

K. Beth Beason-Abmayr, Ph.D.

Teaching Professor of BioSciences (2018-Present)

BioSciences at Rice – MS 140
P.O. Box 1892
Houston, TX 77251

Anderson Biological Laboratories 126
713 348-2535
bbeason@rice.edu

Select Contributions to Inquiry-Based Learning at Rice and Beyond

- CUR Transformations Project: Integrating and Scaffolding Research into Undergraduate STEM Curricula, **Member of BioSciences Leadership Team**, April 2017-present
 - Year 2 Collaboration Meeting Poster: **Using maps to clarify the pathway for students to develop research skills** (The College of New Jersey, Nov. 2-4, 2018)
- *QEP Scaffolding Experiential Inquiry and Research into the Curriculum Fund 2: Development and Enhancement Grants*, **Implementing Lead Faculty**: Mapping the Use of Inquiry in a Flexible Curriculum: Intersecting Paths for Biochemistry and Cell Biology (\$30,000, 2017-2018); Implementing and Enhancing Inquiry in the Biochemistry and Cell Biology Curriculum (\$30,000, 2018-2019); Continued Implementation and Enhancement of Inquiry in the Biochemistry & Cell Biology Curriculum (\$30,000, 2019-2020)
- Baylor College of Medicine **ACTOR** (Achieving Competencies in Teaching through Observation and Reflection) Program, Faculty Mentor, 2019 Pilot Program – Present
- *Library Learning for Inquiry Project* – Fondren Fellow Research: Interviewed by Jade Kanemitsu (Undergraduate student, Cognitive Science) and Yifan Wang (PhD student, Anthropology), March 8, 2019; Collaboration with Joe Goetz, Information Literacy Librarian
- Teaching Interest Brown Bag, Psychology Dept., Feb. 14, 2019: Group Contracts for Student Teamwork (BIOC 335/536 Cellular and Molecular Animal Physiology)
- **Beth Beason-Abmayr** and Jennifer Shade Wilson, **“Building a Partnership with a Campus Communication Center,”** *Journal Microbiology & Biology Education* 19: 1-6 (2018) DOI: <https://doi.org/10.1128/jmbe.v19i1.1495>
- Sydella Blatch, William Cliff, **Beth Beason-Abmayr**, and Patricia Halpin, **“The Fictional Animal Project: A Tool for Helping Students Integrate Body Systems,”** *Advances in Physiology Education* 41: 239-243 (2017) DOI: 10.1152/advan.00159.2016
- **Rice iGEM** (International Genetically Engineered Machine) undergraduate synthetic biology team: Instructor/Advisor 2006-2008, 2015 (HKUST-Rice joint team); Primary PI, 2016-present
- The American Physiological Society Institute on Teaching and Learning (**APS-ITL**): Poster (2014); Organizing Committee Member (2016, 2018) and Co-Chair (2020), Invited speaker (2016, 2018)
 - **Invited Workshop Facilitator: “Tricks of the Trade: Collaborative Learning”**, University of Wisconsin-Madison, Madison, WI, June 18-22, 2018
- **Summer Institutes on Scientific Teaching** (<http://www.summerinstitutes.org>): Participant (2011); Invited Facilitator (2012-present)
- Experimental Biology 2019: **“Does Implementation of Flipped Teaching Combined with Retrieval Practice Enhance Student Engagement in Class Discussions?”** Poster Session Title: Teaching, Learning and Testing in The Biological and Biomedical Sciences, Orlando, FL, April 6-9
- Hong Kong University of Science and Technology (HKUST): Invited Speaker, **“Undergraduate Research Opportunities: From Project-Based Lab Courses to the International Genetically Engineered Machine Competition”**, May 14, 2018
- BioSciences Teaching Discussion: **“Reflection on Reflections”**, December 1, 2017
- CTE Workshop: **Inquiry-Based Learning Through Collaborative Group Work**, January 29, 2018 (*Invited Presenter*)
- CTE Teaching & Innovation Colloquy 2017-2018: **“Using Discussion as a Tool for Meaningful Learning: Techniques and Strategies for Successful Implementation,”** Invited by Josh Eyler, Director, CTE, to serve as Co-Facilitator for the Colloquy
- Treybig Teaching & Innovation Colloquy 2016-2017: **“The Science of Learning: Improving Conceptual Understanding,”** selected by a committee of CTE Faculty Fellows as a participant in this inaugural program
- **NSF REU Site: Interdisciplinary Program in Multi-Scale Biomolecular Networks** (BioNetworks): Molecular Biology Boot Camp (2010-present); Co-PI (2019-2022)
- Reviewer for Education Journals and Teaching Resources: *Advances in Physiology Education* (<http://advan.physiology.org>) and *Course Source* (<http://www.coursesource.org>)
- Teaching Innovations: transformation of existing lab courses and creation of new courses
 - Course-Based Undergraduate Research Experience (CUREs): BIOC 112, 311, 313, 413
 - Student-Centered Lecture Course: BIOC 335/536

