

SANDRA RUSSO-RODRIGUEZ PH.D.

Chemistry Department
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Lecturer in Chemistry
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EDUCATION

- 1979-1983 Massachusetts Institute of Technology, Cambridge, MA
Ph.D. Organic Chemistry, September 1983
Thesis: "Synthesis of Dihydrodiols and Diol Epoxides of Fluoranthene"
- 1976-1979 University of Puerto Rico, Rio Piedras, PR
B.Sc. Chemistry, Magna Cum Laude, May 1979. *Honors*: Four prizes at graduation
Performed undergraduate research on porphyrin analogs of cytochrome P-450.

PROFESSIONAL EXPERIENCE

- BROWN UNIVERSITY, Providence, RI October 15, 2005-present
Senior Lecturer in Chemistry, Department of Chemistry 2017-present
Lecturer in Chemistry, Department of Chemistry 2005-2017
Develop active collaborative learning pedagogy in chemistry courses. Create and improve chemistry courses, problem sessions and online resources to increase success of diverse students in chemistry courses at Brown University.
- Instructor of Chem 330T/332 program and online summer Chem 100 web tutorial.
 - Instructor of Chem 100 course and developer/manager of its problem sessions
 - Tutor and support of general chemistry and organic students.
 - Randall sophomore advisor and freshman advisor; mentor of diverse students.
 - Conduct ethics training of graduate students in chemistry department.
- CAPE COD COMMUNITY COLLEGE, Barnstable, MA June 2002-Aug. 2005
Adjunct Professor, Chemistry
Instructor of the Summer General Chemistry I Lecture and Laboratory. Taught one semester of General Chemistry in 7 weeks. Focused on problem solving by having daily problem sets.
- POLAROID CORPORATION, Waltham MA September 2002-June 2003
Research Chemist, Digital Imaging
- Synthesized heterocyclic dyes for exploratory novel thermal/digital imaging.
 - Explored synthesis of novel compounds and produced quantities for imaging studies.
- CONSULTANT January 2000-June 2002
- Conducted prior art literature searches to support patent filings at Boulder Scientific Company.
- BOULDER SCIENTIFIC COMPANY, Mead CO March 1998-December 1999
Research Scientist
- Developed metal-catalyzed cross-coupling methods for custom heterocyclic compounds and novel metallocene ligands. Explored practical scalable synthesis. Several patents.

- Conducted prior art searches to support patent filings and served as liaison between research scientists, company owner and the Washington, DC-based patent lawyer.

AMGEN, INC., Boulder, CO

October 1990-December 1997

Research Scientist II

1994-1997.

Medicinal chemistry, Inflammation and Neurobiology, chemistry supervisor and team member

- Designed and synthesized constrained heterocyclic compounds as inhibitors of cytokine Tumor Necrosis Factor or TNF. Synthesized medium-ring azepine hydroxamates. Four patents.
- Collaborated with Amgen Neurobiology in Thousand Oaks, CA and Alanex in San Diego, CA. Made diverse compounds for *in vitro* testing for activity against Neuropeptide Y receptor. Achieved a lead compound. Presented research in meetings in San Diego, CA and medicinal chemistry updates in Boulder, CO

Research Scientist I

1990-1994.

Antisense nucleic acids research, chemistry supervisor of 2 scientists and team member.

- Achieved solution and solid-phase synthesis of 5'-modified backbone oligonucleotide analogs for evaluation in Antisense program, resulting in one US patent.
- Synthesized steroid- and lipid- conjugates of oligonucleotides to improve cellular delivery in Amgen's Restenosis program and support of various biology research programs.
- Purchased and managed GE Omega 300 MHz NMR Instrument. Trained users and maintained instrument.

POLAROID CORPORATION, Cambridge MA

May 1988-July 1990

Research Scientist, Exploratory Chemical Research

- Synthesized leuco azamethine yellow dyes for laser-addressed electronic imaging resulting in two US patents.
- Synthesized custom releasable heterocycles for silver imaging and documented finds.
- Managed, installed and maintained Bruker 300 MHz NMR for Chemical Research division. Trained users and interfaced with Bruker on a regular basis to update instrument.

INSTRUMENTATION LABORATORY, Lexington MA

April 1986-April 1988

Scientist, Synthetic Organic Chemistry

Synthesized compounds for development of diagnostic systems

- Synthesized drug derivatives and conjugates as immunogens or markers.
- Synthesized calcium ionophores for development of clinical electrode.
- Synthesized custom compounds for diverse applications and analytical instruments.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA

Sep 1983-April 1986

Postdoctoral Associate. Advisor: William R. Roush.

Synthesis of Trichothecene mycotoxins

- Synthesized glucuronides of anguidine and T-2 toxin; prepared ¹⁴C-anguidine for metabolic and toxicology studies.
- Synthesized novel structural analogs of anguidine for toxicology evaluation.
- Several publications. Participated in FASEB and Gordon Research conferences on Trichothecene Mycotoxins in summer 1984 and summer 1985

PUBLICATIONS

PATENTS

US 6407289, June 18, 2002

“Synthesis of N₄, N₄'-diphenyl-N₄, N₄'-di-m-tolylbiphenyl-4,4'-diamine from an unsymmetrical amine” Russo-Rodriguez, S.; Sullivan, J.M.

