University of Cincinnati, Department of Chemistry

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**Anna Donnell**

Née Daigle

**Skills**

* Exceptional written and verbal communication skills and public speaking with scientific colleagues and the general public
* Strong problem-solving and analytical skills
* Successful management of diverse groups of people
* Mentoring and training experience
* Proven leadership and organizational abilities in the laboratory setting, student organizations, and professional organizations
* Excellent time management and task management skills
* Statistics and Quantitative Analysis

**Education**

Doctoral candidate in Analytical Chemistry under the direction of Joseph A. Caruso, Department of Chemistry, University of Cincinnati, Cincinnati, OH; Aug 2010-Apr 2015 (expected)

B.A. in Chemistry (American Chemical Society certified major), Saint Anselm College, Manchester, NH; Sept 2006-May 2010

**Professional Experience**

Teaching Assistant:

Analytical Instrumental Lab; responsible for the training and operation of four analytical instruments, assisted students in preparing and carrying out lab experiments, individual experimental lab reports were graded – Spring 2015

Chemistry in Today’s Society Lecture and Lab; guided inquiry based instruction, misconceptions were addressed, heavy interaction between students, instructor, and TA, open response homework and exams were graded

General Chemistry I and II Recitation; lecture material was reviewed, students worked on practice problems in small groups, and questions were addressed, weekly quizzes were given and graded

Instructor:

General Chemistry II: designed and taught a full summer semester course and directed a graduate student TA for recitation; Summer 2014

Guest Lecturer:

Llyod Memorial High School, Erlanger, KY; Instructed various levels of High School chemistry regarding The Scientific Wheel of Inquiry and Conducting a Research Project Fall 2014

General Chemistry II, University of Cincinnati: Intermolecular Forces: Liquids, Solids, and Phase Changes and The Properties of Mixtures: Solutions and Colloids; 3 guest lectures for Dr. Joseph A. Caruso Spring 2014

General Chemistry I, University of Cincinnati: The Major Classes of Chemical Reactions; 3 guest lectures for Dr. Joseph A. Caruso Fall 2010

Graduate Research Assistant

Department of Chemistry University of Cincinnati, Cincinnati, OH 2010-present

* Investigated the metalloproteome of the human pathogen *Histoplasma capsulatum* via ICP-MS, HPLC-ICP-MS, and HPLC-ESI-TRAP-MS
* Trained five graduate students to operate the lyophilizer, chemical microwave, HPLC, ICP-MS, as well as the coupling of HPLC to ICP-MS
* Mentored six graduate students and three undergraduate students

Industrial Fellowship:

Oak Ridge Institute for Science and Education Student Fellow – Environmental Protection Agency, Cincinnati, OH 2012-2013

* Initiated and executed collaboration between the EPA and the University of Cincinnati
* Investigated the metabolism of arsenicals in mouse ceca through arsenic speciation via HPLC-ICPMS and HPLC-ICPQQQ
* Developed new SOP’s for laboratory practices
* Authored Quality Assurance Project Plan
* Implemented further safety and records management practices

**Workshops designed and presented**

Teach Me To Teach

Pedagogical Preparation Seminar; Backwards design and MC April 2015, Dec 2014, April 2014

Creating and e-portfolio for the Job Search

Academic Job Search April 2015

Productive Ways to Incorporate Technology in the Classroom

Incorporating YouTube into BlackBoard, Composing meaningful PRS questions, Using google docs and google drive Feb 2015

Brown-Bag Lunch Discussion

Tackling Your Teaching Challenges; Reading Compliance Jan 2015

Blackboard Basics

Inline Grading, Creating/lining assignments and SafeAssign, Creating quizzes and tests Oct 10, 2014

Student Engagement and Classroom Management

Learning-centered teaching, Active learning Sept 2014

Get Up and Go: Preparing for your first Teaching Assistantships at UC

Time Management, Learning-centered teaching, Active learning Aug 2014

**Pedagogical Development**

Analytical Laboratory Course Improvement with Dr. Anne Vonderheide at the University of Cincinnati

ICP-MS laboratory experiment

Developed a laboratory experiment incorporating real-world issues, data evaluation, and a variety of statistics.

→Manuscript in preparation

Rubric and lab report guidelines

Detailed rubric to be used for formal lab reports among all sections, lab report guidelines to aid students in writing reports

→Currently refining to be used in this course during Spring 2015

Scientific Reasoning Tool

Based on current research regarding poor reasoning skills in STEM courses. Addressed research questions and connection to real-world issues, claim-evidence-reasoning graphic organizer to help students contextualize the experimental results.

