Stanford



Jennifer Schwartz Poehlmann

Senior Lecturer of Chemistry

Curriculum Vitae available Online

Bio

BIO

Reaching out to Stanford's diverse body of students and beyond to share the excitement of scientific discovery has been a growing passion for Dr. Jennifer Schwartz Poehlmann. In addition to coordinating and co-teaching Stanford's freshmen chemistry sequence, she takes a leadership role in developing training programs for teaching assistants and enhancing classroom and lab experiences for undergraduates, while also providing STEM learning opportunities for incoming freshmen and local high school students.

Jennifer Schwartz Poehlmann studied chemistry at Washington University in Saint Louis Missouri (A.B. 2002) before coming to Stanford University as a graduate student (Ph.D. 2008). Her thesis work under Prof. Edward Solomon addressed structural contributions to reactivity in active sites of non-heme di-iron enzymes, including ferritins. She joined the Stanford Center (now Vice Provost) for Teaching and Learning as a Teaching Fellow in 2008. In 2009, she became Lecturer and Introductory Course Coordinator for the Department of Chemistry, and in 2011 was promoted to Senior Lecturer. She has received multiple awards for her teaching and training work, including the Walter J. Gores Award for Excellence in Teaching, Dean's Award for Achievements in Teaching, Hoagland Award Fund for Innovations in Undergraduate Teaching, and Society of Latino Engineers and School of Engineering's Professor of the Year Award.

Teaching

Dr. Schwartz coordinates and co-teaches the introductory course sequence of Chem31A, 31B, and 33 for about 450 students each year. She has also created a set of companion courses (Chem31A-C, 31B-C, and 33-C) designed to provide motivated students an opportunity to build stronger study habits and problem solving tools that help them persevere in the sciences regardless of prior science background. In parallel, she has been involved in the creation and teaching of the Leland Scholars Program, which facilitates the transition to college for incoming freshman intending to study in STEM or pre-health fields.

Instructor Training

Dr. Schwartz has always believed that well-prepared and enthusiastic teachers inspire and motivate learning, yet excellent teaching requires training, feedback, reflection and support. She has worked both within the department and more broadly to help ensure that teaching assistants throughout the university receive the training, practice and mentorship they need to grow and excel as educators. She previously directed the Department of Chemistry's TA Training program and, with the Vice Provost for Teaching and Learning, co-founded and directs the Mentors in Teaching Program, MinT, which provides training and resources to teaching mentors from more than 15 departments on campus. Through MinT, advanced graduate students

learn effective ways to mentor TAs, through mid-quarter feedback, classroom observation, establishment of teaching goals, and workshops that enable new TAs to better engage with students in the classroom.

Enhanced Learning Experiences

Dr. Schwartz has been heavily involved in the development of hands-on, guided-inquiry lab activities that are now fully integrated into lab/lecture courses throughout the introductory general and organic chemistry sequence. Through the “Inspiring Future Scientists in Chemistry” Outreach Program, she is also helping to bring the excitement of exploring real-world chemistry into local high schools. She works with local high school teachers to design lab experiences that reinforce and compliment the chemistry concepts in the California State curriculum. Stanford Chemistry students take these activities to local high schools, providing hundreds of students the opportunity to work with enthusiastic young scientists while getting hands-on experience in chemistry. The program aims to demonstrate how chemistry relates to the ‘real world’ and to promote an appreciation for both science and higher education.

ACADEMIC APPOINTMENTS

- Senior Lecturer, Chemistry

ADMINISTRATIVE APPOINTMENTS

- Director of Undergraduate Studies, Chemistry, (2025- present)
- Senior Lecturer & Introductory Course Coordinator, Stanford University, (2011- present)
- Lecturer & Introductory Course Coordinator, Stanford University, (2009-2011)
- Teaching Fellow, Center for Teaching and Learning, Stanford University, (2008-2018)
- Consultant, Center for Teaching and Learning, Stanford University, (2005-2008)
- Senior Development and Documentation Teaching Assistant, Stanford University, (2004-2007)
- Graduate Research Assistant, Stanford University, (2003-2008)
- Lab Safety Officer, Stanford University, (2003-2008)
- Outreach TA, Stanford University, (2003-2005)
- Research Assistant, Washington University in St. Louis, (2001-2002)
- Summer School Administrator, Elmbrook School District, (2000-2001)
- Board Member, Education for Employment Council Board, Elmbrook District, (1998-1999)