EDUCATION

B.S., Auburn University, Microbiology (*summa cum laude*), 1990

Ph.D., University of Alabama at Birmingham, Physiology & Biophysics, 1996

PREVIOUS APPOINTMENTS

2015-2018	Rice University, Professor in the Practice, BioSciences at Rice
2012-2017	Assistant Director, Rice Excellence Secondary Science Teaching (RESSST) Program
2009-2015	Rice University, Faculty Lecturer and Laboratory Coordinator, Biochemistry & Cell Biology (now BioSciences Dept.)
2001–2009	Rice University, Lecturer and Laboratory Coordinator, Biochemistry & Cell Biology
2000-2001	Rice University, Laboratory Coordinator, Biochemistry & Cell Biology
1998-2000	Rice University, HHMI Postdoctoral Teaching Associate, Biochemistry & Cell Biology
1996-1998	Vanderbilt University, Division of Cardiology, Postdoctoral Research Fellow, The Research Training Program in Hypertension (NIH)

PROFESSIONAL ACTIVITIES and CONTRIBUTIONS to the TEACHING PROFESSION

Rice University Professional Activities and Service

Overall Responsibilities (*ongoing*)

- I am responsible for every aspect of any laboratory course that I teach, including ordering and organizing supplies, repairing and replacing equipment, preparing materials, setting up labs and individual stations, cleaning up and storing supplies and equipment; there is no staff support for the teaching laboratory courses.
- I grade almost all of the student work in all of my courses – since we place a major emphasis on both written and oral forms of communication, I grade a lot of papers, laboratory notebooks, scientific posters, and PowerPoint presentations! In my animal physiology course (BIOC 335/536), each exam has an open-ended, take-home section that is essay/short answer format and an in-class portion that is all short answers.
- Because I teach so many laboratory courses and spend a great deal of time with the students, I receive many requests for recommendation letters for current and former undergraduate students for summer programs, medical school, graduate school, awards/scholarships/fellowships, etc. I also have written letters for current graduate students for fellowships, travel grants, and teaching awards. I have written over 1300 letters for around 500 unique students (1999-present).

BioSciences Department (*formerly Biochemistry and Cell Biology and Ecology and Evolutionary Biology Departments*)

- BioSciences Meeting with President Leebbron (March 2019), NTT Representative: Speaker for Education Part, “BioSciences Commitment to Education”

