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**Jill K. Robinson, Ph.D.**  
Indiana University  
Department of Chemistry

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**Education**

1999 Ph.D. Analytical and Atmospheric Chemistry, University of Colorado, Boulder, CO  
1994 B.S. Chemistry, Truman State University, Kirksville, MO

**Academic Positions**

2020-present Teaching Professor, Department of Chemistry, Indiana University, Bloomington  
2008-2020 Senior Lecturer, Department of Chemistry, Indiana University, Bloomington  
2002-2008 Lecturer, Department of Chemistry, Indiana University, Bloomington, IN  
1999-2002 Academic Professional Lecturer in Analytical Chemistry, University of Wyoming, Laramie, WY

**Courses Taught**

Analytical Chemistry lecture and laboratory  
General Chemistry I and II (lecture and laboratory)  
Honors General Chemistry I (lecture and laboratory)  
Introduction to Chemical Principles (lecture and laboratory)  
Environmental Chemistry (300-level)  
Responsible Conduct of Research and Science Ethics

**Honors and Awards**

2018 J. Calvin Giddings Award for Excellence in Education, American Chemical Society Division of Analytical Chemistry  
2017 Excellence in Teaching Award, Indiana University Board of Trustees  
2016 Mosaic Fellowship for Active Learning, Indiana University  
2011 President's Award for Distinguished Teaching, Indiana University  
2010 Excellence in Teaching Award, Indiana University Board of Trustees  
2008 Excellence in Teaching Award, Indiana University Board of Trustees  
2003 Excellence in Teaching Award, Indiana University Board of Trustees  
2000 Student Choice Award for Teaching, University of Wyoming Honors College

**Professional Organizations and Activities**

2005-present Member of the American Chemical Society (Division of Chemical Education)  
2014-present Active Learning in Analytical Chemistry Curriculum Project  
The project was funded by a series of grants from the National Science Foundation awarded to Tom Wenzel at Bates College. (Transforming Undergraduate Education (TUES) and Improving Undergraduate STEM Education (IUSE). I collaborated with the PI on all stages of the design and evaluation of the national and regional workshops. In addition, I developed curricular materials for the Analytical Sciences Digital Library Active Learning Website and served as a facilitator at active learning workshops for faculty. Workshops listed below.  
2014 Spelman College, Atlanta, GA (30 participants from minority serving institutions)  
2016 Indiana University, Bloomington, IN (25 participants from minority serving institutions)  
2017 Washington University, St. Louis, MO (20 participants)  
2017 Indiana University, Bloomington, IN (20 participants)  
2018 Indiana University, Bloomington, IN (20 participants)

### **Service (Professional)**

- 2020-present *Analytical and Bioanalytical Chemistry* (Published by Springer), Editor for the column “ABCs of Analytical Science Education and Professional Development.”
- 2015-present Reviewer for Journal of Chemical Education
- 2023 American Chemical Society Exams Institute: General Chemistry Exam Committee
- 2021, 2022 Award selection committee – Hirsch Award for Distinguished Service in the Advancement of Analytical Chemistry
- 2017-present External Evaluator for Promotion Committees  
Department of Chemistry, University of Arizona, Assistant Professor of Practice  
Department of Chemistry, University of Toronto, Full Professor Teaching Stream  
Department of Chemistry, University of Nevada-Reno, Senior Lecturer  
School of Social Work, Indiana University, Senior Lecturer
- 2019 Reviewer: ACS Books, Communication in Chemistry, Using Online Collaborative Learning to Stimulate Confidence and Self Reflection
- 2015 American Chemical Society Exams Institute: General Chemistry Exam Committee
- 2013 National Science Foundation Review Panel, Targeted Infusion Projects, Historically Black Colleges and Universities- Undergraduate Program HBCU-UP
- 2011 National Science Foundation Review Panel, Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics
- 2005-2008 Planning Committee: Biennial Conference in Chemical Education Family Program Chair:  
Organized a childcare program, a 5K Fun Run, and fifteen tours around the community and campus.

