

Lisa A. Zuraw
Chemistry Department, The Citadel
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EDUCATION

Ph.D., Biophysical Chemistry, 1988
Duke University, Durham, NC

B.A., Chemistry, 1982
Saint Anselm College, Manchester, NH

PROFESSIONAL EXPERIENCE

Professor of Chemistry 2011 – present

Associate Professor of Chemistry, 1997–2011

Assistant Professor of Chemistry, 1992-1997

Visiting Professor, 1990 – 1992 The Citadel, Charleston, SC

- Teach Biochemistry, Physical Chemistry, Forensic Chemistry, General Chemistry and Introduction to Chemistry courses and laboratories at undergraduate level
- Teach Introduction to STEM and Forensic Science online in the MEd program
- Krause Leadership Fellow
- Develop and write laboratory experiments, Develop syllabi and assess courses
- Incorporate technology into the classroom
- Member of the Faculty Assessment and Analysis Team (2010 – 2014)
- Academic advisement of students
- Chair of Faculty Council 2003-2004; Vice-Chair 2002-2003
 - Participated in Provost Search Process and SACS accreditation
 - Reviewed charters for Faculty Committees
- Recipient of the Medbery Award for Excellence in Teaching at The Citadel.
- Initiate WISE – Women in Science and Engineering program and serve as Faculty Advisor
- Develop the BS Biochemistry Specialty degree program at The Citadel and purchase equipment and set-up the Biochemistry laboratory.
- Faculty advisor for the Citadel Student Affiliate American Chemical Society
- Lead students doing undergraduate research in the area of Biochemistry and Chemical Education.
- Secured financial support for supplies and instrumentation from Citadel Fund.
- Various committee work including search committees in Chemistry and Biology, four Post-Tenure Review, Faculty Council, Curriculum, Core Curriculum, Research, Faculty Evaluation, and Pre-Health.
- Involve students in outreach activities in the community
- SACS Accreditation Organization & Administration Team member

Department Head of Chemistry, 2006-2008, 2010 - 2014,
The Citadel, Charleston, SC

- Manage department of 8 tenure/tenure-track faculty, 2 staff and several adjunct teaching positions serving approximately 600 students per semester
- Write performance evaluations and classroom observations of faculty and staff
- Recruitment and hiring of permanent and temporary faculty and staff
- Schedule courses including instructors and locations for academic year and summer sessions
- Prepare reports for The American Chemical Society to maintain certification and internal assessment reports for courses and programs using Taskstream.
- Recruit and retain students to major in Chemistry
- Seek candidates/nominations and select student scholarship and academic awards as well as faculty teaching and research awards
- Collaborate with other departments to develop programs – BA in Chemistry with Teaching Specialization and a minor in Biochemistry and Molecular Biology
- Oversee department budget as well as two donor funds
- Maintain department facilities including instrumentation and renovations of 52,000 sq. ft. Byrd Hall
- Procure funds for student travel to present research, the repair/upgrade of facilities and instrumentation and other needs of the department
- Prepare brochure and department website to promote department
- Edit the departmental section of the College Catalogue
- Participate in the Strategic Planning process
- Member of Institutional Program Assessment Committee investigating policies and best practices in the area of sexual assault, harassment and bias based on race and gender.
- Leadership in Science Technology Engineering and Math(STEM)Initiative for High School Teachers

Consultant for Advanced Placement Chemistry 1997- present
College Board, New York, New York

Chair, AP Chemistry Test Development Committee 2001-2004.

- Prepare agenda for meetings
- Lead two three/four day meetings per year
- Plan strategy to ensure tasks were completed including writing assignments
- Conduct final review of Examinations
- Consult on possible questionable items

Consultant for College Board on Advanced Placement Chemistry (cont.)

Member, Chemistry Test Development Committee 1997-2004, 2006-07

- Worked with committee members, Chief Reader and staff from Educational Testing Service (ETS) to prepare the three Advanced Placement Examinations in Chemistry each year. The exams need to fairly assess chemistry knowledge of the students. Internal and external consistency must be maintained.
- Review of content covered on the examination as well as the AP course curriculum and format of the examination
- Write Test Questions
- Analyze data from comparability study of AP grades with college grades

Test Item Writer 2008 – present.

- Write multiple choice and free response items for revised curriculum and assessment for the AP Chemistry Exam.

Faculty Consultant for Educational Testing Service (ETS) on the Advanced Placement Examination,

Chemistry Reading, 1994-1996, 2000, 2002, 2008-2010, 2013-17. 2020, 2021, 2022
Participated in setting the standards for grading of the free response questions on the Advanced Placement Examination in Chemistry and graded free response questions on the examination.

Consultant for ETS on College Level Examination (CLEP) Natural Science Test 2005-2006

Wrote questions for the CLEP Natural Science Test, developed test and set grades.

Member of CLEP Chemistry Test Development Committee, College Board 2014 – present, Chair 2017-2020

Write and review questions for test as well as review the curriculum.