- BioSciences Curriculum Task Force, **Member**, March 2018-present
- Undergraduate Program Task Force for BioSciences External Review, **Member**, June-November 2017
- BioSciences Communication Instruction Committee, **Member**, May 2017-May 2019
- Lecturer/Assistant Teaching Professor in Neuroscience, Search Committee, **Member**, May-August 2017
- BioSciences Safety Liaison, 2017-present
- BioSciences Departmental Safety Officer, 2016-present
- ABL Teaching Laboratory Renovation: As one of the primary “stakeholders,” I participated in meetings with the architects, contractors, Rice Project Team, and the Steering Committee to give input on design and requirements for the renovation of our teaching laboratory space, Fall 2015-2017
- Anderson Biological Laboratories (ABL) Teaching Labs Renovations Working Group, **Chair**, Fall 2015
- BioSciences Undergraduate Programs Task Force for BCB-EEB Merger: **Co-Chair**, 2014-2016
 - During the merger, we
 - Considered undergrad curriculum and advising practices for BCB and EEB and how to operate moving forward
 - Worked with BCB undergraduate steering committee and other BCB and EEB undergraduate committees to restructure BioSciences Undergraduate Curriculum Oversight so as to improve efficiencies and communication among the three degree programs (BCB, EEB, and Biological Sciences)
- BioSciences at Rice Search Committee for full-time non-tenure track faculty/instructor position, **Chair**, June-July 2015
- Biochemistry & Cell Biology Search Committee for non-tenure track Instructor for the 2014-2015 academic year: **Member**, May 2014
- Undergraduate Recruiting and Advising Committee for Pre-prospectives, Prospectives, Freshmen, and Undeclared Sophomores Advising: **Member**, BCB 2012-2016; BioSciences 2016-present
 - Throughout the year, we
 - Generate guidelines for committee organization and strategies to accommodate student requests for meetings and/or information
 - Communicate and meet with prospective students regarding both curriculum and research opportunities
 - Advise freshmen and sophomores both informally and formally
 - Organize and run gatherings for recruiting and advising majors, minors, pre-meds
 - Participate in BioSciences, Environmental sciences, neurosciences, campus-wide, Natural Sciences, and IBB-recruiting and information sessions
- Undergraduate Curriculum Committee: **Member**, BCB 2012-2016; BioSciences 2016-present
 - I work with the other members of the committee to
 - Recommend and review curriculum changes
 - Deal with curriculum questions as they arise

- Integrate, as appropriate, courses serving BCB, EEB, Biological Sciences, Environmental Science, and Neuroscience students
- Undergraduate Awards Committee: **Member**, BCB 2012-2016; BioSciences 2016-present
During the spring semester, we
 - Actively solicit nominees for BioSciences, University, and other awards, including Distinction in Research Awards
 - Select BCB awardees, help organize awards and present awards
 - Work with the Office of Fellowships and Undergraduate Research to identify and implement mechanisms to increase student applications and nominations for university, national, and international awards, fellowships, etc.
- Safety and Responsible Conduct in Research Committee: **Member**, 2012-2013; **Chair**, 2014-present; examples of our responsibilities include
 - Communicate Environmental Health and Safety (EHS)-provided and lab-specific safety training requirements to faculty
 - Work with EHS to ensure timely response and correction of annual laboratory audits
 - Assess current safety practices and recommend changes as deemed appropriate
- Ecology & Evolutionary Biology Search Committee for Lecturer and Laboratory Coordinator: **Member**, Summer 2012
- Ecology & Evolutionary Biology Search Committee for Lecturer and Laboratory Coordinator: **Member**, Summer 2009
- Biochemistry & Cell Biology Undergraduate Curriculum and Awards Committee: **Member**, 2008-2012
- Biochemistry & Cell Biology Safety Officer: 2008-2016
- Safety Training Instructor, 2001-2013: taught classes in General Laboratory Safety, Biosafety, and Radioactive Isotope Safety to the Departments of Biochemistry & Cell Biology (BCB), Ecology & Evolutionary Biology (EEB), and Bioengineering; modified BCB safety manuals and distributed to BCB dept.
- Judge for the Annual Poster Session for Biosciences Students: 2000-2002, 2008
- Meeting with the External Advisory Committee for Biochemistry & Cell Biology, Rice University, Oct. 2000

University Level

- CREATE (Collaborative for Research on Education and Teaching Excellence): Educational Research Action Team, with Rice CTE: Interdisciplinary group of educators who are interested in educational research and will
 - identify opportunities for pursuing research projects here at Rice
 - work together to write proposals to fund this research
 - help to put Rice on the map as a hub for this kind of research
- Faculty Senate Working Group on Academic Advising, Jan. 2018 - present
- CUR Transformations Project: Integrating and Scaffolding Research into Undergraduate STEM curricula, **Member of BioSciences Leadership Team**, April 2017-present
 - Year 2 Collaboration Meeting: Poster: **Using maps to clarify the pathway for students to develop research skills** (The College of New Jersey, Nov. 2-4, 2018)
- BioScience Research Collaborative (BRC) Kitchen Working Group, March-Dec. 2017