### **Service (Indiana University)**

- 2023 Panel Discussion on Teaching Professor Promotion, Teaching Faculty Career Development Series, Indiana University
- 2022-present Director of Undergraduate Studies, Department of Chemistry, Indiana University
- 2021 Campus Promotion Committee (Teaching and Clinical Track Appointments)
- 2002-present Curriculum Committee and Undergraduate Awards Committee, Department of Chemistry
- 2019-present Faculty Advisor for the Brain Exercise Initiative Student Chapter at IU
- 2017-present Faculty Advisor for the American Medical Women’s Association Student Chapter at IU
- 2013-present Academic Mentor for Student Athletes
- 2005-2019 Indiana University Dance Marathon Faculty Advisory Board
- 2017 External Review Committee, Department of Chemistry
- 2012 Faculty Advisory Board Member - Themester: Good Behavior/Bad Behavior: Molecules to Morality

### **Funded Grants**

- 2021 Summer Academy for Curriculum Analysis and Improvement (SACAI) grant (\$5,000)
- 2019 American Association of Universities STEM Network Mini-Grant (\$20,000)  
“Mitigating Grade Surprise in Large, First-Year STEM Courses”  
G. Rehrey, D. Groth, L. Shepherd L., J. M. Robinson, J. K. Robinson, J. Arthos, K. Shan, P. Logan
- 2019 Learning Analytics Program, Indiana University (\$10,000)  
“Collaborative Learning Analytics of Developmental, Supplemental, and Tutorial Services in General Education Courses at Indiana University” D. Hickey, J. Robinson, J. Duncan, K. Silvester
- 2018 Mosaic Senior Fellows Research Grant (\$5,000)  
“Evaluating Teaching Assistants’ Facilitation of Active-Learning Exercises” T. Bent, J. Knapp, J. Robinson

- 2018 Learning Analytics Program, Indiana University (\$10,000)  
 “Mitigating Grade Surprise: A Study of Students’ Grade Expectations Using Learning Analytics and Assignment Performance in General Education Courses at Indiana University”  
 J. M. Robinson, J. K. Robinson, J. Arthos, N. Onesti, Paul, L., K. Shan
- 2017 Learning Analytics Program, Indiana University (\$7,500)  
 The HumAn Learning Project: Human Expertise, Analytics, & Student Learning in Multi-Section General-Education Courses at Indiana University, J. M. Robinson, J. K. Robinson, J. Arthos
- 2016 Scholarship of Teaching and Learning (\$5,000)  
 “Evaluation of Practices for Teaching Assistants in Active Learning Classrooms, T. Bent, J. Knapp, J. Robinson
- 2011 Indiana University Summer Development Grant for Active Learning (\$5,000)  
 “Project-Based Learning in Analytical Chemistry Laboratory”
- 2011 Themester Program, Indiana University (\$11,000)  
 “Ethics in Science: An Interview with David Lacks” (David Lacks, son of Henrietta Lacks, gave a public interview about his life and experiences with his mother's famous HeLa cells.)
- 2010 Indiana Commission for Higher Education (\$304,300)  
 “Math and Molecules Matter: Teacher Professional Development Workshop”  
 C. Brown, J. Robinson
- 2009 Indiana University, ISTEME, (\$10,400)  
 “Nanoscience Projects in New Technology High Schools”
- 2005 Indiana University Campus Writing Center (\$2,500)  
 “Improving Journal-Style Writing in Analytical Chemistry Laboratory”
- 2001 National Science Foundation Course, Curriculum, and Laboratory Improvement (\$73,240)  
 “New Undergraduate Chemistry Experiments Utilizing Gas Chromatography-Mass Spectrometry  
 E. Clennan, J. Robinson
- 1999 The Camille and Henry Dreyfus Foundation (\$45,000)  
 “The Purchase and Integration of a Differential Scanning Calorimetry Instrument into Undergraduate Laboratories” J. Yarger, J. Robinson

### **Pending Proposals:**

- 2022 Collaborative Research: Expansion of a Professional Development Program for Promoting the Sustained Use of Engaged Student Learning in Analytical Chemistry  
 National Science Foundation, Improving Undergraduate STEM Education (IUSE) (\$1,304,621)

