

**Anna A. V. Cook, Ph.D.**  
**Lecturer and General Chemistry Coordinator**

Department of Chemistry & Biochemistry  
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**EDUCATION**

- Ph.D. Chemistry**, University of Iowa, Iowa City, Iowa, 2014 Ph.D. Dissertation: “Covalently Functionalized Noble Metal Nanoparticles for Molecular Imprinted Polymer Biosensors: Synthesis, Characterization, and SERS Detection” Research Advisor: Dr. Amanda J. Haes
- B.S. Comprehensive Chemistry**, University of Wisconsin – Eau Claire, Eau Claire, Wisconsin, 2008 GPA: 3.12/4.0

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**TEACHING EXPERIENCE**

**University of Wisconsin – Eau Claire, Lecturer, 2020 – Current**

- General Chemistry I Lecture (105)
  - Fall: 2020, 2021, 2022
  - Summer: 2021
- General Chemistry I Laboratory (106)
  - Fall 2020, 2021, 2022
  - Summer: 2021
- General Chemistry II (Lecture and Lab Instructor)
  - Spring 2021, 2022, 2023
  - Summer: 2022, 2023
- Student Academic Apprenticeship (CHEM 296)
  - Fall 2022 – 15 students
  - Spring 2023 – 12 students
  - Fall 2023 – 9 students

**American Public University Systems, Online Instructor, 2018 - 2021**

- Introduction to Chemistry with Lab (8 weeks), Fall 2018 Session I, Spring 2018 Session D & Session B, Winter 2018 Session B, Winter 2019 Session I
- General Chemistry I with Lab (16 weeks), Summer 2018 Session A, Winter 2019 Session A, Spring 2019 Session C, Fall 2019 Session A, Summer 2019 Session A
- General Chemistry II with Lab (16 weeks), Winter 2020 Session A & K

**Gustavus Adolphus College, Visiting Assistant Professor, 2015 - 2020**

- Chemical Thermodynamics and Equilibrium, January 2019 and 2020
- Inorganic Chemistry I Lab, Spring 2016, 2018, 2019, 2020 (Instructor and Coordinator)
- Introduction to Chemical Principles (Lecture and Lab Instructor), Fall 2018, 2019
- Organic Chemistry I Lecture Instructor, Spring 2017
- Organic Chemistry I Lab, Spring 2015, 2016, 2017, and 2019
- Physical Chemistry I Lab, Fall 2016 and 2017 (Instructor and Coordinator)
- Principles of Chemistry (Lecture and Lab Instructor), Fall 2015, 2016, 2017
- Seminar Coordinator, Fall 2017
- Special Topics: “Exploring Nanoparticle Formation and Applications”, Spring 2018
- Special Topics: “Exploring Surface Enhanced Spectroscopy Fundamentals and Applications”, Spring 2020
- Special Topics: “Investigating Chemical Literature”, Spring 2016
- Special Topics: “What’s the Big Deal? Examining the synthesis, characterization, and application of metal nanomaterials”, January Term 2016

**University of Iowa, Visiting Assistant Professor**

- General Chemistry I, Fall 2014

**University of Iowa, Teaching Assistant**

- Principles of Chemistry: Fall 2008, Fall 2009, Spring 2010

**Chemistry Tutor**

- Online General and Advanced Chemistry: 2016 - 2020
- General Chemistry I: Fall 2011, Spring 2012, Fall 2016
- General Chemistry II: Fall 2011, Fall 2017
- Principles of Chemistry 1: Spring 2012