Prepared white paper for College Board on comparison of AP Chemistry and CLEP Chemistry Examination.

Reviewed Modern States Educational Alliance Online AP Chemistry course at the request of College Board.

North Carolina School of Science and Mathematics, Durham, NC (on leave)

Instructor of Chemistry, 2008-2010

- Teach Advanced Placement Chemistry, Honors Chemistry, Forensic Science and Organic Chemistry
- Advisor for Science Olympiad Team
- Faculty participant of the joint WISE (Women in Science and Engineering) program with NC State, Member of WISE Leadership Team
- Academic advisement of students
- Developed mini-term course on Cooking and Food Chemistry

Medical University of South Carolina, Charleston, SC

Sabbatical Research August 2004-August 2005

- Investigated role of the stabilizing interactions between nucleolin and mRNA of the oncogene, bcl-2.
- Award of financial support provided by MUSC Faculty Research Program Grant through NSF/EPSCoR Research Infrastructure Improvement Grant for Undergraduate Faculty and the Citadel Development Foundation.

Postdoctoral Fellow September 1989 - August 1990

- Performed research in the area of DNA mutagenesis resulting from anti-folate cancer drugs. Received MUSC Postdoctoral Fellowship.

SELECTED GRANTS

Co-Pi on NSF grant, Collaborative Research: EMSO Variability Changes during Abrupt Climate Events, 2021-2024. Citadel portion \$134,000.

Co-PI on NSF Robert Noyce Teacher Scholarship Program for Undergraduate and Graduate Students, \$1.2 million, 2013-2016.

SELECTED PUBLICATIONS

Zanin, M.K.B. DeStefano, J.W., Capers, P. I., Zuraw, L. A Medical Hypotheses, to be submitted August 2021.

Ishimaru, D., Zuraw, L., Tamalingam, S., Sengupta, T., Bandyopadhyay, S., Reuben, A., Fernandes, D., and Spicer, E. (2010)Journal of Biological Chemistry, **285** 27,182-27,191.

Bevsek, H., Brown, S., Crawford, K., Hemingway, R., Mabrouk, S., Richardson, T., Rushing, C., and Zuraw, L. Introduction to the Chemistry Laboratory I, 2006.

Rushing, C., Crawford, K., Mabrouk, S., Richardson, T. and Zuraw, L. Introduction to the Chemistry Laboratory II, 2006.

Zuraw, L. (2005) AP Central, apcentral.collegeboard.com/members/article/1,3046,149-

0-0-45234,00.html.

Frederico-Zuraw, L., Kunkel, T., and Shaw, B.R. (1993) *Biochemistry*, 32 6523.

Frederico-Zuraw, L., Kunkel, T., and Shaw, B.R. (1990) *Biochemistry*, 29 2532.

PATENTS

LoPresio, P and Zuraw, L “Antimicrobial Solution for Use with Dental Appliances Patent “ 10182573, awarded January 22, 2019.

LoPresio, P. and Zuraw, L. “ Citrus Based Antimicrobial Solution” Patent Application # 10182773, 2019

SELECTED REVIEWS

Journal of Chemical Education, 1998-present.

Chang, General Chemistry, 7th Edition, McGraw Hill, 2010.

Burdge, Chemistry, 3rd Edition, McGraw Hill, 2010.

Reviewer of WebAssign website materials, 2009 and 2010.

Ebbing/Gammon, General Chemistry, Eighth Edition, Houghton Mifflin, 2007.

Kaplan AP Chemistry 2006 Edition, Simon and Schuster, 2005.

South Carolina Department of Education On-site reviewer for Certification of the Teacher Ed Program at Wofford College. 2002.

Reviewer of Chemistry Content Standards for Certification of Teacher Education Programs in Chemistry at Wofford, Converse (B.S. and M.S.), Coker and Erskine College, 2001.

INVITED TEACHER WORKSHOP PRESENTATIONS

STEM Ambassador Program through Education School Grant from the SC Department of Education 2015, 2016, 2017

Advanced Placement Chemistry 5 day workshop, Charleston, SC 2017.

Advanced Placement National Conference, Las Vegas, NV 2007.

Advanced Placement National Conference, Orlando, FL. 2004.

Advanced Placement Science Specialty Workshop, Bellevue, Washington. July 2003.

Advanced Placement Science Specialty Workshop, 2-day workshop in Philadelphia, Pennsylvania. November 2002.

Advanced Placement National Conference, Chicago, IL. July 2002

College Board Test Development Committee, College Board Southwest Regional Teacher Workshop, Texas Christian University, Fort Worth, TX. 1998

SELECTED PRESENTATIONS

D. Dills, SM McAfee, B.A. Adair and L. Zuraw “An Educational Study on the Use of Models to Teach Molecular Shape” American Chemical Society National Conference, San Diego, CA, April 2017.