- Rice's Center for Teaching Excellence: Participating Faculty, Spring 2017 Faculty Owl Days
- Rice iGEM (International Genetically Engineered Machine) undergraduate synthetic biology team: Instructor/Advisor 2006-2008, 2015 (HKUST-Rice joint team); Primary PI, 2016-present
 - Helped establish the *first* Rice team in collaboration with other faculty in Natural Sciences and Engineering
 - Developed the first international cross-continent collaboration with Hong Kong University of Science & Technology in 2015 – no other iGEM team had done this previously or since
 - Raised support for the Rice iGEM team through several mechanisms, such as receiving a Brown Foundation Teaching Grant and requesting support from the Deans of Natural Sciences and Engineering and the Chairs of BioSciences, Bioengineering, and Chemical and Biomolecular Engineering
 - Served as the primary advisor for the Rice iGEM team (2016-present)
- Bioethics training for summer research programs
 - Responsible Conduct in Research (RCR) Short Course, with Susan Cates, Jamie Catanese, Dereth Phillips, and Rachael Eaton, June 10 & 24, 2019
 - Responsible Conduct in Research (RCR) Short Course, with Susan Cates, Jamie Catanese, Dereth Phillips, and Rachael Eaton, June 11 & 25, 2018
 - Responsible Conduct in Research (RCR) Short Course, with Susan Cates, Jamie Catanese, Elizabeth Eich, Dereth Phillips, and Rachael Eaton, July 12-13, 2017
 - Responsible Conduct in Research (RCR) Short Course, with Susan Cates and Sandra Bishnoi, July 11-12, 2016
 - RCR Short Course, with Susan Cates, Dereth Phillips, and Sandra Bishnoi, July 13-14, 2015
 - IBB Summer 2014 Bioethics Training, with Susan Cates and Dereth Phillips, July 8 & 15, 2014
 - IBB Summer 2013 Bioethics Training, with Susan Cates, July 9 & 16, 2013
 - IBB Summer 2012 Responsible Conduct of Research Short Course, with Susan Cates, July 17 & 24, 2012
 - IBB Summer Research Institute 2011: Ethics Short Course, with Susan Cates, June 27 & July 18, 2011
 - IBB Summer Research Institute 2010: Ethics Short Course, with Susan Cates, Dereth Phillips, Mary Purugganan, and Elizabeth Eich, June 14 & 28, 2010
- Research and Scholarly Activity Safety Advisory Board, 2014
- Laboratory Safety Policy Procedures group: worked with William Turner, Assistant Vice Provost for Research, to prepare a “new” Laboratory Safety Policy and Procedures document to present to the Faculty Senate Executive Committee, Fall 2013
- Rice Excellence Secondary Science Teaching (RESST) Search Committee for Assistant Director for Biology and Life Sciences: **Member**, Spring 2013
- Safety working group: 2012-2013
- Assistant Director, RESST Program in Biology, 2012 - 2017
- Poster judge for the 2012 Rice Undergraduate Research Symposium (RURS), 13-April-2012
- Poster judge for the 2012 Martel Annual Research Symposium (MARS), 9-April-2012

- Rice University Information Technology Advisory Committee (ITAC): Educational and Instructional Technologies Subcommittee, **Member**, 2011-2013
- Non-tenure track (NTT) working group, **Member**, 2011-2013
- University Committee on Teaching: **Member**, 2010-2011, 2012-2013
- Panel Judge for the third annual Martel Academic Research Symposium (MARS), 2011
- Laboratory Coordinators in the Natural Sciences and Engineering, **Member**, March 5, 2001-2008
- Brown College Faculty Associate, 1999-present
 - Brown College Host/Co-Host for O-Week Group Dinner: 2008-2013, 2015-2016
 - First-Year Mentor: 2012-2013, 2013-2014, 2016-2017
 - O-Week advising lunches
 - Beer Bike Tower for Brown College: 2012-present
- Undergraduate Admissions Department Faculty Volunteers
 - Faculty Phone-a-thon: April 2013; April 5, 2016; March 30, 2017
 - Owl Days Academic Panel: April 14, 2016
 - Owl Days Parent Reception: April 16, 2015; April 14, 2016; April 13, 2017
 - Admit Day Reception: April 13, 2015; April 17, 2016
- O-Week Academic Fairs
- Workshop for Women in Science and Engineering, June 19, 2001
- Beer Bike Judge (RPC): Start Line Judge, 2008-2014, 2018; Pit Judge 2016
- Rice University Citizens Police Academy Class #6, 25 Jan. – 19 April 2010

