

Stefan Mark Irby, Ph.D. Candidate

Work: 560 Oval Drive, Box 500, West Lafayette, IN 47907 | WTHR 231 | Department of Chemistry, Purdue University
sirby@purdue.edu | stefanirby.com

EDUCATION

Ph.D. Chemistry – Chemical Education (3.88 GPA)	Purdue University 2014 - Present
B.S. Biochemistry (3.72 GPA)	Western Washington University 2014
A.A. Business	Green River Community College 2010
High School Diploma	Tahoma Senior High School 2010

RESEARCH

Doctoral Researcher – Biochemistry Education **Purdue University** August '14 – Present
Conducting research under the advisement of Dr. Trevor R. Anderson as part of the Visualization in Biochemistry Education (VIBE) research. My thesis research focuses on a developing and implementing novel assessments of biochemistry Course-based Undergraduate Research Experience (CURE).

Undergraduate Researcher – Chemistry Education **Western Washington University** March '11 – June '14
Conducted research under the advisement of Dr. Emily J. Borda of the Department of Chemistry at Western Washington University in the area of chemistry education and epistemology.

Research Intern **Fred Hutchinson Cancer Research Center** June '13 – August '13
Conducted research under Dr. Barry Stoddard at the Fred Hutchinson Cancer Research Center in the Basic Science division. The lab's focus is structural biology and crystallography.

TEACHING

General Chemistry Course Coordinator	Purdue University June '16 – Present
General Chemistry Lab Supervisor	Purdue University August '15 – Present
Graduate Chemistry Teaching Assistant	Purdue University August '14 – May '15
Chemistry Lab Teaching Assistant	Western Washington University January '11 – June '14

PROFESSIONAL DEVELOPMENT

Developed a Faculty Workshop on Designing and Validating Assessments	January '18
ASBMB Graduate Student and Postdoc Career-Development Event	April '17
Safe Zone Certified	January '17
VIBE Research Group Office Manager	August '15 - Present

DEPARTMENTAL AND UNIVERSITY VOLUNTEERING AND OUTREACH

Phi Lambda Upsilon Spring Fest Science Outreach	April '18
Disability Resource Center Mentoring Program - Mentor	August '17 – Present
Science in Schools	October '17
Iota Sigma Pi Chemistry OP Help Session	July '17
National Chemistry Week	October '16
Chemistry Department Recruitment	March '16 – '18
Chemistry Department Proctor	January '16 – Present
Chemistry Graduate Student Mentoring Program - Mentor	August '15 – Present
Chemistry Graduate Student Orientation	August '15 – '17

RECENT AWARDS AND DISTINCTIONS

ASBMB Graduate Student Travel Award 2017	American Society for Biochemistry and Molecular Biology
Honorable Mention 2016	National Science Foundation
Graduate Research Fellowship Program	

Publications

- Irby, S. M.**, Pelaez, N. J., & Anderson, T. R. (2018, *in press*). How to Identify the Research Abilities Instructors Anticipate Students will Develop in a Biochemistry Course-Based Undergraduate Research Experience (CURE). *CBE - Life Sciences Education*.
- Craig, P. A., Anderson, T. R., Bernstein, H. J., Daubner, C., Goodman, A., **Irby, S. M.**, Koeppe, J., Mills, J. L., Pikaart, M., McDonald, A. R., O'Handley, S., Roberts, R., & Stewart, R. (2018, *in press*). Using protein function prediction to promote hypothesis-driven thinking in undergraduate biochemistry education. *The Chemist*.
- Irby, S. M.**, Borda, E. J., & Haupt, J. (2018). The Effects of Implementing a Hybrid Wet-Lab and Online Module-Lab Curriculum into a General Chemistry Course: Impacts on Student Performance and Engagement with the Chemistry Triplet. *Journal of Chemical Education*, 95(2).
- Irby, S. M.**, Phu, A. L., Borda, E. J., Haskell, T. R., Steed, N., & Meyer, Z. (2016). Use of a card sort task to assess students' ability to coordinate three levels of representation in chemistry. *Chemistry Education Research and Practice*, 17(2).