→Basis for future research study in upper level STEM lab courses

STEM Education and Practice Course with Dr. Kathy Koenig at the University of Cincinnati

* Discipline Based Education Research (DBER) and how it can inform teaching practices
* Quantitative and Qualitative Analysis, evaluating outcomes to assess impact
* Critical analysis of research articles in a variety of STEM disciplines

Preparing Future Faculty Program (completion expected Aug 2015)

Course Design Mentorship with Dr. Christa Currie at Mount Saint Joseph University, Cincinnati, OH

Chemistry in Everyday Living is a non-majors course which will be taught in a hybrid style during an accelerated semester this summer. Designing in-class and online activities and assessments as well as laboratory experiments.

**Awards**

Henry Hochstetter Prize 2015: For excellence as a graduate teaching assistant

Graduate Student Poster Forum Award in Physical Sciences and Engineering 2014

**Thomas B. Cameron Prize 2011:** To the graduate assistant in General Chemistry who represents the highest ideals and achievements in the teaching of chemistry

**Publications**

Manna S, Banerjee RK, Augsburger JJ, Al-Rjoub MF, \*Donnell A, Correa ZM. Biodegradable chitosan and polylactic acid-based intraocular micro-implant for sustained release of methotrexate into vitreous: analysis of pharmacokinetics and toxicity in rabbit eyes *Graefes Arch Clin Exp Ophthalmol* **2015** [Epub ahead of print] PMID: 25896109 [PubMed - as supplied by publisher]

Donais MK, George D, Duncan B, Wojtas S, \*Daigle AM. Evaluation of Data Processing and Analysis Approaches for Fresco Pigment Studies by Portable X-Ray Fluorescence Spectrometry and Portable Raman Spectroscopy *Anal. Methods* **2011**, *3*, 1061-1071 DOI: 10.1039/C0AY00736F

**Presentations**

Pathogenic Response of Metalloproteins in the Fungus *Histoplasma capsulatum* Under Low Zn Stress

presentation at *Pittcon 2015*, New Orleans, LA, March 2015, Anna Donnell\*, Julio Landero, Joseph A Caruso, Kavitha Vignesh, George Deepe, Alexey Porollo, Jessica Dade

Creating an Environment That Encourages and Supports Women in Science, presentation at *Pittcon 2015: Women in Spectroscopy Session*, New Orleans, LA, March 2015, Anna Donnell\*

A metallomics approach to examine the host macrophage defense mechanism from the perspective of the pathogenic fungus *Histoplasma capsulatum (Hc)*, presentation at the *2015 European Winter Conference on Plasma Spectrochemistry*, Muenster, Germany, February 2015, Anna Donnell\*, Joseph A Caruso, George Deepe, Alexey Porollo

Understanding the Metalloprotein Response of the Pathogenic Fungus *Histoplasma capsulatum* Under Low Zn Stress, presentation at the *2014 SciX: The Great Scientific Exchange Conference,*Reno, Nevada, September 2014,Anna Daigle Donnell\*, Julio Landero, Kavitha Subramanian Vignesh, Alexey Porollo, George Deepe , Joseph Caruso

Role Models: Stop Looking Up and Start Looking All Around, presentation at the *2014 SciX: The Great Scientific Exchange Conference: Women in Analytical Sciences Session,*Reno, Nevada, September 2014,Anna Daigle Donnell\*

Metalloproteome of *Histoplasma Capsultum*: The Role of Metals in Microbial Growth, poster and presentation at the *2013 SciX: The Great Scientific ExchangeConference,*Milwaukee, Wisconsin, October 2013,Anna Daigle\*, Julio Landero, Kavitha Subramanian Vignesh, George Deepe, Joseph Caruso

Metalloproteome of *Histoplasma Capsultum*: The Role of Metals in Microbial Growth, presentation at the *2013 ACS National Meeting and Exposition,*Indianapolis, Indiana, September 2013,Anna Daigle\*, Julio Landero, Kavitha Subramanian Vignesh, George Deepe, Joseph Caruso

**Posters**

Developing an analytical process to examine protein changes in the pathogenic fungus *Histoplasma capsulatum* under low Zn stress poster at *The* *2014 Oesper Symposium at the University of Cincinnati,*Cincinnati, Ohio, October 2014,Anna Donnell\*, Julio Landero, Kavitha Subramanian Vignesh, Geoge Deepe, Joseph Caruso