Education and Outreach

Rice Institute of Biosciences & Bioengineering (IBB)

- DNA Design Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 17-27, 2019
- DNA Design Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 25-27, 2018
- DNA Design Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 14-23, 2017
- The Girls STEM Initiative, June 3-9, 2017
- DNA Design Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 6-15, 2016
- DNA Design Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 8-18, 2015
- IBB Summer Programs, Girls Bioscience Initiative Event, Chavez High School, June 25, 2015
- DNA Assembly Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 9-19, 2014
- DNA Design Workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 12-19, 2013

- IBB Summer Programs, Girls Bioscience Initiative, June 24-28, 2013
- DNA hands-on workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 7-8, 2012; Summer Camp, June 19, 2012
- DNA hands-on workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 7-9, 2011
- DNA hands-on workshop for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas, June 14-16, 2010; Summer Camp, June 21-22, 2010
- DNA demo for students in the Rice Institute of Biosciences & Bioengineering Summer Academy: Science Academy of South Texas on June 11, 2009

Other

- Baylor College of Medicine ACTOR (Achieving Competencies in Teaching through Observation and Reflection) Program, Faculty Mentor: 2019 Pilot Program, 2020
- REU Site: Interdisciplinary Program in Multi-Scale Biomolecular Networks (BioNetworks): NSF-funded from 2019-2022: **Co-PI** (with Joff Silberg and Natasha Kirienko)
- Poster Judge, IBB Summer Undergraduate Research Symposium, Aug. 3, 2018
- NSF Summer Undergraduate Research Program for BioXFEL, One Week Boot Camp (similar to that for the REU BioNetworks): 2016 – present
- Rice Excellence in Secondary Science Teaching (RESST) for Houston ISD (<http://www.rstem.rice.edu/resst-hisd-2016-2017>): Biology Program, 2012 – 2017
- REU Site: Interdisciplinary Program in Multi-Scale Biomolecular Networks (BioNetworks): NSF-funded from 2010-2019; **Collaborator**; PIs are George Bennett and Jonathan Silberg
 - Helped establish a ten-week summer program that places ten students per year in different labs across engineering and natural sciences over the summer
 - Emphasized recruiting and training students from nearby community colleges, including Houston Community College and San Jacinto College (which have > 10,000 STEM students)
 - Developed and coordinated all wet lab aspects for the one week boot camp which occurs at the beginning of the program; this boot camp has been refined annually
- Educator Advisory Committee, The Health Museum of Houston, 2012/2013 and 2013/2014 academic years
- Coordinated with Amy McClurd, Director, Glasscock School Continuing Studies on use of teaching laboratory classrooms for summer AP laboratory teacher training, 2009-present
- DNA demo for students at Milby/YES/Harmony on June 23, 2009
- Science Advisor for Worthing Rice Apprentice Program (WRAP 2), 2010/2011 and 2011/2012
- Biology workshop for students from the Milby Science Institute/YES College Preparatory School Summer Intern Program (part of the Howard Hughes Medical Institute Undergraduate Biological Sciences Education Program), June 26, 2001
- Assisted with Micro to Macro Institute (led by Nanda Kirkpatrick), June 2001 and June 2002

National and International Professional Activities and Service

International Genetically Engineered Machine ([iGEM](#))