US 6291699, Sep. 18, 2001.

“2-Alkyl-4-(2,6-dialkylphenyl)indenes”, Birmingham, J.M.; Russo-Rodriguez, S.

CA 2368794 A1, August 2, 2001

“Synthesis of N₄, N₄'-di-m-tolyl-biphenyl-4,4'-diamine from an unsymmetrical amine”, Sullivan, J.M. and Russo-Rodriguez, S.

WO 2001014388 A1, March 1, 2001

“2-Alkyl-4-(2,6-dialkylphenyl)indenes”, Birmingham, J.M.; Russo-Rodriguez, S.

WO 2001055087, 2001.

“Synthesis of N₄, N₄'-diphenyl-N₄, N₄'-di-m-tolylbiphenyl-4,4'-diamine by a nickel-catalyzed coupling” Russo-Rodriguez, S.; Sullivan, J.M.

US 6107291, August 22, 2000.

“Azepine or larger medium ring derivatives and methods of use” Russo-Rodriguez, S.E.; Koch, K.; Termin, A.; Hummel, C.

WO 9932451, July 1, 1999.

“Preparation of azepine hydroxamates and related compounds as inhibitors of metalloproteinase and tumor necrosis factor release” Russo-Rodriguez, S.E.; Koch, K.; Termin, A.; Hummel, C.

“Substituted fused heterocyclic anti-inflammatory compounds”, Amgen Patent disclosure, Russo-Rodriguez, S.E.; Koch, K.

WO 9906410, February 11, 1999.

“Hydroxamic acid substituted fused heterocyclic metalloproteinase inhibitors” Thomson, D.S.; Koch, K.; Hwang, C.K.; Russo-Rodriguez, S.E.; Hummel, D.

US 5864031, January 26, 1999.

“Process for preparing 5' dithio-modified oligonucleotides” Russo-Rodriguez, S.E.; Koga, T.M.

WO 9604295, February 15, 1996 and EP 772622, May 5, 1997.

“Preparation of 5'-Dithio-modified Oligonucleotides for nucleic acid therapeutics and diagnostics” Russo-Rodriguez, S.E.; Koga, T.M.

US 5350870, September 27, 1994. “Leuco dyes and thermal imaging: reduced bubble formation due to absence of thermally fragmented moieties” Boggs, R.A.; Cournoyer, R.L.; Ellis, E.W.; Russo-Rodriguez, S.E.; Telfer, S.J.; Waller, D.P.; Zuraw, M.J.

US 5236884, August 17, 1993.

“Leuco dyes and thermal imaging methods and materials using them” Boggs, R.A.; Cournoyer, R.L.; Ellis, E.W.; Russo-Rodriguez, S.E.; Telfer, S.J.; Waller, D.P.; Zuraw, M.J.

PEER REVIEWED JOURNAL ARTICLES

W.R. Roush and S. Russo-Rodriguez “Trichothecene Degradation Studies. 3. Synthesis of 12,13-Deoxy-12,13-methanoanguidine and 12-Epianguidine, Two Optically Active Analogs of the Epoxytrichothecene Mycotoxin Anguidine” J. Org. Chem. 1987, 52, 603.

W.R. Roush and S. Russo-Rodriguez “Trichothecene Degradation Studies. 2. Synthesis of (13-¹⁴C) Anguidine” J. Org. Chem. 1987, 52, 598.

J. R. Babson, S. Russo-Rodriguez, W.H. Rastetter and G.N. Wogan “*In Vitro* Binding of Microsomal-Activated Fluoranthene: Evidence that the Major Product is a Fluoranthene N²-deoxyguanosine Adduct” Carcinogenesis 1986, 7, 859.

J. R. Babson, S. Russo-Rodriguez, R.V. Wattlely, P.L. Bergstein, W.H. Rastetter, H.L. Liber, B.M. Andon, W.G. Thilly and G.N. Wogan “Microsomal Activation of Fluoranthene to Mutagenic Metabolites” Toxicol. And Appl. Pharmacol. 1986, 85, 355.

W.R. Roush and S. Russo-Rodriguez “Trichothecene Degradation Studies: Synthesis of 12,13-Deoxyanguidine and 12,13-Deoxyverrucarol” J. Org. Chem. 1985, 50, 5465.

W.R. Roush, M.A. Marletta, S. Russo-Rodriguez and J. Recchia “Trichothecene Metabolism Studies. 2. Structure of 3- α -(1’ β -D-Glucopyranosiduronyl)-8 α -isovaleroxyscirpen-3,4 β ,15-triol-15-acetate Produced from T-2 Toxin In Vitro” Tetrahedron Lett. 1985, 26, 5231.

W.R. Roush and S. Russo-Rodriguez “Synthesis of 4 β -Acetoxyscirpen-3 α ,15-diol” J. Org. Chem. 1985, 50, 3324.