D. Williams, A. Darkazalli, J. Boggs, L. Zuraw and C. Sims-Robinson “The Weight of Fatty Acids: An examination of a high-fat diet and cognition” American Chemical Society National Conference, San Diego, CA, April 2017.

D. McEntyre, S. Hughes, C. Sharpe, and L. Zuraw “Playing with Fire; Service Learning in General Chemistry”, Leadership Conference, Charleston, SC 2017.

K. Page and L. Zuraw “Discoloration of Grapefruit Seed Extract” American Chemical Society National Conference, Dallas, Texas, March 2014.

M. Hill, L. Zuraw, and S. Almond “High temperature emulsifier stability in oilfield drilling chemistry” American Chemical Society National Conference, New Orleans, 2013

M. Hansen, E. Siebert, and L. Zuraw., “Learning from Student Misconceptions on the AP Chemistry Exam”, AP National Conference, Las Vegas, NV, 2007

L. Zuraw, et. al., “Role of Nucleolin and Ebp1 in Regulation of bcl-2 mRNA Stability in Human Leukemia HL-60 Cells, American Association of Cancer Research, Anaheim, CA, 2005

Organizer and Moderator of Women Chemist Meeting at 2002 Southeastern Regional Meeting of American Chemical Society

LEADERSHIP DEVELOPMENT ACTIVITIES

Leading Change, American Chemical Society, New Orleans, LA, April 2013

Extraordinary Leaders, American Chemical Society, Raleigh, NC at SERMACS.
November 2012

South Carolina Regional Leadership Forum on “Advancing Women’s Leadership”
sponsored by American Council on Education, March 2010

Leadership Development Workshop for STEM Women Faculty sponsored by
ADVANCE at the University of Maryland, Baltimore, 2007

South Carolina Leadership Development Forum for Women in Higher Education
sponsored by South Carolina Women in Higher Education and American Council on
Education Office of Women in Higher Education, Pawley’s Island, SC. 2007

Chairing the Academic Department hosted by the American
Council on Education in Washington, DC. 2006

Women in Cancer Research Leadership Development Workshop at American Association
of Cancer Researchers, Anaheim, CA. 2005

SELECTED PROFESSIONAL DEVELOPMENT ACTIVITIES

SENCER Summer Institute – 5 day workshop on integrating civic engagement and
responsibility into science education, Stony Brook, NY 2017.

Transforming STEM Higher Education, AAC&U Meeting, Boston, 2016.

Citadel On-line Faculty Teaching Academy – Eight week on-line course to prepare
faculty for teaching in the on-line environment. Summer 2013

Fostering Innovation, American Chemical Society, Raleigh, NC at SERMACS,
November 2012.

Effective Negotiation Techniques, COACH, Raleigh, NC at SERMACS, November 2012.

Association of American Colleges and Universities Meeting on General Education and
Assessment: New Contexts, New Cultures, February 2012, New Orleans, LA.

NSF/cCWCS sponsored workshop in Forensic Science at Williams College June 2011.

“Choosing a Published Instrument to Assess Student Learning” Magna Pubs. 2007

Workshop sponsored by SC BRIN/SC EPSCoR/SCAS on “Mentoring and Supervising
in an Academic Setting”. 2004

Workshop sponsored by SC BRIN/SC EPSCoR/SCAS

on "Developing a Research Program at Four Year Colleges and Universities." 2003

SELECTED EDUCATIONAL ACTIVITIES

Assisted with setting up and integrated service learning outreach activities into the Regional and State level Science Olympiad held at The Citadel 2019.

Assisted with activities for the local STEM Festival 2018-2020

Service learning outreach activities integrated into the General Chemistry Laboratory for Chemistry Majors, Biochemistry I, Biochemistry II and Biochemistry Laboratory serving Richland ALERT and Burke Honors Chemistry students. 2016-2017

Lead Senior Leadership Integration Seminar (SLIS) at Hollings Marine Laboratory for STEM majors at the Citadel. 2014-2017

Set-up a weekly mentoring program with Citadel WISE members and local high school students. 2013

Developed and lead two sessions of a week-long forensic science summer camp for 6th-8th graders from Title I Schools as part of a Gear-Up grant. July 2012 and 2013

Organize and Participate in Science Night activities and visits to the campus by local school groups.

Assisted with hands-on science activities and demonstrations at the North Carolina State Fair with the American Chemical Society. October 2010.

Member of the Science Technology Engineering and Mathematics (STEM) leadership team at The Citadel. 2006-2008.

Organize and participate in National Chemistry Day with the local American Chemical Society. 2003-2019

Lowcountry Regional Science Fair Judge, Chemistry and Biochemistry Junior and Senior Divisions. 2006-2019

Member of Hands-on Science Task Force. Joined educational and community leaders to form/ institute a Science Materials Resource Center for Charleston School District.

Exhibit Guide at the South Carolina Aquarium. Conduct behind the scenes tour, assist visitors at the touch tank and answer visitor questions in the galleries of the aquarium. 2002-2006