

JEFFREY ALAN STATLER

Professor, Lecture Demonstrator
Department of Chemistry
University of Utah

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PRESENT POSITION

Assistant Professor, Lecture Demonstrator	2011–2014
Associate Professor, Lecture Demonstrator	2014–2020
Professor, Lecture Demonstrator	2020– <i>present</i>

Teaching Responsibilities:

• General Chemistry I and II (CHEM 1210/1220)	2012– <i>present</i>
• Summer Enrichment Chemistry (CHEM 1060), Director	2017– <i>present</i>
• General Chemistry I - Sandy Campus	2022
• Analytical Chemistry (CHEM 3000)	2012
• AMES Chemistry (Cottonwood High Campus)	2011–2012

Administrative Responsibilities:

- Lecture Demonstrator Coordinator, including the Faraday Lecture series
- Teaching Assistant Budgeting Oversight
- Teaching Assistant Supervision; includes assignments, training, mentoring and managing
- Scheduling Assistant; courses and events
- Textbook Adoption Liaison with campus bookstore
- Audio-visual Lecture Support

EDUCATION

PhD, Chemistry (emphasis in education)	University of Utah	2021
M.S. Chemistry (emphasis in instruction)	University of Utah	2003
B.S. Physics (additional emphasis in mathematics)	University of Iowa	1983

PREVIOUS POSITIONS

Kearns High School	1996-2011
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AP Chemistry, Concurrent Enrollment Chemistry, Basic & Honors Chemistry, Honors Physics

University of Utah	from 1999
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Summer Enrichment Chemistry, Analytical Chemistry

AWARDS AND NOMINATIONS

• Parry Faculty Award, Department of Chemistry, Undergraduate Education	2020
• Sigma Chi Fraternity Outstanding Professor & Mentor Awards	2015-2018
• ASUU Student Choice Award	2016
• College of Science Teaching Award; Excellence in General Education	2016
• LDS Student Association Excellence in Education Award	2014
• Granite Education Foundation Excel Award	2010
• City of Taylorsville Proclamation of Gratitude and Commendation	2010
• American Chemical Society Rocky Mountain Region Outstanding Teacher Award	2008
• Granite School District's Concurrent Enrollment Outstanding Educator of the Year	2006
• American Chemical Society Salt Lake Section Outstanding Teacher Award	2004
• Advancement Award Scholarship	2002
• Sally Mae Stevens First-Year Teacher Award	1990

COMMITTEES

Public Engagement Committee (2021-present)

Peer-Teaching Mentoring Committee (2021-present)

Teaching Assignment Advisory Group (2021-present)

Undergraduate Education Committee (2011-2020)

UPSTEM Chemistry Articulation Team (2019-2020)

General Education Curriculum Committee (UGCC), College of Science Representative, U of U (2019-present)

Career-Line Faculty Review Committee, Department of Mathematics (2019-2021)

SERVICE, OUTREACH AND HIGHLIGHTS

- Assisting professors in negotiating the pandemic-governed, large-enrollment educational landscape.
- Graduate Teaching Assistant assignments; training, supervision, mentorship, and support for Chemistry graduate students; 35-45 students per semester.
- Undergraduate Teaching Assistant assignments; recruitment, selection, training, supervision and mentorship; between 30-50 students per semester.
- Networking with area high schools, communities and professionals towards student recruitment, Department promotion and demonstration events; Park City, Murray, Cottonwood, Real Academy, Saratoga Springs, East High, West High.
- Organizing and orchestrating field trips to private industry and government facilities; IM Flash, Dugway Proving Grounds.
- Recruiting and hosting seminar speakers; professors from across campus, private sector representatives as well as visits from President Watkins.
- Conducting in-person interviews with parents and their prospective students considering participation in our summer enrichment program.
- Orchestrating numerous yearly demonstration shows, both on and off-campus, including but not limited to the Department's recently-expanded Faraday Lecture series.
- Redesigned General Chemistry I and II so as to be more student-interactive; following a problem-solving model, students respond to questions with tutorage from undergraduate lecture assistants. These courses are now "flipped", asking students to read, watch videos and do homework before lecture.
- Support, guidance, recommendations and assistance with Canvas use and access, especially for professors in General Chemistry.
- Training, support and problem-solving with professors (especially in General Chemistry) utilizing online homework, textbook, and student-response technology.
- Developing new and updated demonstrations, including "Microscale Extraction of Liquid Oxygen from a Cryogenic Mixture Formed through Condensation of Ambient Air" (2018), *Journal of Chemical Education*, 95(1), 116-120.
- Implementing peer-reviewed, demonstration-driven, informal writing assignments used with large-enrollment general chemistry courses.
- Research into the development and use of General Chemistry student learning objectives (SLOs); statements and clarifications regarding specifically what are the important skills and concepts for students to develop/master?
- Presentation at ACS national convention in New Orleans, LA.
- Attended the Cottrell Scholars National Graduate Teaching Assistant Workshop in Atlanta, GA.
- ACS Student Chapter Demonstration Assistance and Consultation.
- Daily audiovisual support and problem-solving for all chemistry, math and biology courses taught in HEB classrooms.
- Undergraduate Instrumentation Account oversight and regulation; helping equitably replace/update/modernize equipment used in undergraduate teaching labs (HEB & CSC).
- Teacher observations, report writing and evaluations in support of tenure-line faculty promotions for the Department of Mathematics.
- Department bookstore liaison, facilitating timely textbook adoptions and coursework material listings.