- 2019 International Genetically Engineered Machine (iGEM) Giant Jamboree: Executive Judging Committee; PI for Rice team, Oct. 31-Nov. 4, 2019, Hynes Convention Center, Boston, MA
- 2018 International Genetically Engineered Machine (iGEM) Giant Jamboree: Executive Judging Committee; PI for Rice team, Oct. 25-28, 2018, Hynes Convention Center, Boston, MA
- 2017 International Genetically Engineered Machine (iGEM) Giant Jamboree: Executive Judging Committee; PI for Rice team, Nov. 9-13, 2017, Hynes Convention Center, Boston, MA
- 2016 International Genetically Engineered Machine (iGEM) Giant Jamboree: Executive Judging Committee; PI for Rice team, Oct., 2016, Hynes Convention Center, Boston, MA
- 2015 International Genetically Engineered Machine (iGEM) Giant Jamboree: Executive Judging Committee; Instructor/Advisor for HKUST-Rice joint team, Sept. 24-28, 2015, Hynes Convention Center, Boston, MA
- 2014 International Genetically Engineered Machine (iGEM) Giant Jamboree: Executive Committee; Co-Head Judge for the Giant Jamboree, Oct. 30 – Nov. 3, 2014, Hynes Convention Center, Boston, MA
- 2013 International Genetically Engineered Machine (iGEM) Competition: Head Judging Committee; Co-Head Judge for the North America Regional Jamboree at the University of Toronto, Toronto, Canada, 4-6 Oct. 2013; Judge and Co-Emcee for the Awards Ceremony for the World Championship Jamboree at MIT, Cambridge, MA 1-4 Nov. 2013
- 2012 International Genetically Engineered Machine (iGEM) Competition: Head Judging Committee; Co-Head Judge for the Americas West Jamboree at Stanford University, Palo Alto, CA, 13-14 Oct. 2012; Judge and Co-Emcee for the Awards Ceremony for the World Championship Jamboree at MIT, Cambridge, MA, 2-5 Nov. 2012
- 2011 International Genetically Engineered Machine (iGEM) Competition: Judge for the Americas Jamboree at The Institute of Biological Engineering, Indianapolis, IN, 9-10 Oct. 2011; Judge for the World Championship Jamboree at MIT, Cambridge, MA, 5-7 Nov. 2011
- iGEM Steering Committee, at the invitation of Randy Rettberg, Director, 2008-2009
- iGEM 2008, Instructor/Leader for Rice BioBeer team
- iGEM 2007, Instructor/Leader for Rice team
- iGEM 2006, **founding Leader, recruited students and faculty in Natural Sciences and Engineering**; Instructor of Rice team

Summer Institutes on Scientific Teaching (<http://www.summerinstitutes.org>)

- GCSI, Louisiana State University, July 22-26, 2019: Invited Facilitator
- GCSI, Louisiana State University, July 16-20, 2018: Invited Facilitator
 - Presentation: “Active Learning”
- GCSI, Louisiana State University, July 17-21, 2017: Invited Facilitator

- Presentation: “Active Learning”
- GCSI, Louisiana State University, July 18-22, 2016: Invited Facilitator
 - Presentation: “Active Learning”
- GCSI, Louisiana State University, July 19-24, 2015: Invited Facilitator
 - Presentation: “Assessment: Designing your classes for meaningful learning”
- GCSI, Louisiana State University, July 20-25, 2014: Invited Facilitator
 - Presentation: “Assessment: Designing your classes for meaningful learning”
- GCSI, Louisiana State University, July 21-26, 2013: Invited Facilitator
 - Presentation: “Assessment: Designing your classes for meaningful learning”
- Gulf Coast Summer Institute (GCSI), with The National Academies Summer Institutes on Undergraduate Education in Biology, Louisiana State University, July 15-20, 2012: Invited Facilitator
- National Academies Summer Institute on Undergraduate Education in Biology, University of Wisconsin-Madison, Madison, WI, June 20-25, 2011: Selected Participant

American Physiological Society (APS)

- The American Physiological Society Institute on Teaching and Learning (APS-ITL)
 - APS-ITL 2020, University of Minnesota, Minneapolis, MN, June 22-26
 - Organizing Committee, Co-Chair
 - APS-ITL 2018, University of Wisconsin-Madison, Madison, WI, June 18-22
 - Invited Workshop Facilitator: Tricks of the Trade: Collaborative Learning
 - Organizing Committee, Member
 - APS-ITL 2016, University of Wisconsin-Madison, Madison, WI, June 20-24
 - Invited Facilitator/Speaker:
 - Organizing Committee, Member
 - APS-ITL 2014, College of the Atlantic, Bar Harbor, ME, June 23-27
 - *Animal Physiology from Scratch* (Poster)
- APS Awards Selection Committee: reviewed applicants and selected award recipients
 - Teaching Career Enhancement Awards (2018, 2019)
 - Teaching of Physiology Section Research Recognition Award (2019)
- APS Teaching Section Steering Committee (2016-2018)
- Guyton Award Selection Committee (Appointed Position, 3 year term)
 - Past Chair, 2018-2019
 - Chair, 2017-2018
 - Chair-Elect, 2016-2017
- The Physiology Education Community of Practice ([PECOP](#)), Member