HONORS AND AWARDS

- Undergraduate Teaching Award (student nominated), Phi Beta Kappa (2024)
- GradEd Champion Award, Vice Provost for Graduate Education (2019)
- Safety in Training and Research (STAR) Award, Chemistry (2017)
- Professor of the Year, Society of Latino Engineers (SOLE) and the School of Engineering (2014)
- H&S Dean’s Award for Achievements in Teaching, Stanford University (2012)
- Hoagland Award Fund for Innovations in Undergraduate Teaching, Stanford University (2011-2013)
- Dr. St. Clair Drake Teaching Award, Stanford University (2011)
- Honored as one of the “Heroes Among Us”, Blue Oak Elementary School (2010)
- Walter J. Gores Award for Excellence in Teaching, Stanford University (2008)
- Linus Pauling Teaching Award, Stanford University, Department of Chemistry (2007)
- Centennial Teaching Award for excellence in teaching, Stanford University (2004)

- Honor, Phi Beta Kappa (2002)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Faculty Advisory Board Member, VPUE Summer Bridge Program (2025 - present)
- Faculty Co-Chair, Academic Integrity Working Group (2023 - present)
- Member of Board of Conduct Affairs (formerly BJA), Vice Provost for Student Affairs (2021 - present)
- Operations Committee for The Science Teaching and Learning Center, Stanford School of Humanities and Sciences (2013 - present)
- Curriculum Committee, Stanford Chemistry Department (2012 - present)
- Leland Scholars Program Advisory Board Member, Stanford Vice Provost for Undergraduate Education (2012 - 2024)
- Old Chemistry Design team, Stanford School of Humanities and Sciences (2012 - 2016)
- Undergraduate Studies Committee, Stanford Chemistry Department (2010 - 2012)
- Director of IFS, Inspiring Future Scientists in Chemistry (2009 - present)
- Admissions Interviewer, Alumni & Parents Admission Program for Washington University in St. Louis (2006 - 2007)
- Member, American Chemical Society (2002 - present)
- Member, Alpha Chi Sigma (2001 - present)
- Vice President, Women in Science (2001 - 2002)
- Secretary, Women in Science (2000 - 2001)
- VP, Membership, Alpha Phi Omega (2000 - 2001)
- Member, Alpha Phi Omega (1999 - present)
- VP, Service, Alpha Phi Omega (1999 - 2002)
- Violist, Washington University Chamber and Symphony Orchestra (1999 - 2002)
- Violist, Washington University Quartet (1999 - 2002)
- VP, Fellowship, Alpha Phi Omega (1999 - 1999)
- Member, National Forensics League (1997 - 1999)

PROFESSIONAL EDUCATION

- PhD, Stanford University , Inorganic Chemistry (2008)
- BA, Washington University , Chemistry (2002)

Teaching

COURSES

2026-27

- Chemical Principles I: CHEM 31A (Aut)
- Chemical Principles II: CHEM 31B (Win)
- Exploring Research and Problem-Solving across the Sciences: UAR 45CH (Aut)
- Foundational Concepts and Study Skills for General Chemistry: CHEM 11 (Spr)
- STEMentors in Chemistry: CHEM 31S (Aut)
- Teaching of Chemistry: CHEM 299 (Win)

2025-26

- Chemical Principles I: CHEM 31A (Aut)

- Chemical Principles II: CHEM 31B (Win)
- Exploring Research and Problem-Solving across the Sciences: UAR 45CH (Aut)
- Foundational Concepts and Study Skills for General Chemistry: CHEM 11 (Spr)
- STEMentors in Chemistry: CHEM 31S (Aut)
- Teaching of Chemistry: CHEM 299 (Aut, Win)

2024-25

- Chemical Principles I: CHEM 31A (Aut)
- Chemical Principles II: CHEM 31B (Win)
- Exploring Research and Problem Solving Across the Sciences: CHEM 10 (Aut)
- Foundational Concepts and Study Skills for General Chemistry: CHEM 11 (Spr)
- STEMentors in Chemistry: CHEM 31S (Aut)
- Teaching of Chemistry: CHEM 299 (Aut, Win)

2023-24

- Chemical Principles I: CHEM 31A (Aut)
- Chemical Principles II: CHEM 31B (Win)
- Exploring Research and Problem Solving Across the Sciences: CHEM 10 (Aut)
- Foundational Concepts and Study Skills for General Chemistry: CHEM 11 (Spr)
- STEMentors in Chemistry: CHEM 31S (Aut)
- Teaching of Chemistry: CHEM 299 (Aut, Win)

STANFORD ADVISEES

Doctoral Dissertation Co-Advisor (NonAC)