TEACHING PHILOSOPHY

Since joining the University of Utah in 2011, I have had the pleasure of working with thousands of wonderful students from extremely diverse backgrounds in my General Chemistry, Analytical Chemistry and Summer Enrichment courses. Equally as rewarding has been the privilege of working with and teaching alongside many exemplar faculty and highly skilled graduate teaching assistants here in the Department of Chemistry.

Although I do occasionally instruct smaller-enrollment analytical chemistry courses (36-48 students) and summer enrichment courses (110 students), my current and most common teaching responsibilities are large-enrollment (300-350 students) General Chemistry courses. I utilize in-lecture student response questions (“clickers”) and chemical demonstrations to engage the maximum number of students. Over the past six years, I have implemented and continue to refine a “flipped classroom” model for my large general chemistry courses. Students are asked to read, watch videos and tackle homework related to topics often yet to be discussed *en masse*, freeing up ‘lecture time’ for group problem-solving, questions, remediations and chemical demonstrations. My students seem to genuinely enjoy the peer interactions allowed through in-class problem-solving and the associated student-response questions; I am usually pleasantly surprised with their end-of-semester feedback.

Another one of my roles here at the University of Utah Department of Chemistry is that of making teaching assistant (TA) assignments. This includes a key roll in managing and training Graduate Teaching Assistants, as well as recruiting, interviewing and hiring Undergraduate TA's. While many aspects of our current model function well, this undertaking is always in evolution with our changing populations and department/course needs.

PERSONAL & RESEARCH STATEMENT

In addition to refining and developing lecture demonstrations, I am very academically interested in investigating the effects of several variables on student success in chemistry. While my Master's Degree thesis revolved around the development of inquiry-based laboratory experiments in freshman (general) chemistry, my doctoral research delves more deeply into how lecture demonstrations may influence student performance in, and attitudes toward, chemistry. Subsequent to my journal publication detailing the production of liquid air, I have begun to collect preliminary student performance and attitude data in an effort to analyze student successes and perspectives as they correlate to various teaching modalities and the optimization of the presentation of chemical demonstrations in general. These queries will help me formalize these thoughts and studies regarding maximizing student success. I have several *chemical education* papers in the works and intend to publish these as soon as possible.

In the near future, I plan on continuing work toward furthering the excellence of our ever-evolving General Chemistry program. This will also likely include experimenting with various teaching pedagogies designed to assist students in their efforts towards higher levels of mastery and preparation for future courses. In the coming years I will continue with chemical education research, focusing on maximizing the *effectiveness* of chemical demonstrations, engaging students in large class settings, as well as networking with other educators throughout country.

The bulk of my outreach activities revolve around the Faraday Lectures and the extensive networking associated with the marketing and planning of our Summer Enrichment course (CHEM 1060). Since expanding our Faraday Lectures to cover three evenings, surely we reach nearly 1000 *young-at-heart* attendees yearly. During the organization and implementation of the Summer Enrichment program, I network with and travel to many schools and businesses throughout the Wasatch front and beyond. Attempting to categorize, summarize and enumerating these efforts brings four activities to mind; ➤ recruiting seminar speakers (President Watkins, Head of the Utah Poison Control Center, State Crime Lab Supervisor, Chief of Radiology) ➤ designing field trips (IM Flash, Dugway Proving Grounds) ➤ visiting high schools (Park City, Murray, Real Academy) ➤ meeting with individual parents and their talented young students (both on Campus and at their individual schools).