W.R. Roush, M.A. Marletta, S. Russo-Rodriguez and J. Recchia “Trichothecene Metabolism Studies: Isolation and Structure Determination of 15-Acetyl-3 α -(1’ β -D-glucopyranosiduronyl)-scirpen-3,4 β ,15-triol” J. Am. Chem. Soc. 1985, 107, 3354.

W.H. Rastetter, R.B. Nachbar, S. Russo-Rodriguez, R.V. Wattlely, W.G. Thilly, B.M. Andon, W.L. Jorgensen and M. Ibrahim “Fluoranthene: Synthesis and Biological Testing of Four Diol Epoxides” J. Org. Chem. 1982, 47, 4873.

INVITED PRESENTATIONS AND POSTERS

Presentation: **S Russo-Rodriguez**, ‘*Enhancing success in General Chemistry with POGIL activities in problem sessions*’ 250th American Chemical Society National Meeting, Boston, MA, Aug 16-20, 2015. I described in detail the course development of CHEM 0330T from 2005-2015.

Presentation: **S Russo-Rodriguez, PhD.** ‘*Enhancing success in General Chemistry with problem-solving workshops*’ BCCE 2014, 23rd Biennial Conference on Chemical Education, Grand Valley State University, Allendale, MI, Aug 3-7, 2014. Presentation on 330T.

Poster: **S Russo-Rodriguez, PhD.**, MB Zimmt, and K Hess ‘*Problem sessions promote learning communities in Introductory Chemistry Chem 100*’ BCCE 2014, 23rd Biennial Conference on Chemical Education, Grand Valley State University, Allendale, MI, Aug 3-7, 2014.

Poster: **S Russo-Rodriguez, Ph.D.** ‘*Enhancing Student Success in General Chemistry with POGIL activities in Workshops*’ Process Oriented Guided Inquiry Learning (POGIL) Conference in Colorado College, Colorado Springs, CO, July 17-19, 2013.

Invited panelist on Support for Students in the Sciences during the Admission Office Open House for prospective students of color organized by the Office of Minority Recruitment, Brown University, October 2007-October 2011.

Invited faculty panelist, presentation on Support for Students of Color, with Profs. Terry-Morgan, Cynthia Garcia Coll and Ralph Rodriguez, during the Third World Transition Program, Brown University, August 28, 2007.

Presentation to Counseling and Psychological Services directors and staff on Support for Students in the Sciences, Brown University, October 16, 2006

ACADEMIC HONORS

Brown University SEAS Access Faculty Ambassador Award, May 24, 2017. For a Brown University professor who has demonstrated exceptional awareness, inclusiveness, and support for students with disabilities.

Brown University Undergraduate Council of Students, Teaching and Advising Award, March 6, 2014. For outstanding commitment to student mentorship.

Brown University Sheridan Center Teaching Certificate I, 2013.

Brown University Randall Advisor, Dean of the College, 2012-present

Elected to Sigma Xi Research Society

M.I.T. Graduate and Opportunities Program Predoctoral Fellowship, M.I.T. 1979-1982

U.P.R. Natural Sciences Faculty Award, 1979

U.P.R. Alumnae Association Award, 1979

P.R. American Chemical Society, Outstanding Senior Award, 1979

Isidoro A. Colon, Rotary Club of PR Undergraduate Award, 1979.

PROFESSIONAL SOCIETIES

American Chemical Society (ACS), 1979-present

Member and President, ACS Student Chapter, University of Puerto Rico, Rio Piedras, 1978-1979; helped organize ACS undergraduate and graduate student research symposia at U.P.R, Rio Piedras.

SERVICE TO BROWN UNIVERSITY COMMUNITY

Backup faculty to the Brown Academic Priority Committee, September 2017 to the present.

Part of SEAS Community Partners invited to evaluate candidates for the SEAS coordinator position. Met with two candidates among several staff members invited to evaluate the candidates, May 22 and 23, 2017. Met with several others in June.

Met with Dean Mandel and DOC deans and students who facilitated the Pathways Sophomore reflection project on May 10, 2017 and gave feedback on the project to decide on next steps.

Invited to evaluate a new FirstYear@Brown canvas site, April 25, 2017.

Tested new ASK-based Transfer Credit approval with faculty and administrative staff, March 28, April 24, and May 10 2017, hosted by Dean Lee and Dean Battacharyya.

Interacted with prospective undergraduates at the ADOCH (A Day on College Hill) concentration fair, April 19, 2017.

Participated in Concentration Declaration Day activities in Chemistry department on April 18, 2017 to welcome new concentrators.

Participated in Questbridge Faculty Lunch at Petterutti Lounge on April 14, 2017 and met several students I had not met before.

Gave orientation to Brown to a group of two counselors and two adult learners from the Bridge to Careers Program of Progreso Latino (Central Falls, RI) interested in learning about chemistry education at Brown on April 9, 2017.

Gave orientation on chemistry studies at Brown to a high school underrepresented student from the Roselle Park School District in Roselle Park, NJ on March 3, 2017.