### **Publications (Books)**

3. Wenzel, T. J., Kovarik, M. L., Robinson, J. K., Active Learning in the Analytical Chemistry Curriculum, ACS symposium series Volume 1409, January 31, 2022 DOI: 10.1021/bk-2022-1409  
<https://pubs.acs.org/doi/10.1021/bk-2022-1409>
2. J. K. Robinson, J. E. McMurry, R. C. Fay, Chemistry, 8<sup>th</sup> Ed., Pearson Education, Inc. **2019**
1. J. E. McMurry, R. C. Fay, J. K. Robinson, Chemistry, 7<sup>th</sup> Ed., Pearson Education, Inc. **2015**

## **Publications (Journal articles and online resources)**

15. Kovarik, M. L., Robinson, J. K., Wenzel, T. J., A new resource to help instructors incorporate active learning into analytical chemistry courses, *Analytical and Bioanalytical Chemistry*, April, 2022.  
<https://doi.org/10.1007/s00216-022-04077-5>
14. Kovarik, M. L., Robinson, J. K., Wenzel, T. J., Looking to the Future of Analytical Chemistry Education: A New Resource to Help Instructors, *ACS Meas. Sci. Au* 2022, 2, 76- 77.  
<https://doi.org/10.1021/acsmeasuresciau.2c00014>
13. Cavinato, A.G., Hunter, R.A., Ott, L.S., Robinson, J.K., Promoting student interaction, engagement, and success in an online environment, *Analytical and Bioanalytical Chemistry*, 413, 1513 – 1520, 2021.  
<https://doi.org/10.1007/s00216-021-03178-x>
12. T. Bent, J. Knapp, J. Robinson, Evaluating the Effectiveness of Teaching Assistants in Active Learning Classrooms, *Journal of Learning Spaces*, Vol. 9, Number 2, 2020.  
<https://libjournal.uncg.edu/jls/article/view/1984>
11. D. Hickey, J. Robinson, S. Fiorino, Y. Feng, Internet-Based Alternatives for Equitable Preparation, Access, and Success in Gateway Courses, *The Internet and Higher Education*, 44, **2019**.  
<https://doi.org/10.1016/j.iheduc.2019.100693>
10. M. Kovarik, J. Robinson, Collaborative Learning Exercises for Teaching Protein Mass Spectrometry, *Journal of Chemical Education*, **2019**, 96, 5, 905-911.  
<https://doi.org/10.1021/acs.jchemed.8b00734>
9. V. Kohout, Z. Wooke, A. McKee, M. Thielges, \*J. Robinson, \*\*N. Pohl, Protein N-Glycans: Incorporating Glycochemistry into the Undergraduate Laboratory Curriculum, *Journal of Chemical Education* **2018**, 95(12), pp 2249-2255.  
<https://doi.org/10.1021/acs.jchemed.8b00539>
8. J. Robinson., M. Kovarik, “Biological Mass Spectrometry: Proteomics”  
Educational module published on *Analytical Sciences Digital Library Active Learning* site. **2017**  
<http://community.asdlib.org/activelearningmaterials/category/in-class-activities/>
7. J. Robinson, Quality Control Analysis for a Local Brewery, Educational module published on *Analytical Sciences Digital Library Active Learning* site. **2015**  
<http://community.asdlib.org/activelearningmaterials/category/laboratory-activities/>
6. J. Robinson., Project-based learning: Improving student engagement and performance in the laboratory, *Analytical and Bioanalytical Chemistry*: Volume 405, Issue 1 **2013**, Page 7-13.
5. J. Robinson, C. Reck, S. Wietstock, Principles of Chemistry and Biochemistry I Laboratory Manual, 3<sup>rd</sup> Ed., Hayden-McNeil Publishing Inc., **2005**.
4. J. Robinson, Chemistry 103/121 Laboratory Manual, 2<sup>nd</sup> Ed., Hayden-McNeil Publishing Inc., **2004**.
3. J. K. Robinson., Luminol-Hydrogen Peroxide Chemiluminescence Detector for the Analysis of Nitric Oxide in Exhaled Breath, University of Colorado, Doctoral Thesis, **1999**.

2. J. K. Robinson , W. Scott, K. A. Rowlen, J. W. Birks, Derivatization of thymine and thymine photodimer with 4-bromomethyl-7- methoxycoumarin for fluorescence detection in highperformance liquid chromatography, *Journal of Chromatography B*, **1999**, **731**, 179-186.