Reviewer for Education Journals and Teaching Resources

- *Advances in Physiology Education* (<http://advan.physiology.org>)
 - Associate Editor, 2018-present
 - Star Reviewer 2017
 - Invited to serve on the Editorial Board, 2017-2018
- *Course Source* (<http://www.coursesource.org>)
- Life Science Teaching Resource Community (LifeSciTRC) (<https://www.lifescitrc.org>)

- Review Board 2017

Professional Societies

- The American Physiological Society (APS)
- American Society for Biochemistry and Molecular Biology (ASBMB)
- American Society for Microbiology (ASM)

Participation in seminars or professional meetings on teaching

Rice University

- **IBL Lunch Discussion Series, Feb. 11, 2019:** Using curriculum maps to identify areas for strengthening student development of inquiry skills
- “Reframing the Lecture as a Pedagogy of Engagement” (A Keynote and Interactive Workshop), Dr. Claire Howell Major, Professor of Higher Education at the University of Alabama: Rice University's 6th Annual Symposium on Teaching and Learning, Hosted by the Rice Center for Teaching Excellence, January 4, 2019
- **CTE Teaching & Innovation Colloquy 2017-2018: "Using Discussion as a Tool for Meaningful Learning: Techniques and Strategies for Successful Implementation"** Invited by Josh Eyler, Director, CTE, to serve as Co-Facilitator for the Colloquy
- CTE Reading Group 2018: *How College Works*, Daniel F. Chambliss and Christopher G. Takacs (2014)
- "Why Won't They Talk: Using Discussion to Facilitate Learning” (A Lecture and Interactive Workshop), Dr. Jay Howard, Dean of the College of Liberal Arts and Sciences at Butler University: Rice University's 5th Annual Symposium on Teaching and Learning, Hosted by the Rice Center for Teaching Excellence, January 5, 2018
- **Treybig Teaching & Innovation Colloquy 2016-2017: "The Science of Learning: Improving Conceptual Understanding"** As a participant I will
 - Meet several times as a group (once in December, once in January, once in February, and once in March)
 - Read articles from the field of teaching and learning prior to each meeting
 - Attend a campus-wide lecture by a visiting speaker that will be sponsored by the Treybig program
 - Design a pedagogical tool (e.g., an assignment, an assessment of prior knowledge, a concept inventory, etc.) and implement the pedagogical tool in courses taught the following academic year
 - Share knowledge gained in the colloquy with departmental colleagues by the end of the academic year
- Rice University's Baker Institute with the MIT Enterprise Forum of Texas and Texas A&M University: Innovation in Education, April 26, 2017
- Rice University Teaching Awards Ceremony & Reception: Lisa Balabanlilar, Ph.D., 2016 Recipient, George R. Brown Prize for Excellence in Teaching, “Genghis Khan and the Liberal Arts Education: A Cautionary Tale," April 25, 2017