Participated in STEM TEAM dinner and conversation with undergraduate student leaders in STEM at the Science Center, organized by Dean Bhattacharyya, March 21, 2017.

Interacted with various undergraduates along with Dean Yolanda Rome in Questbridge lunch at the Brown Center for Students of Color, Questbridge Mentorship program, March 22, 2017.

Member of Health Careers Advisory Committee, February 2017-present. Had brief orientation with George Vassilev and interviewed 8 medical school applicants from March 17 to May 12, 2017. Wrote summaries and recommendation letters for each of the students.

Co-facilitator of three two-hour workshops with Dean Shannon O'Neill and Matthew Dang, 14-21 first year students for Dean of College's "Paving your Pathway" sophomore self-reflection project; workshops on 'Reflecting on your values', 'How to choose a concentration', and 'Reflecting on Success', February 7, February 28 and March 7, 2017; coordinated by Dean Peggy Chang; met several times with the co-facilitators to prepare prior to each workshop.

Participant of Advice on Advising, talk on Financial Resources for Students, December 2016.

Faculty panelist with Questbridge Scholars Program Mentors (Yolanda Rome, Matthew Zimmt and another person) at the FLi (First generation and Low Income) Student Center, December 2, 2016.

Co-facilitator with Dean Julie Lee of Collaborative Learning Workshop with first-semester students, Leadership Alliance's SYNERGI (Synergistic Network to Enhance Research that Grows Innovation) Project, September 27, 2016.

Facilitator of First Readings Discussions, September 5, 2016.

Chemistry concentration advisor, August 2016-present

STEM TEAM advisor, August 2016-present

Questbridge Scholars Program Faculty Mentor, May 2016-present.

Member, Diversity and Inclusion Plan Committee, Chemistry Department, April 2016-present

Invited faculty, WiSE (Women in Science and Engineering) Conversations Luncheon, discussions between students and faculty on how to improve inclusion in science courses, April 7, 2016

Invited faculty, WiSE (Women in Science and Engineering) Dinner and Discussion, October 7, 2015.

Member, CATALYST TEAM (Team Enhanced Advising and Mentoring), Fall 2015-May 2016

Member, Advisory Board on International Student and Visitor Affairs, December 2015-January 2017

Member, Women Educators Teaching in STEM (We-Teach-STEM) discussion group, April 2015-spring 2016.

Chemistry department representative in evaluation of English proficiency of chemistry graduate students, fall 2010, fall 2014, fall 2015 and fall 2016

Main contributor/ writer of the introductory course information sheet for the undergraduate STEM Gateway information project led by Jan Tullis (for TEAM CATALYST) in July 2015; the final version edited by J Tullis has been published in ASK to inform academic advisors and students since August 25, 2015.

In charge of approval of undergraduate transfer credits, Chemistry Department, June 2014-present.

Participant in a Faculty of Color Network meeting on Kelly Report, April 2014.

Member of ad-hoc search committee for Adjunct Lecturer in Chemistry, summer 2014.

Invited faculty, focus group meeting on Third World Center strategic planning, March 5, 2014.

Participant in Welcome to International Students receptions from 2013-present

Participant in Welcome to Transfer Student receptions from 2013-present.

Member, Theories in Action Conference Selection Committee, Spring 2013

Member, Campus Accessibility Advisory Committee, November 2012 to present, Brown University

Faculty participant in Welcome to Transfer Students Receptions from 2012-present

Randall sophomore adviser, September 2012-present

Mentor, ALANA (African American, Latino, Asian/Asian American and Native American) faculty group, May 2012-present.

Mentor, Team Enhanced Advising and Mentoring (TEAM) faculty collaborative group, 2011-present

Member, Chemistry Department Curriculum Committee, 2011-present

Participant in Chemistry Focus Group on curriculum during departmental self-study, fall 2009; meeting of focus group with Dean of the College, November 2009

Organizer and facilitator of Microteaching evaluation sessions of chemistry graduate students for Sheridan Certificate I program, 2007-2010

Discussion Leader in Sheridan Center New TA Orientation, September 2007-2011 and September 2016

Organizer and facilitator of campus-wide BEARCORE (Brown Ethical and Responsible Conduct of Research Education) ethics case discussions June 2010, September 2010, June 2011 and June 2012

Member, Ethics Training Curriculum Development Committee, 2009-2010, Graduate School

Lead Responsible Conduct of Research workshops of first year graduate students in the Chemistry department from January 2008- present.

Lead Responsible Conduct of Research workshops of graduate students in the Physics department from January 2009-January 2011.

Led Responsible Conduct of Research workshop of graduate students in Engineering, January 2008

Member, Graduate School Planning Committee on Ethics training, 2007-2010

Member, Graduate School Ethics Initiative Steering Committee, 2006-2007

Disciplinary hearing student adviser and resource person, Spring 2007-present.

Member, Science Friday faculty discussion group, organized by Prof. Jan Tullis and Sheridan Center for Teaching and Learning, spring 2009-present.