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**SYNERGISTIC ACTIVITIES**

2023	<b>UW Systems, OPID Annual Faculty College, UWEC Team Member</b>
2022	<b>UWEC, CETL Teaching Academy, Faculty Presenter</b>
2022 - 2023	<b>UWEC, Department of Chemistry &amp; Biochemistry, Student Affairs Committee Chair</b>
2021	<b>UWEC, Department of Chemistry &amp; Biochemistry, Secretary</b>
2021 – current	<b>UWEC First Year Opportunity Program, Instructor</b>
2021 – current	<b>UWEC, Department of Chemistry and Biochemistry, Student Affairs Committee</b>
2021	<b>UWEC, Chemistry Springboard Program, Founder and Faculty Mentor</b>
2021	<b>UWEC, Department of Chemistry &amp; Biochemistry, Retention Institute Coordinator</b>
2020 – current	<b>UWEC, Department of Chemistry &amp; Biochemistry, General Chemistry Coordinator</b>
2020 – 2023	<b>UWEC, Department of Chemistry &amp; Biochemistry, EDI Committee</b>
2020	<b>Gustavus Adolphus College, Department of Chemistry, Safety Team</b>
2017-2020	<b>Gustavus Adolphus College, Chemistry Placement Exam Coordinator</b>
2017	<b>Gustavus Adolphus College Fall Research Symposium, Coordinator</b>
2016-2017	<b>Gustavus Adolphus College, Department of Chemistry, Social Chair</b>
2016-2020	<b>Gustavus Adolphus College, Summer Registration Mentor</b>
2016	<b>Gustavus Adolphus College New Faculty Orientation, Tour Guide</b>
2016-2017	<b>Gustavus Adolphus College, Nobel Hall Instrument Room Coordinator</b>
2015, 2017	<b>Gustavus Adolphus College Student Teaching Evaluator, Kari Roll, Grace Henry</b>
2015-2017	<b>Gustavus Adolphus College Chemistry Club, Adjunct Mentor</b>
2015-2020	<b>Gustavus Adolphus College Writing Retreats, Participant</b>
2015-2020	<b>“Teacher’s Talking” Faculty Workshops, Participant</b>
2012-2013	<b>University of Iowa, Department of Chemistry, Research Mentor, Michael Boller</b>
2011-2013	<b>The Nanoscience and Nanotechnology Institute at the University of Iowa Research Experience for Undergraduates, Research Mentor</b> <ul style="list-style-type: none"><li>● Kristen O’Connor, Annie Whiteley, Felix Alfonso</li></ul>
2011	<b>University of Iowa, Spring Undergraduate Research Festival, Judge</b>
2010	<b>University of Iowa, Upward Bound Program, Research Mentor, Miller Thammavongsa (High School Student)</b>
2009-2014	<b>Safety Liaison, Department of Chemistry, Haes Group Representative</b>
2008-2013	<b>Alpha Chi Sigma – Alpha Theta</b> <ul style="list-style-type: none"><li>● Tutoring Program, Undergraduate Chemistry Tutor</li><li>● Boy Scout Day, Nanoscience Instructor</li><li>● Outreach Program, Volunteer</li></ul>

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**AWARDS AND HONORS**

2023	<b>Wisconsin Teaching Fellow, UW Systems</b>
2021	<b>Canvas Certified Educator Program Scholarship, UW Systems</b>
2018	<b>Provost Innovation Grant, Gustavus Adolphus College, “Alternative course for Introductory Chemistry”</b>

- 2016 **Kendall Center Individual Teaching and Learning Mini Grant**, Gustavus Adolphus College, “Statistical Modeling of Student Performance in Principles of Chemistry”.
- 2013 **Glenn Rhodes Wilson Memorial Fellow**, Department of Chemistry
- 2012 **Strategic Initiative Fund Fellowship**, University of Iowa Graduate College
- 2011 **Summer Fellow**, University of Iowa Graduate College  
**3<sup>rd</sup> Place Mathematical, Physical, & Engineering Sciences Division**, James F. Jakobsen Graduate Conference
- 2010 **Research Presentation Travel Award**, Department of Chemistry  
**Summer Fellow**, Graduate Assistance in Areas of National Need (GAANN)  
**Outstanding Teaching Award**, University of Iowa Department of Chemistry  
**Research Presentation Travel Award**, Executive Council of Graduate and Professional Students
- 2009 **Letter of Recognition**, ‘Thank a Teacher’ Program, University of Iowa  
**Fellow**, Graduate Assistance in Areas of National Need (GAANN), January - August

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#### PROFESSIONAL DEVELOPMENT

- 2023 **Wisconsin Teaching Fellows and Scholars Program** – Scholar for 23/24 school year
- 2022 **Teaching Academy II**, UWEC CETL, completed August
- 2021 **Canvas Certified Educator Program**, Instructure (Canvas), February - December
- 2021 **Digital Transformation Course**, UWEC CETL, completed January
- 2020 **Teaching Academy**, UWEC CETL, completed August