Josh Arens

Undergraduate Major Advisor

Isabelle Peña

Publications

PUBLICATIONS

- **Tipping Point in the Future Readiness of Artificial Intelligence and Chemistry Education** *JOURNAL OF SCIENCE EDUCATION AND TECHNOLOGY*
  Khoo, J. Z. Y., Hollinger, F., Han, J., Lin, C., Tsai, C., Schwartz Poehlmann, J., Anzola, D., Choo, Y. S. L., Fung, F.
  2026
- **Introducing the Problem-Solving Template as a Tool for Equity: Addressing Incoming Preparation Disparities** *J. Chem. Educ.*
  Schwartz Poehlmann, J. K., Nardo, J. E., Rojas, M., Salehi, S.
  2024; 101 (3): 1332–1340
- **The STEMentors Program: Promoting the Academic Readiness and Community Building of Students within General Chemistry** *JOURNAL OF CHEMICAL EDUCATION*
  Deweese, D., Nardo, J., Applebaum, I., Sundrani, S., Zur, A., Waymouth, R. M., Poehlmann, J., Salehi, S.
  2023; 101 (1): 88-96
- **Using Writing Assignments as an Intervention to Strengthen Acid-Base Skills** *JOURNAL OF CHEMICAL EDUCATION*
  Cox, C. T., Poehlmann, J., Ortega, C., Lopez, J. C.
  2018; 95 (8): 1276–83

- **Developing Graduate Student Teaching Consultants and Mentors at Stanford: The TA Consultant (TAC) and Mentors in Teaching (MinT) Programs** *Practically speaking: A sourcebook for instructional consultants in higher education*
  Dunbar, R. W., Schwartz, J. K., Marincovich, M.
  Stillwater, OK: New Forums Press..2012

- **Hybrid Genetic Algorithm with an Adaptive Penalty Function for Fitting Multimodal Experimental Data: Application to Exchange-Coupled Non-Kramers Binuclear Iron Active Sites** *JOURNAL OF CHEMICAL INFORMATION AND MODELING*
  Beaser, E., Schwartz, J. K., Bell, C. B., Solomon, E. I.
  2011; 51 (9): 2164-2173

- **CD and MCD Spectroscopic Studies of the Two Dps Miniferritin Proteins from Bacillus anthracis: Role of O-2 and H2O2 Substrates in Reactivity of the Diiron Catalytic Centers** *BIOCHEMISTRY*
  Schwartz, J. K., Liu, X. S., Tosha, T., Diebold, A., Theil, E. C., Solomon, E. I.
  2010; 49 (49): 10516-10525

- **CD and MCD studies of the effects of component B variant binding on the biferrous active site of methane monooxygenase** *BIOCHEMISTRY*
  Mitic, N., Schwartz, J. K., Brazeau, B. J., Lipscomb, J. D., Solomon, E. I.
  2008; 47 (32): 8386-8397

- **Spectroscopic definition of the ferroxidase site in M ferritin: Comparison of binuclear substrate vs cofactor active sites** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Schwartz, J. K., Liu, X. S., Tosha, T., Theil, E. C., Solomon, E. I.
  2008; 130 (29): 9441-9450

- **Geometric and electronic structure studies of the binuclear nonheme ferrous active site of Toluene-4-monooxygenase: Parallels with methane monooxygenase and insight into the role of the effector proteins in O-2 activation** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Schwartz, J. K., Wei, P., Mitchell, K. H., Fox, B. G., Solomon, E. I.
  2008; 130 (22): 7098-7109

- **CD/MCD/VTVH-MCD Studies of Escherichia coli Bacterioferritin Support a Binuclear Iron Cofactor Site** *BIOCHEMISTRY*
  Kwak, Y., Schwartz, J. K., Huang, V. W., Boice, E., Kurtz, D. M., Solomon, E. I.
  2015; 54 (47): 7010-7018

- **Spectroscopic Studies of Single and Double Variants of M Ferritin: Lack of Conversion of a Biferrous Substrate Site into a Cofactor Site for O-2 Activation** *BIOCHEMISTRY*
  Kwak, Y., Schwartz, J. K., Haldar, S., Behera, R. K., Tosha, T., Theil, E. C., Solomon, E. I.
  2014; 53 (3): 473-482

- **Structural and Spectroscopic Properties of the Peroxodiferric Intermediate of Ricinus communis Soluble Delta(9) Desaturase** *INORGANIC CHEMISTRY*
  Srnec, M., Rokob, T. A., Schwartz, J. K., Kwak, Y., Rulisek, L., Solomon, E. I.
  2012; 51 (5): 2806-2820

- **Effects of multiple pathways on excited-state energy flow in self-assembled wheel-and-spoke light-harvesting architectures** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Song, H., Kirmaier, C., Schwartz, J. K., Hindin, E., Yu, L., Bocian, D. F., Lindsey, J. S., Holten, D.
  2006; 110 (39): 19131-19139