Faculty mentor, ALANA (African American, Latino, Asian/Asian-American, Native American), 2006-2008

Revise and oversee a voluntary, free online Chem0100web tutorial to increase chemistry readiness of incoming first-year students, summer 2006 –present

Sheridan Center for Teaching and Learning Faculty Liaison, 2006-present.

Participant, Tristate Consortium conference, Summer 2006, Brown University, organized by John Tyler from the Education department, discussed with high school teachers ways to improve Science education.

Freshman adviser, September 2006-present
Sophomore adviser, September 2007-present

Participant faculty in the TWTP (Third World Transition Program) Welcome Multiethnic Dinner and Receptions, August 2007- present

Participant in the ADOCH (A Day on College Hill) receptions for admitted Students of Color and their parents, April 2007-present

Participant in the Admission Office Open House for Prospective Students of Color, Office of Minority Recruitment, October 2007-October 2011

Participant in Latino student lunches organized by Dean Yolanda Castillo-Appollonio of the Office of Student Life, 2006-2013

COMMUNITY SERVICE

Volunteer mentor, Gateway Science, Barnstable Middle School, September 2005-June 2006.

Volunteer teacher, Gateway Science Earth and Sky Project, Barnstable Middle School, Fall 2004.

Volunteer teacher, Gateway Science, 5th Grade Barnstable School, Nov. 2001- April 2002.

TEACHING AT BROWN UNIVERSITY

COURSES

1. Chem 330T/332 course: Fall-Spring program 2005-present. I have performed course development and improved the active-learning no-lecture program every year since 2005. Course enrollment is ~20-96.

<u>Year</u>	<u>Enrollment</u>	<u>Year</u>	<u>Enrollment</u>
2005-2006	35	2011-2012	70
2006-2007	40	2012-2013	74
2007-2008	36	2013-2014	48
2008-2009	46	2014-2015	20
2009-2010	96	2015-2016	21
2010-2011	34	2016-2017	18
		2017-2018	28

2. Chem 0100 Introductory Chemistry. January 2008-present. I have developed lectures, quizzes, online homework and exams. I have developed materials for the active learning problem sessions since 2011.

Semester Enrollment

Spring 2008 50

Fall 2008 76

Fall 2009 81

Fall 2010 200

Fall 2011 150 taught with Prof. James Golen, managed course, ran 2 out of 7 problem sessions

Fall 2012 195 ran 3 out of 6 problem sessions
 Fall 2014 168 ran 2 out of 6 problem sessions
 Fall 2015 203 taught with Prof. Vicki Colvin, managed course, ran 2 out of 6 problem sessions
 Fall 2016 181 taught with Prof. Vicki Colvin, managed course, ran 4 out of 6 problem sessions
 Fall 2017 course development due to medical leave, gave all materials to Eric Victor

3. Instructor of online Summer Chem100 web tutorial. Summer 2006-present. This free online course is advertised to incoming first years by the Dean of the College and in the Chemistry web pages.

Semester	Enrollment	Semester	Enrollment
Summer 2006	167	Summer 2012	493
Summer 2007	291	Summer 2013	460
Summer 2008	528	Summer 2014	448
Summer 2009	475	Summer 2015	418
Summer 2010	540	Summer 2016	453
Summer 2011	501	Summer 2017	430

4. Instructor of 4-hour Ethics Training for 1st year graduate students in Chemistry Department, January 2008-January 2017. 9 to 41 graduate students have participated in the ethics training program every January. Several faculty have assisted with facilitation of the case discussions.

5. Instructor of 33T in January as part of January@Brown program, 2008 and 2009: Enrollment: 6 students in Jan 9-18, 2008; gave three hour daily lectures. Offered the course again in January 2009 to 3 students as a service after the program was canceled.

TEACHING SERVICE

1. Tutoring support for Chem 330, Chem 100 2005-2013. I saw anywhere from 5 to 25 students per day in walk-in open help hours three to five days a week mostly to support Chem 330. My support was announced in the syllabus of the course. I monitored actual attendance from 2005-2013: number of students in my office hours ranged from 138 (fall 2005) students to 415 (fall 2012) depending on combined enrollment of Chem 0100 and Chem 0330.

Semester	Enrollment	Semester	Enrollment	Semester	Enrollment
Fall 2005	547 students	Spring 2009	130	Spring 2011	200
Fall 2006	547	Fall 2009	510	Fall 2011	451
Fall 2007	600	Spring 2010	160	Spring 2012	~200
Fall 2008	576	Fall 2010	475	Fall 2012	~450
				Spring 2013	~200

2. Tutor and Resource to other courses, 2006-present. I provide open office hours and personalized assistance by appointment when requested

Class	Semester	Enrollment	Class	Semester	Enrollment
Chem 100	Spring 2006	40	Chem 350	Spring 2008	475
Chem 100	Spring 2007	60	Chem 350	Spring 2011	475
Chem 350	Spring 2006	475			
Chem 350	Spring 2007	475			

3. Built the Chemistry placement exam available in Banner since 2010. 3 placement exams were written in 2010-2011 and were installed in Banner. The last one is a variable question exam.