1. J. K. Robinson, M.J. Bollinger, J.W. Birks, Luminol/H<sub>2</sub>O<sub>2</sub> Chemiluminescence Detector for the Analysis of Nitric Oxide in Exhaled Breath, *Analytical Chemistry*, 1999, **71**, 5131-5136.

M. J. Bollinger, J.W. Birks, J.K. Robinson, Nitric Oxide Gas Detector, U.S. Patent 247/191, **1998**.

### **Presentations**

26. **(Invited)** How can we increase student success and improve equity in large STEM courses?

Digital Leadership Forum, Pearson Education February, 2023

25. Incorporating Experimental Design into a Bioanalytical Laboratory Course, Biennial Conference on Chemical Education, August 2022

24. **(Invited)** “The Effect of Multiple Assessment Opportunities on Student Achievement in a Large General Chemistry Course,” 2 Year Community College Consortium (2YC3) Meeting, Virtual, Feb. 2022

23. **(Invited)** What is the impact of teaching assistants in a large, active-learning classroom?”

American Chemistry Society Meeting, Virtual, Fall 2021

George C. Pimental Chemical Education Award Symposium in honor of Thomas Wenzel

22. “The Role of Active Learning in Inclusive Teaching and Student Belonging”

American Chemistry Society Meeting, Virtual, Spring 2021

21. “Microfluidic Devices for Inquiry Based Experiments in the Home Setting”

Pittsburgh Conference on Analytical Chemistry, Virtual, Spring 2021

20. **(Invited)** “Facilitating Active Learning in the STEM Classroom”

Workshop, Center for Teaching and Learning, University of Tennessee, Knoxville, Spring 2020

19. “Learning Catalytics Increases Engagement in General Chemistry”

Pearson Education Webinar, October, 2018

18. “Implementing Research-Based Methods for Teaching STEM Classes”

University of Arkansas Pine Bluff Center for Teaching and Learning Workshop, October, 2018

17. “Evaluation of practices for teaching assistants in active learning classrooms”

Biennial Conference on Chemical Education, South Bend, Indiana, July, 2018

16. “Strategies to Promote Active Learning in a Large General Chemistry Course”

American Chemical Society Meeting, New Orleans, Mar. 2018

15. “Community Projects Improve Student Engagement and Communication Skills in Analytical Chemistry Laboratory” Pittsburgh Conference on Analytical Chemistry, Orlando, Feb. 2018

14. **(Invited)** “Learning is Not a Spectator Sport: Active Learning in Analytical Chemistry”

Division of Analytical Chemistry Awards Symposium

American Chemical Society Meeting, Boston, Aug. 2018 (Invited)

13. **(Invited Keynote Speaker)** “Learning is Not a Spectator Sport: Strategies for Effective Active Learning”

Harris Workshop on Teaching Analytical Chemistry, Edmonton, CA, Aug. 2016

12. “Design and Best Practices for Active Learning Classrooms”

Biennial Conference on Chemical Education, Greeley, CO, Aug. 2016

11. “Using Technology to Facilitate Discussion in an Instrumental Analysis Course”

American Chemical Society Meeting, Denver, 2015

10. “Project Based Learning in Analytical Chemistry Laboratory”

Biennial Conference on Chemical Education, Aug. 2015

9. “Analytical Chemistry Students Perform Quality Assurance Tests for a Local Microbrewery”

Pittsburgh Conference on Analytical Chemistry, Chicago, IL, 2014

8. “Active Learning Strategies for Large Analytical Chemistry Lecture and Laboratory Courses”

- Pittsburgh Conference on Analytical Chemistry, Philadelphia, PA, 2013
7. "A New Integrated Laboratory and Lecture Course in Bioanalytical Chemistry"  
Biennial Conference on Chemical Education, Bloomington, IN, 2008.
6. "Strategies to Improve Problem Solving in First Year College Chemistry"  
International Center for First Year Undergraduate Chemistry Education, Boulder, CO, 2007
5. "Using CALM to Implement Indiana State Science Standards"  
Biennial Conference on Chemical Education, West Lafayette, IN, July 2006.
4. "A One Semester General Chemistry Course Designed for a 1:2:1 Curriculum"  
International Center for First Year Undergraduate Chemistry Education, Champaign, IL, 2005
3. "A New Chemiluminescence Method for the Measurement of Nitric Oxide in the Atmosphere"  
Rocky Mountain Symposium on Photons in Chemistry, Estes Park, CO, 1998
2. "A Lightweight Instrument for the Analysis of Total Reactive Oxides of Nitrogen in the Atmosphere"  
American Chemical Society, Fall Meeting, Las Vegas, Nevada, 1997
1. "Historical Record of UV-B Flux at the Earth's Surface by Analysis of Thymine Photodimers in DNA Preserved in Ice Core Pollen"  
University of Colorado Atmospheric Chemistry Symposium, Boulder, CO, 1996