Understanding the Role of Zn-Containing Proteins and Microbial Growth in the Pathogenic Fungus *Histoplasma Capsulatum*, poster at the *2014 University of Cincinnati Graduate Student Poster Forum,*Cincinnati, Ohio, February 2014,Anna Daigle Donnell\*, Julio Landero, Kavitha Subramanian Vignesh, Geoge Deepe, Joseph Caruso

→Awarded the Graduate Student Poster Forum Award in Physical Sciences and Engineering

Understanding the Role of Zn-Containing Proteins and Microbial Growth in the Pathogenic Fungus *Histoplasma capsulatum*,poster at *The 2014 Winter Conference on Plasma Spectrochemistry,* Amelia Island, Florida, January 2014,Anna Daigle Donnell\*, Julio Landero, Kavitha Subramanian Vignesh, Geoge Deepe, Joseph Caruso

Metalloproteome of *Histoplasma Capsultum*: The Role of Metals in Microbial Growth, poster at *The* *2013 Oesper Symposium at the University of Cincinnati,*Cincinnati, Ohio, October 2013,Anna Daigle\*, Julio Landero, Kavitha Subramanian Vignesh, George Deepe, Joseph Caruso

Metalloproteome of *Histoplasma Capsultum*: The Role of Metals in Microbial Growth, poster and presentation at *SciX 2013: The Great Scientific Exchange Conference,*Milwaukee, Wisconsin, October 2013,Anna Daigle\*, Julio Landero, Kavitha Subramanian Vignesh, George Deepe, Joseph Caruso

Metalloproteome of *Histoplasma capsulatum*: Mn, Fe, Cu, and Zn:Total Metal Analysis and Chromatographic Separation, poster at *The 2012 Oesper Symposium*, University of Cincinnati, Cincinnati, OH, Oct 12, 2012, Anna Daigle\*, Julio Landero, Kavitha Subramanian, George Deepe , Joseph Caruso

Metalloproteome of *Histoplasma capsulatum*: Mn, Fe, Cu, and Zn:Total Metal Analysis and Chromatographic Separation, poster at *SciX 2012: The Great Scientific Exchange*, Kansas City, MO, Oct 1, 2012, Anna Daigle\*, Julio Landero, Kavitha Subramanian, George Deepe , Joseph Caruso

Metalloproteome of *Histoplasma capsulatum*: Mn, Fe, Cu, and Zn:Total Metal Analysis and Chromatographic Separation, poster at the *2012 Winter Conference on Plasma Spectrochemistry*, Tucson, AZ, Jan 11, 2012 Anna Daigle\*, Benedict Kemper, Brittany Catron, Kavitha Subramanian, Julio Landero, George Deepe , Joseph Caruso

Metalloproteome of *Histoplasma capsulatum*: Mn, Fe, Cu, and Zn:Total Metal Analysis and Chromatographic Separation, poster at *The 2011 Oesper Symposium*, University of Cincinnati, Cincinnati, OH, Oct 14, 2011, Anna Daigle\*, Benedict Kemper, Brittany Catron, Kavitha Subramanian, Julio Landero, George Deepe , Joseph Caruso

**Service**

Fairview Elementary School 4th grade Outreach Program

Elementary school students conducted experiments at UC with undergraduate and graduate students as well as faculty; 2011, 2013, and 2015

Kiki LIVE 2.0 STEM Event for Girls

Activity Leader and Science Instructor: Designed and instructed The Science of Textiles activity based on a guided-inquiry laboratory model Summer 2014

National Chemistry Week demonstrations at the Cincinnati Museum Center

Organized University of Cincinnati graduate and undergraduate student involvement 2012, 2013, and 2014.

Girls in Science Outreach Program with Hughes High School

Students from Hughes High School conducted chemistry experiments at the University of Cincinnati and were educated about postgraduate opportunities 2012, 2013

Society of Applied Spectroscopy

Web Editor, chair of Website Committee, member of the Executive Committee (March 2013 to present) Member of the Publicity Committee (2012 to present)

Graduate Association for Teaching Enhancement at the University of Cincinnati

Executive Board Member Spring 2013-present; Vice President for the 2014-2015 academic year

**Affiliations**

American Chemical Society 2010-present

Society for Applied Spectroscopy 2010-present

Association for Women in Science 2013-present