4. Guest Lectures:

- CHEM 0100, 1 guest lecture fall 2016
- CHEM0100, 8 guest lectures fall 2015
- CHEM0100, 1 guest lecture fall 2011
- CHEM0100, 2 guest lectures spring 2006
- CHEM0330, 1 guest lecture fall 2015 on bonding and molecular orbitals.
- CHEM0330, 2 guest lectures fall 2011, 1 guest lecture summer 2011
- CHEM0330, 2 guest lectures fall 2010 on Thermodynamics
- CHEM0330, 2 guest lectures spring 2010 on Electrochemistry and Thermodynamics
- CHEM0330, 3 guest lectures fall 2008
- CHEM0330 lab, 1 guest lecture summer 2008
- CHEM0330, 2 guest lectures fall 2007
- CHEM0330, 5 guest lectures fall 2006

TEACHING ASSISTANTS Supervised and Mentored

1. Undergraduate TAs support of Chem 330 and Chem 100 in office hours and as facilitators: I recruit, organize, and manage undergraduate TAs. TAs host evening open help hours anywhere from 2-4 days per week, and facilitate problem sessions. Since Fall 2011 I have weekly meetings with the undergraduate facilitators of Chem 100 problem sessions. Since Fall 2013-2016 I recommend TAs to hire to Chem0330 instructors.

Semester	<u>Number of TAs and courses</u>		
	Chem 330/330T	Chem 100	Chem 330 notes
Fall 2005	10		
Fall 2006	12		
Fall 2007	12		
Spring 2008	5		
Fall 2008	12	4	
Spring 2009	4		
Fall 2009	12	4	identified 10 TAs to help Prof Strat
Spring 2009	8		
Fall 2010	8	5	identified 10 TAs to help Prof Strat
Spring 2011	6-8		
Fall 2011	8	6	
Spring 2012	6		
Fall 2012	8	6	identified 6-8 graders for Prof Strat.
Spring 2013	7		identified 2 TAs to assist Prof Bazemore-Walker
Fall 2014		9	
Fall 2015		7	
Spring 2016	2		
Fall 2016		16	
Spring 2017	2		
Fall 2017		13	

2. Graduate TAs for Chem 100 and Chem 330: graders and facilitators of problem sessions. Beginning in spring 2008 I have managed graduate students who assisted with mostly grading in Chem 100 and 330T (grading for 330T began in 2009-2010); since fall 2011 I have managed facilitators for Chem 100 and 330T. I have weekly meetings with all facilitators since 2011.

Semester	Graduate TAs	Semester	Graduate TAs
Spring 2008	2	Fall 2012	5
Fall 2008	2	Spring 2013	4
Fall 2009	4	Spring 2014	4
Spring 2010	4	Fall 2014	7 (2 were PhD)
Fall 2010	6	Spring 2015	3
Spring 2011	4	Fall 2015	8 (2 were PhD)
Fall 2011	5	Spring 2016	1 facilitator, 2 exam graders
Spring 2012	4	Fall 2016	4 facilitators (1 was PhD) 5 exam graders
		Spring 2017	1 facilitator and grader

ADVISING AND MENTORING

Chemistry Concentration Advisor, August 2016-present

Randall Advisor, Dean of the College Office, 2012-present

Mentor, TEAM (Team Enhanced Advising and Mentoring), 2011-2013, 2014-present

Freshman Advisor, 2006-present

Sophomore Advisor, 2007-present

Freshman and Sophomore Advisor; Concentration Advisor

2006-2007 5 freshman
2007-2008 8 freshman, 5 sophomores
2008-2009 6 freshman, 7 sophomores
2009-2010 5 freshman, 8 sophomores
2010-2011 5 freshman, 4 sophomores
2011-2012 5 freshman, 4 sophomores,
2012-2013 6 freshman, 11 sophomores
2013-2014 5 freshman, 4 sophomores (while on sabbatical)
2014-2015 6 freshman, 11 sophomores
2015-2016 5 freshman, 12 sophomores
2016-2017 6 freshman, 8 sophomores, 7 chemistry concentrators
2017-2018 6 freshmam, 12 sophomores, 12 chemistry concentrators

Advisor of undergraduate students in Disciplinary Conduct hearings

1 advisee in spring 2008
1 advisee in spring 2009
2 advisees in 2011-2012
2 advisees in spring 2013
2 advisees in spring 2014
1 advisee in fall 2014-spring 2015
1 advisee in spring 2016

Advisor of graduate student for Academic Code Hearing- Graduate School

1 advisee in spring 2013

Faculty Sponsor UTRA

Kimberly Martinod '07, summer 2006, development of online Chem 100 web tutorial project.

Research Advisor

Andrea Malpica, Summer 2017 -work on review of Chem 100 web.

Research Advisor CHEM 0970

Michelle Cruz, '18, Fall 2017, chemistry concentrator

CURRICULUM PROPOSALS FUNDED/EDUCATION

UTRA summer 2006. Kimberly Martinod ('07) and I collaborated in the revision, update, and launching of a new Chem 100 web online tutorial in 2006 using a wiki platform for content linked to the host site with exams in mycourses.brown.edu. We had technical assistance from ITG.