### **Chaired Symposia**

6. "Engaging Students in the Analytical Chemistry – Curriculum and Cognition" Biennial Conference on Chemical Education, August 2022
5. "Active Learning in the Undergraduate Analytical Chemistry Curriculum"  
American Chemical Society Meeting, Virtual, April 2021
4. "Active Learning in the General Chemistry Curriculum"  
American Chemistry Society Meeting, New Orleans, LA, 2018
3. "Innovative Ways to Engage Students in Analytical Chemistry"  
Pittsburgh Conference on Analytical Chemistry, Orlando, FL, 2018
2. "Active Learning in the Undergraduate Analytical Chemistry Curriculum"  
American Chemical Society Meeting, San Francisco, CA, 2017
1. "Active Learning in the Undergraduate Analytical Chemistry Curriculum"  
American Chemical Society Meeting, Denver, CO, 2015

### **Workshops (Indiana University)**

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| 2016       | New Faculty Orientation: Collaborative Learning Training Session for New Faculty   |
| 2016       | Faculty Learning Community Indiana University: Collaborative Learning  |
| 2015       | Master Class: Using technology to facilitate discussion in the collaborative learning studio.<br>(Sponsored by Indiana University Center for Innovative Teaching and Learning) |
| 2015       | Preparing Future Faculty Panel, Indiana University: Workshop on Student Engagement   |
| 2010       | Preparing Future Faculty Panel, Indiana University: Balancing Teaching, Research, and Service  |
| 2007, 2010 | Master Class: Using clickers to promote discussion in a large lecture hall (Sponsored by Indiana University Instructional Support Services)                                    |
| 2007       | Indiana University Freshmen Learning Project Fellow: Selected to participate in a two-week workshop to improve teaching in large lecture settings.                             |

2003-2010 “How to Study for College Level Science Courses” for freshmen at Indiana University  
 2008 Nanoscience Education Workshop Participant: Two-day workshop sponsored by National Center for Learning and Teaching in Nanoscale Science and Engineering, Washington D.C.

### **Science Outreach**

2017 Girls in Engineering, Math, and Science Day (GEMS)  
 2008-2012 Outreach Coordinator: Nanoscience Center, Indiana University  
 a. STEM Diversity Summer Science Camp (2012): Developed hands-on nanoscience activities around the theme of germs for seventy middle school students.  
 b. Nanoscience Projects in Local Schools (2009-2012): Worked with New Technology High School teachers in Bloomington and Columbus to develop nanoscience projects. Three projects involving molecular modeling, radiation, and synthesis of gold nanoparticles were implemented. During these projects ~250 students visited research facilities on the Indiana University campus such as the Cyclotron. A survey developed by the Center for Evaluation and Education Policy (CEEP) indicated that the number of students indicating a preference for STEM degrees doubled as a result of this experience.  
 c. Molecules Matters Teacher Workshop (2010-2012): I developed and taught a two week professional development workshop for middle and high school teachers in nanoscience and project based learning (PBL).  
 d. Nanodays at the Louisville Science Center (2009): Developed three hands-on activities to teach nanoscience concepts to the general public; “Stained Glass Art with Gold and Silver Nanoparticles,” “Lithography,” and “Nanotechnology in Commercial Products.” Recruited and trained 25 Indiana University graduate and undergraduate students to help with the event.  
 2009 Judge for Science Olympiad Finalists, Indiana University  
 2009 Wonderlab Teen Night: Developed a Crime Scene Investigation Activity Based on DNA Analysis.  
 2007-2009 Science in a Snap (A Summer Institute for Teachers): Developed a 2-day workshop at Wonderlab Science Museum to help elementary teachers better understand chemistry concepts set by state standards.