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#### RESEARCH EXPERIENCE

- 2008–2014 **Graduate Research Assistant**, University of Iowa Department of Chemistry, Iowa City, Iowa. Research Advisor: Dr. Amanda J. Haes
- Optimized the seeded growth synthesis of gold nanoparticles.
  - Use of normal and surface enhanced Raman spectroscopy for drug detection in solution and molecular imprinted polymers.
- 2007-2008 **Undergraduate Research Student**, University of Wisconsin – Eau Claire Department of Chemistry, Eau Claire, Wisconsin. Research Advisor: Dr. James E. Boulter
- Analyzed biogenic carbonyl compounds using liquid chromatography – mass spectroscopy (LC-MS).

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#### PUBLICATIONS

6. *Recognition of Drugs using Molecular Imprinted Polymers and Shifts in Raman Vibrational Frequencies*, W. Xi, **A.A. Volkert**, M. C. Boller, A.J. Haes, *Journal of Physical Chemistry C*, **2018**, 122, 23068 - 23077.
5. *Implications of Sample Aging on the Formation of Internally Etched Silica Coated Gold Nanoparticles*, **A.A Volkert**, M. Pierre, B. Shrestha, A.J. Haes, *RSC Advances*, 2015, 5, 3774-3780.
4. *Advancements in Nanosensors using Plastic Antibodies*, **A.A. Volkert**, A.J. Haes, *Analyst*, 2014, 139, 21-31.
3. *Salt-mediated self assembly of thioctic acid on gold nanoparticles*, **A.A. Volkert**, V. Subramaniam, M. Ivanov, A. Goodman, and A.J. Haes. *ACS Nano*, 2011, 5, 4570-4580.
2. *Implications of citrate concentration during the seeded growth synthesis of gold nanoparticles*, **A.A. Volkert**, V. Subramaniam, and A.J. Haes, *Chemical Communications*, 2011, 47, 478-480.
1. *Oxidase, superoxide dismutase, and hydrogen peroxide reductase activities of methanobactin from types I and II methanotrophs*, D.W. Choi, J.D. Semrav, W.E. Antholine, S.C. Hartsel, R.C. Anderson, J.N. Carey, A.M. Dreis, E.M. Kenseth,

J.M. Renstrom, L.L. Scardino, G.S. Van Gorden, **A.A. Volkert**, A.D. Wingad, P. J. Yanzer, M.T. McEllistrem, A.M. de la Mora, A.A. Dispirito. *Journal of Inorganic Biochemistry* 2008 102 (8), 1571-1580.

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## STUDENT PRESENTATIONS

3. "Determination of Chloride Ion Concentration in water samples," Trang Phan, Olivia Bruse, Brandy Russell, A. A. Volkert Cook (poster) presented at the **Celebration of Creative Inquiry**, St. Peter, Minnesota, May 2019.
2. "Dasani: Should we drink it?," Tyra Banks, Rachel Butzer, Tenzen Yangzom, Brandy Russell, A. A. Volkert Cook (poster) presented at the **Celebration of Creative Inquiry**, St. Peter, Minnesota, May 2019.
1. "Comparison of Water Softening Methods," Hanaa Alhosawi, Alhaji Jalloh, Ashley Engstrom, Brandy Russell, A. A. Volkert Cook (poster) presented at the **Celebration of Creative Inquiry**, St. Peter, Minnesota, May 2019.

\*Undergraduate presenters are underlined.