Salary support by the Chemistry Department and the Dean of the College in summer 2006 supported course development of Chem 100 web and Chem 330T. The course development funded is the basis of present-day Chem 100 web tutorial and Chem 330T; both continue to evolve each summer since 2006.

Curricular Development Grant from the Dean of the College, \$2500, summer 2007. Funding resulted in course improvements to Chem 330T and detailed course development for Chem 100 in spring 2008. Both continue to evolve every summer since 2007.

Proposal for 'Chem 33T in January' program, with Dean David Targan, October 2007. Chem 33T was one of five courses in the novel program *January@Brown 2008*: Jan 9-18 2008, 10am-1pm. It had 6 registered students and 1 auditor. I ran the program as a service on January 12-17 2009 10am-1pm to 3 students.

Council of Graduate Schools Travel grant to attend Survival Skills and Ethics Conference in Snowmass, Colorado in summer 2007 assisted course development of Responsible Conduct of Research training for graduate students in physical sciences, January 2008-present. I continue to develop materials for training from 2007-present.

Proposal for Ethics Course of Chemistry and Physics Graduate Students, submitted to Graduate School Sub-committee on Ethics and the Chemistry Department in January 2007.

Travel funding to a POGIL Conference in summer 2008 led me to the use of POGIL (Process Oriented Guided Inquiry) learning-cycle activities (exploration, synthesis, and application) and their incorporation of active learning problem sessions in mandatory 330T workshops in 2008-present to enhance success of students with weak backgrounds in problem solving.

Travel funding to a POGIL Conference in summer 2013 led to full implementation of 3-person workgroups in the mandatory problem sessions of CHEM0100 and CHEM0330T thanks to improved facilities beginning in 2014.

Contributor of information on Chem 0100 course and literature on quantitative problem solving in chemistry courses to Brown University's NSF Wider STEM Proposal, June 2013, to support Prof. M Zimmt's proposals to improve mathematical competencies in Chem0100.

Participant in the AAU STEM grant awarded to Brown University, August 2013. Contributor of course data and literature on how to develop quantitative problem solving in chemistry to support proposal to improve mathematical competencies in Chem0100; AAU STEM grant supported Chem0100 course development and improvements from fall 2013-spring 2016.

Contributor of Chem 330T student data (composition and performance) to support M Zimmt's HHMI proposal for changes and development related to 330T, August 2013. HHMI was funded, and the ideas for 330T were the main reason the proposal was funded.

Proposal to the Dean of the College to improve 330T, May 2015: Prof. Zimmt and I proposed to increase the problem sessions and creation of the non-graded course CHEM0332 to facilitate the change. The changes were implemented in 2015- 2016.

PROFESSIONAL DEVELOPMENT

Attended broadcast of seminar on “Classroom Assessment for the Next Generation Science Standards: Seeing Students Learn Science” The National Academies of Sciences, Engineering and Medicine, 3-4:00 pm, June 15, 2017.

Attended broadcast of day symposia on “Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities”, The Board on Science Education, The National Academies of Sciences, Engineering and Medicine, June 2, 2017.

Interviewed by Laura Bosque in a Video for La Alianza Latina's student organization, April 26, 2017 on Latinx outreach to improve visibility of latino faculty to reach out to latinx students.

Participant in a Summit for Sustainable Change with fellow colleagues in the multi-disciplinary AAU and HHMI Education effort at Brown University, April 20, 2017 and the HHMI Team Meeting on Inclusive Teaching on May 16, 2017.

Attended broadcast of symposia on “Supporting Students' College Success: The Role of Assessment of Intrapersonal and Interpersonal Competencies”, The Board on Science Education, The National Academies of Sciences, Engineering and Medicine, April 13, 2017.

Participant in presentation on How to Support Muslims at Brown University, by the Associate University Chaplain for the Muslim Community, April 5, 2017.

Participant in Chemistry DIAC lecture and lunch conversation with Professor Laurie Butler from University of Chicago, March 17, 2017.

Participant in Chemistry DIAC lecture and conversations with Dr. Dantarie Stallings, Research and Program Manager at OXIDE or Open Chemistry Collaborative in Diversity Equity, March 1, 2017.

Participant in “Unpacking Diversity and Inclusion” plenary session and two workshops on ‘Understanding Policies to Address Undocumented, DACA, First Generation and Low-Income Student Concerns’ and ‘Training Staff and Faculty to Facilitate Student Civic Engagement’, February 21, 2017.

Participant in ‘Celebrating Excellence in Science’, presentation by Prof. James E West, and exemplar chemistry panel discussion on ‘How to Grow a Scientist’, Science Center, February 14-15, 2017 and conversations with Bill Wilson about mentorship in chemistry and science.

Participant with fellow concentration advisors in ‘Toward More Inclusive Concentration’ workshop by Dean of the College, February 13, 2017.

Reviewed and contributed to the proposal to renew Leadership Alliance’s SYNERGI (Synergistic Network to Enhance Research that Grows Innovation) to NIH’s IPERT program, January 2017.