- **Mechanisms, pathways, and dynamics of excited-state energy flow in self-assembled wheel-and-spoke light-harvesting architectures** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Song, H., Kirmaier, C., Schwartz, J. K., Hindin, E., Yu, L., Bocian, D. F., Lindsey, J. S., Holten, D.
  2006; 110 (39): 19121-19130

- **Comparison of excited-state energy transfer in arrays of hydroporphyrins (chlorins, oxochlorins) versus porphyrins: Rates, mechanisms, and design criteria** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Taniguchi, M., Ra, D., Kirmaier, C., Hindin, E., Schwartz, J. K., Diers, J. R., Knox, R. S., Bocian, D. F., Lindsey, J. S., Holten, D.
  2003; 125 (44): 13461-13470

- **Synthesis and excited-state photodynamics of a perylene-monoimide-oxochlorin dyad. A light-harvesting array** *JOURNAL OF PHYSICAL CHEMISTRY B*

Muthukumaran, K., Loewe, R. S., Kirmaier, C., Hindin, E., Schwartz, J. K., Sazanovich, I. V., Diers, J. R., Bocian, D. F., HOLTEN, D., Lindsey, J. S.
2003; 107 (15): 3431-3442

- **Synthesis and electronic properties of regioisomerically pure oxochlorins** *JOURNAL OF ORGANIC CHEMISTRY*
  Taniguchi, M., Kim, H. J., Ra, D. Y., Schwartz, J. K., Kirmaier, C., Hindin, E., Diers, J. R., Prathapan, S., Bocian, D. F., HOLTEN, D., Lindsey, J. S.
  2002; 67 (21): 7329-7342
- **Synthesis and photophysical properties of light-harvesting arrays comprised of a porphyrin bearing multiple perylene-monoimide accessory pigments** *JOURNAL OF ORGANIC CHEMISTRY*
  Tomizaki, K., Loewe, R. S., Kirmaier, C., Schwartz, J. K., Retsek, J. L., Bocian, D. F., HOLTEN, D., Lindsey, J. S.
  2002; 67 (18): 6519-6534
- **Synthesis and Photophysical Properties of Light-Harvesting Arrays Comprised of a Porphyrin Bearing Multiple Perylene-Monoimide Accessory Pigments** *J. Org. Chem*
  Tomizaki, K., Loewe, R. S., Kirmaier, C., Schwartz, J. K., Retsek, J. L., Bocian, D. F., Holten, D., Lindsey, J. S.
  2002; 67 (18): 6519-6534

PRESENTATIONS

- Web Resource: Dissemination of Chemistry Guided Inquiry Lab Materials - K-12 teachers and high-school students interested in research
- Web Resource: Setting the Stage for the Class - Consortium to Promote Reflection in Engineering Education (January 2016)
- Web Resource: Mentors in Teaching (MinT) Program
- Web Resource: Grad Teaching @Stanford
- News Article: Pre-ed group brings together esteemed faculty to share personal stories of teaching careers - The Stanford Daily (November 21, 2014)
- Blog Post: So many questions, so little time; A Stanford Chemistry Professor on how Piazza increases participation and efficiency - Piazza Professors Blog
- Blog Post: New Approaches to Exam Prep at Stanford: Making the Practice Test Count - Stanford Teaching Commons (April 7, 2014)
- Blog Post: Getting it Right: What's Working in TA Training? - Stanford Teaching Commons (May 23, 2013)
- Poster: Leveling the Playing Field in Large Lecture Courses - Stanford Gallery Walk, Kick-Off to Year of Learning (October 2, 2015)
- Presentation: Inspiring future scientists in chemistry: Leveraging resources that bring together high school and graduate students as well as teachers - American Chemical Society 248th National Meeting (August 2014)
- Presentation: Why failure is so important to learning and science - and how to succeed because of it! - First annual Stanford Pre-Collegiate Science Conference (March 15, 2014)
- Panel Discussion: Aligning University Expectations with High School Instruction - American Chemical Society Western Regional Meeting (October 3, 2013 - October 6, 2013)
- Presentation: Introducing Stanford Freshman to Science Writing through Calibrated Peer Review - Biennial Conference on Chemical Education (July 29, 2012 - August 2, 2012)
- Keynote: Becoming a Scientist - Stanford Society of Women Engineers Exploring New Worlds Conference (May 5, 2012)
- Talk: Strategies for Teaching Assistant Training and Support during Implementation of Process-Oriented Guided Inquiry Learning . . . - American Chemical Society 231st National Meeting & Exposition (March 26, 2006 - March 30, 2006)