chemistry I and II and Physical Chemistry I and II.

Undergraduate Teaching Assistant

Department of Chemistry, DePaul University, Chicago, IL

2003 – 2006

Duties included the preparation of the laboratory and supervision of undergraduates during laboratory sessions for General Chemistry I, II, and III, Analytical Chemistry, Organic Chemistry I, II, and II, and Physical Chemistry I, II, and III.

RESEARCH EXPERIENCE**Graduate Research Assistant**

Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO

Under the supervision of Veronica Vaida

Sunlight Initiated Photochemical Production of High-Energy Compounds from Environmental Targets

2006 – 2011

Graduate Research Assistant

Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO

Under the supervision of Robert Parson

Undergraduate Laboratory Experiments in Relation to Student Conceptual Understanding

2008 – 2011

Graduate Research Assistant

Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO

Under the supervision of J. Mathias Weber

Transforming Upper-Division Physical Chemistry Teaching Based on Education Research

2010 – 2011

Undergraduate Research Assistant

Department of Chemistry, DePaul University, Chicago, IL

Under the supervision of Richard F. Niedziela

Characterization of Optical Properties of Model Multi-Component Organic Aerosols

2004 – 2006

SERVICE

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| Chemistry Curriculum Committee (CCC) Department of Chemistry, University of Colorado, Denver, CO Faculty Representative; CCC facilitates communication amongst the chemistry faculty to synchronize the chemistry course curricula with the learning objectives and standards of both the Chemistry Department and the University of Colorado Denver. | 2013 — <i>present</i> |
| General Chemistry Faculty Committee (GCFC) Department of Chemistry, University of Colorado, Denver, CO Chair, 2012/2013 and 2013/2014; GCFC facilitates communication amongst the faculty who teach General Chemistry I and II lectures and those that supervise the laboratories to synchronize course curriculum, standards, and materials (i.e., textbooks, homework, exams, etc.). | 2012 — <i>present</i> |
| University of Colorado Denver Association of Lectures and Instructors (UCDALI) University of Colorado, Denver, CO Secretary; Prepared executive committee meeting minutes. Member at Large; Attended executive meetings, assisted executive committee members as needed, and participated in planning of UCDALI functions. | 2015 — <i>present</i> 2012 — 2015 |
| Chemistry Club Faculty Advisor Department of Chemistry, University of Colorado, Denver, CO | 2012 — <i>present</i> |
| Awards Committee (AC) Department of Chemistry, University of Colorado, Denver, CO Faculty Representative; AC reviews student applications for Chemistry Department scholarships and reviews and nominates faculty and staff for College of Liberal Arts and Sciences awards. | 2011 — <i>present</i> |

CONTINUING PROFESSIONAL DEVELOPMENT

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| cCWCS Workshop on Distance Learning and Hybrid Teaching Atlanta, Georgia | April 16-19, 2015 |
| cCWCS Workshop on Computational and Theoretical Chemistry Westminster College, Salt Lake City, Utah | June 22-27, 2014 |

FELLOWSHIPS AND AWARDS

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| President's Teaching and Learning Collaborative (PTLC), \$1,550 University of Colorado <i>Development of a Chemistry Writing Assessment Tool</i> | 2015 |
| Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS) National Science Foundation (NSF) <i>Distance Learning and Hybrid Teaching</i> | 2015 |
| College of Liberal Arts and Sciences Non-Tenure Track Faculty Grant, \$500 University of Colorado, Denver, CO <i>A Progressive Approach to Improving Undergraduate Science Writing Through Chemistry Laboratory Courses</i> | 2014 |
| Faculty Development Grant, \$200 University of Colorado, Denver, CO <i>Inclusion of Department LO's into Spring 2014 Syllabus</i> | 2014 |
| Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS) National Science Foundation (NSF) <i>Computational and Theoretical Chemistry</i> | 2014 |

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| ACS Chemistry Ambassador American Chemical Society | 2014 |
| Faculty Development Grant, \$10,000 University of Colorado, Denver, CO <i>Professional Development for Chemistry Teaching Assistants</i> | 2013 |
| Capital Equipment Laboratory Fund, \$12,935 University of Colorado, Denver, CO <i>Micro-Volume NMR Spectrophotometer for Organic and Physical Chemistry Laboratories</i> <i>Micro-Volume UV-Vis Spectrophotometer and Full-Spectrum Fluorospectrometer for Analytical Chemistry and Biophysical Chemistry Laboratories</i> | 2012 |
| Capital Equipment Laboratory Fund, \$11,100 University of Colorado, Denver, CO <i>Benchtop pH Meters for the Honors General Chemistry and Analytical Chemistry Laboratories</i> | 2011 |
| Marian Sharrah Graduate Fellowship Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO | 2011 |
| Merck Index Award Department of Chemistry, DePaul University, Chicago, IL | 2006 |
| College of Liberal Arts and Sciences Undergraduate Research Assistant Program DePaul University, Chicago, IL | 2005 |
| College of Liberal Arts and Sciences Undergraduate Summer Research Grant | 2004 |

CONFERENCES AND SEMINARS

Maroń, M. K. "A Progressive Approach to Improving Undergraduate Science Writing Through Laboratory Courses" BCCE 2014, Grand Valley State University, Allendale, MI 49401, August 4, 2014

Maroń, M. K. "A Progressive Approach to Improving Undergraduate Science Writing Through Laboratory Courses" MSLE, University of Colorado, Denver, CO, April 1, 2014.

Crocker, P. B., Fishback, V., and Maroń, M. K. "Development of a Teaching Assistant Training Boot-Camp" MSLE, University of Colorado, Denver, CO, February 5, 2013.

Maroń, M. K. "Helping Undergraduate Students Develop Their Ability to Communicate in Written Form" Department of Chemistry, Adams State University, Alamosa, CO, November 2, 2012.

Axson, J., Maroń, M. K., and Vaida, V. "Atmospheric Consequences of the Hydration in Gas Phase of Aldehydes and Ketones" American Geophysical Union 2009 Joint Assembly - The meeting of the Americas, December 13–17, 2010.

PUBLICATIONS

Maroń, M. K., Takahashi, K., Shoemaker, R., Skodje, R. T., and Vaida, V. "Hydration of Pyruvic Acid to its Geminal-Diol, 2,2-Dihydroxypropanoic Acids, in a Water-Restricted Environment." *Chemical Physical Letters*, **513**, 184-190 (2011).

Maroń, M. K., Shultz, M. J., and Vaida, V. "Characterization of the Nitric Acid-Water Complex in the Infrared and Near-Infrared Region at Ambient Temperatures in Carbon Tetrachloride" *Chemical Physical Letters*, **473**, 268-273 (2009).

McGinty, S. M., Kapala*, M. K., and Niedziela, R. F. "Mid-Infrared Optical Constants for Oleic Acid and Optical Properties of Model Oleic Acid/Water Aerosols" *Physical Chemistry Chemical Physics*, **11**, 7998-8004 (2009).

*Decree for change of name from Kapala to Maroń on May 6, 2011.