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## PRESENTATIONS

14. "Statistical Modeling of Student Performance in Principles of Chemistry" (poster) presented at **Celebration of Learning and Development**, St. Peter, Minnesota, April 2017.
13. "Evaluating Gold Nanomaterial Stability: A Multi-Week Materials Laboratory Exploration" (poster) presented at **Midwestern Association of Chemistry Teachers in Liberal Arts Colleges 2016 Annual Meeting**, St. Joseph, Minnesota, October 2016.
12. "Noble Metal Nanoparticles for Molecular Imprinted Polymer Biosensors" (invited oral presentation) presented at **Gustavus Adolphus College**, Saint Peter, Minnesota, March 2016.
11. "Molecular Imprinted Polymers for Raman-based Nanosensors" (invited oral presentation) presented at **SciX Conference**, Milwaukee, Wisconsin, October 2013.
10. "Towards Flow-Through Nanosensors using Gold Coated Silver Nanospheres" (oral presentation) presented at **American Chemical Society Spring National Meeting**, New Orleans, Louisiana, April 2013.
9. "Selective Detection of Drugs Using Molecular Imprinted Polymer Nanosensors," (poster) presented at University of Iowa, **Optical Science and Technology Center Annual Symposium**, Iowa City, Iowa, March 2013.
8. "Salt-Mediated Self-Assembly of Thioctic Acid on Gold Nanoparticles," (poster) presented:
  - i. University of Iowa, **Optical Science and Technology Center Annual Symposium**, Iowa City, Iowa, May 2012;
  - ii. **American Chemical Society Fall National Meeting**, Denver, Colorado, August 2011.
7. "Salt-Mediated Self-Assembly of Thioctic Acid on Gold Nanoparticles," (oral presentation) presented at University of Iowa, **James F. Jakobsen Graduate Conference**, Iowa City, Iowa, March 2011.
6. "Immunoassays with Noble Metal Nanoparticles," (oral presentation) presented at **Pittcon Conference**, Atlanta Georgia, March 2011.
5. "Haes Research Group: Fabricating Nanomaterials for Biomedical Applications" (poster) presented:
  - a. University of Iowa, **Optical Science and Technology Center Annual Symposium**, Iowa City, Iowa, April 2011;

- b. University of Iowa, **Biosciences Interview Weekend**, February 2011.
4. “Stabilizing Noble Metal Nanoparticles in Extreme Biological Conditions,” (poster) presented:
- University of Iowa, **Optical Science and Technology Center Annual Symposium**, Iowa City, Iowa, April 2010;
  - University of Iowa, **James F. Jakobsen Graduate Conference**, Iowa City, Iowa, March 2010;
  - Pittcon Conference**, Orlando, Florida, February 2010;
  - National Organization for the Professional Advancement of Chemists and Chemical Engineers Midwest Regional Conference**, Iowa City, Iowa, November 2010.
4. “Elucidating the Role of Ions During Gold Nanoparticle Growth,” (poster) presented at the **American Chemical Society Midwest Regional Meeting**, Iowa City, Iowa, October 2009.
3. “Verification of a Standard Estimation Model for Gold Nanoparticles,” (poster) presented:
- University of Iowa, **Optical Science and Technology Center Annual Symposium**, Iowa City, Iowa, April 2009;
  - University of Iowa, **James F. Jakobsen Graduate Conference**, Iowa City, Iowa, March 2009.
2. “LC-MS analysis of biogenic carbonyl compounds using novel derivatization agents,” (poster) presented at the **American Chemical Society Meeting**, New Orleans, Louisiana, April 2008.

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## SKILLS

- Normal and Surface Enhanced Raman Spectroscopy, Attenuated Total Reflectance – Fourier Transform Infrared Spectroscopy, Nuclear Magnetic Resonance Spectroscopy, X-ray Photoelectron Spectroscopy, Ultraviolet-Visible Spectroscopy
- Capillary Electrophoresis and High Performance Liquid Chromatography
- Zeta Potential and Dynamic Light Scattering
- Chemical Synthesis of Nanoparticles (Au and Ag)
- Photopolymerization of Molecular Imprinted Polymers
- Transmission Electron Microscopy
- Computer Programs: Microsoft Word, Excel, Power Point, Origin, Mathcad, Matlab, DynaFit, CasaXPS, WebMO, Spartan, Moodle, D2L, Sekai, Canvas

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## PROFESSIONAL ORGANIZATIONS

- Alpha Chi Sigma Professional Chemistry Fraternity
- American Chemical Society, member, Spring 2008 – Present
- Midwestern Association of Chemistry Teachers in Liberal Arts Colleges, 2016
- Optical Sciences and Technology Center (OSTC) at the University of Iowa, Spring 2009 - Present.
- The Nanoscience and Nanotechnology Institute (NNI) at the University of Iowa, Spring 2009 - Present.