Invited Presentations underlined author denotes presenter(s)

- Irby, S. M.**, Pelaez, N. J., & Anderson, T. R. (2017, May). A Process for Defining and Validating Learning Competencies for Course-Based Undergraduate Research Experiences in a Biochemistry Laboratory Curriculum. Presented at Fourth NSF RCN-UBE funded ACE-Bio Network Retreat, Highlands, NC.

Oral Presentations underlined author denotes presenter(s)

- Borda, E. J., **Irby, S. M.**, Phu, A. L., and Haskell, T. R. (2016, April). Use of a Card Sort Task to Define a Progression for Coordinating Three Levels of Representation in Chemistry. Presented at National Association for Research in Science Teaching Annual International Conference, Baltimore, MD.
- Irby, S.**, Phu, A., Borda, E., and Haskell, T. (2014, August). Scratching the surface of chemistry: A progression for categorizing chemistry problems. Presented at Biennial Conference on Chemical Education, Allendale, MI.
- Haupt, J., Borda, E., **Irby, S.**, and Phu, A. (2014, August). Cognitive affordances of multiple external representations in a virtual chemistry lab. Presented at Biennial Conference on Chemical Education, Allendale, MI.

Poster Presentations underlined author denotes presenter(s)

- Irby, S. M.**, Pelaez, N. J., & Anderson, T. R. (2017, April). A Process for Defining and Validating Learning Competencies for Course-Based Undergraduate Research Experiences in a Biochemistry Laboratory Curriculum. Poster session presented at Experimental Biology, Chicago, IL.
- Craig, P., Mills J., Roberts, R., Pikaart, M., Daubner, C., **Irby, S.**, & Anderson, T. (2017, April). Transition to a Course-based Undergraduate Research Experience (CURE). Poster session presented at Experimental Biology, Chicago, IL.
- Mills, J., DiCola, A., Roberts, R., Pikaart, M., Daubner, C., **Irby, S.**, Anderson, T., Bernstein, H., & Craig, P. (2017, April). Assessing Learning Gains Through ePortfolios in an Undergraduate Biochemistry Lab. Poster session presented at Experimental Biology, Chicago, IL.
- Roberts, R., Koeppe, J., Price, S., Allwein, B., Anderson T., Daubner, S. C., **Irby, S.**, Mills, J., Pikaart, M., & Craig, P. (2017, April). Modeling Interdisciplinary Collaborations Through a Course-Based Undergraduate Research Experience (CURE). Poster session presented at Experimental Biology, Chicago, IL.
- Irby, S. M.**, Pelaez, N. J., & Anderson, T. R. (2016, August). Towards an understanding of reasoning about proteins of unknown function in biochemistry course-based undergraduate research experiences. Poster session presented at Biennial Conference of Chemical Education, Greeley, CO.
- Irby, S.**, Phu, A., Borda, E., and Haskell, T. (2014, May). Scratching the surface of chemistry: A progression for categorizing chemistry problems. Poster session presented at Western Washington University Scholars Week, Bellingham, WA.
- Irby, S.** and Stoddard, B. (2013, August). Characterization of the Homing Endonuclease I-Cth. Fred Hutchinson Cancer Research Center's Summer Undergraduate Research Program competitive poster session. Seattle, WA.
- Irby, S.** and Borda, E. (2012, June). Analysis of module learning and student outcomes: Using technology to increase gains in chemical education. Poster session presented at ACS North West Regional Meeting, Boise, ID.
- Irby, S.** and Borda, E. (2012, May). Analysis of module learning and student outcomes: Using technology to increase gains in chemical education. Poster session presented at Western Washington University Scholars Week, Bellingham, WA.

Acknowledged Research and Intellectual Contributions

- Craig, P. A. (2017) A survey on faculty perspectives on the transition to a biochemistry course-based undergraduate research experience laboratory. *Biochemistry and Molecular Biology Education*, 45(5), 426-436.