Participant in ‘Financial Aid Essentials’ for Academic Advisors, December 2016 hosted by Dean Yolanda Rome, talks by James Tilton and Vernicia Elie.

Concentration Advisor Orientation Session, organized by the Dean Besenia Rodriguez, September 8, 2016.

Active participant in the Multi-Institutional (U of Chicago, Spelman College, Morehouse College, Vanderbilt, Brown) Facilitators’ Training Meeting, Leadership Alliance’s SYNERGI Initiative (Synergistic Network to Enhance Research that Grows Innovation) Project, August 19-20, 2016, Providence, RI

Hosted Prof. Nestor Carballeira, chair of Chemistry Department at the University of Puerto Rico Rio Piedras visit to Brown University Chemistry Department on May 19, 2016

Participant in Prof. Mahzarin Banaji’s Lecture and discussion on *Blindspot: Hidden Biases of Good People*, Brown University, April 29, 2016

Participant in “Unpacking Diversity and Inclusion in the Academy” plenary lecture and two workshops on ‘Promoting Academic Excellence and Broadening Participation in STEM disciplines’ and ‘Inclusive Pedagogy’, Brown University, February 23, 2016

Attended broadcast of symposia on “Developing Indicators for Undergraduate STEM Education”, The Board on Science Education, The National Academies of Sciences, Engineering and Medicine, February 22, 2016.

Observed all Prof. Colvin’s CHEM0100 lectures, fall 2016 & fall 2015.

Observed Prof. Kristi Koski in 2 CHEM0330 lectures, fall 2015; offered suggestions & feedback.

Title IX Training, Fall 2015

Participant and presenter, 250th American Chemical Society National Meeting, Boston, MA, August 16-20, 2015

Science Education for New Civic Engagements and Responsibilities –SENCER- Summer Institute, Worcester Polytechnic Institute, Worcester, MA, July 30-August 3, 2015.

Participant, Brown-U of Penn AAU STEM Teaching Retreat, Brown University, June 24-25, 2015.

Member, Brown University Faculty of Color Network, May 2015-present.

Participant in Transformative Conversations @Brown Project, February 2015, November 2014.

Transformative Conversations @Brown Project Facilitator, February 2014.

Participant in meeting of selected faculty involved in AAU program with Provost Vicki Colvin in December 4, 2014 to discuss STEM education at Brown University.

Office of General Council Training for Advisors of Student Conduct Hearings, Brown University, November 14, 2014.

Participant and presenter at the Biennial Conference in Chemical Education, Grand Valley State University, Allendale, MI, August 3-7, 2014

Member, *Science Friday* discussions organized by Prof Jan Tullis and the Sheridan Center for Teaching and Learning, Science Center, 2009-present

Assessment of Learning and Knowledge Spaces (ALEKS) Faculty Symposia, ALEKS Corporation, Irvine, CA, October 24-26, 2013

During fall 2013 scholarly leave conducted research and classroom visits with faculty at diverse institutions: University of Puerto Rico in Rio Piedras, Boston University and M. I. T.

POGIL: Process Oriented Guided Inquiry Learning Training Workshops, Southwest Regional POGIL Meeting, July 17-19, 2013 in Colorado College, Colorado Springs, CO

Attended campus-wide meeting of science faculty to discuss Brown University's AAU STEM grant proposal, spring 2013

Sheridan Center for Teaching and Learning Teaching Certificate I on Reflective Teaching, Brown University, 2012-2013

Observed by M. Zimmt while giving CHEM0100 lectures in September 2012 and one guest lecture in CHEM0100 in fall 2011

Observed all of Prof. Golen's CHEM0100 lectures, Fall 2011

Office of Student Life training seminar, new Student Conduct Hearings regulations, September 2011

Member, TEAM or Team Enhanced Advising and Mentoring faculty group, from 2011-present.

Workshop on *Supplemental Instruction* by Maureen Hurley (trainer from The International Center for Supplemental Instruction at University of Missouri-Kansas City), Brown University Science Center, May 13-14, 2010. Sponsored by the Dean of the College.

Monthly meetings with Dean Gaylin, Dean Rome, Sarah Taylor and Dean Lassonde, spring 2010 to discuss support of underrepresented students, Brown University.

NSF Sponsored POGIL-IC: Process Oriented Guided Inquiry Learning–In Context Training and Workshops, June 18-20, 2008, Stony Brook University- SUNY, Stony Brook, NY.

NSF Sponsored Introduction to POGIL Workshop, Worcester State College, Worcester, MA, April 2008

Member, Graduate School Ethics Training Committee, Brown University, 2007-2009

Council of Graduate Schools Grant sponsored 13th Annual Conference on Survival Skills and Ethics, Trainer of Trainers Conference, June 10-15, 2007 in Snowmass, Colorado provided cases for developing ethics training for physical science graduate students

Office of Student Life Training for Advisors of Student Conduct Hearings, Brown University, February 2007

Member, Graduate School Ethics Initiative Steering Committee, Brown University, 2006-2007

Sheridan Center for Teaching and Learning, orientation for new faculty, September 2006.

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