- CTE What's New in Research on Teaching and Learning: ***Challenging the Biased Brain: Creating Constructive Dialogue in the Classroom***, April 18, 2017: Robin Paige, Assistant Director of the Center for Teaching Excellence
- CTE What's New in Research on Teaching and Learning: ***How Much Should We Assign? What the Research Can (and Can't) Tell Us***, March 28, 2017: Betsy Barre, Associate Director of the Center for Teaching Excellence
- Rice University's Inaugural Treybig Teaching and Innovation Lecture, March 6, 2017: [Michelle K. Smith](#), Associate Professor of Biological Sciences, C. Ann Merrifield Professorship in Life Science Education, University of Maine, "What Are My Students Thinking? Using Multiple Modes of Assessment to Identify and Improve Student Conceptual Understanding"
- CTE Course (Re)Design Institute, Thursday, February 9, 2017, from 9-11am, Herring 129: faculty will apply research-based teaching and learning principles to designing a new course or elements of their existing courses. Topics covered include: conceptualizing a course meta-question, drafting/revising learning goals, and designing assignments, activities, & assessments.
- CTE Annual Reading Group 2017: *Mindset: The New Psychology of Success*, Carol S. Dweck, PH.D. (2006)
- CTE What's New in Research on Teaching and Learning: ***Getting Started with the Scholarship of Teaching and Learning***, January 24, 2017: Margaret Beier, Psychology; John Hutchinson, Dean of Undergraduates & Chemistry; Stephen Wang Mathematics
- CTE What's New in Research on Teaching and Learning: ***Learning Together: Why Collaborative Learning Works and How to Make it Happen***, November 16, 2016: Robin Paige, Assistant Director of the Center for Teaching Excellence
- CWOVC spring faculty workshop: Video Assignments in the Curriculum, March 30, 2016
- HOW DO WE LEARN & WHY DOES IT MATTER? Rice University's 3rd Annual Symposium on Teaching and Learning, Hosted by the Rice Center for Teaching Excellence, January 15, 2016
- Rice Teaching Excellence Seminar and Teaching Awards Reception: Ann Saterbak, Ph.D., 2011 Recipient of the George R. Brown Prize for Excellence in Teaching, "The Value of Problem-Based and Project-Based Learning," April 24, 2012
- Scientia Conference on Research and Innovation in Undergraduate Science and Engineering Education, Feb. 11-12, 2011
- WAC 2002: The Sixth National Writing Across the Curriculum Conference, Rice University, Houston, TX

National and International

- Experimental Biology 2019, Orlando, FL, April 6-9: Education Sessions for the Teaching of Physiology Section of The American Physiological Society
- 2019 Biology REU Site Workshop, Washington, D.C., April 4-6, 2019
- CUR Biennial Conference: Creating Collaborative Connections in & through Undergraduate Research, Arlington, VA, July 1-3, 2018

- Experimental Biology 2018, San Diego, CA, April 21-24: Education Sessions for the Teaching of Physiology Section of The American Physiological Society
- BioBuilder Synthetic Biology Professional Development Workshop at MIT, Aug. 2-4, 2017 (<http://biobuilder.org>): Invited to attend so I can lead a future BioBuilder Workshop with Houston area high school teachers
- 2017 Advanced Placement (AP) Reading Tour: Invited to a special, behind-the-scenes tour of the AP Reading as a VIP observer and guest of the College Board, Salt Lake City, Utah, June 7-8, 2017
- Experimental Biology 2017, Chicago, IL, April 22-24: Education Sessions for the Teaching of Physiology Section of The American Physiological Society
 - Claude Bernard Distinguished Lectureship: “Retrieval-Based Learning: Simple Strategies for Helping Students Learn,” Jeffrey D. Karpicke
 - SYMPOSIUM: Inclusive Practices for Diverse Student Populations
 - SYMPOSIUM: Examining the Changing Landscape of Course Delivery and Student Learning
- HKUST Workshop on “Regulatory Issues Associated with Genome Editing and Gene Drive – Regulation of synthetic biology in Asia,” April 3-5, 2017
- College Board AP Symposium on the Sciences, Chicago, IL, November 13-15, 2015
- Experimental Biology 2015, Boston, MA, March 28 – April 1
- 2014 Freshmen Research Initiative Second Annual Conference, University Texas at Austin, Austin, TX, March 26-28, 2014
- Invited to participate in the working conference with AAAS on *Vision and Change in Undergraduate Biology Education: Chronicling the Change* Meeting in Washington, D.C., Aug. 28-30, 2013 (<http://visionandchange.org/about-v-c-chronicling-the-changes/>)
 - Presenter for Working Group 5. How to Amass Evidence (Evaluation) of Change and its Effects, Aug. 30
- ASBMB RCN UBE Workshop: Effectively Assessing Laboratory and Research Skills, University of Tuscaloosa – Tuscaloosa, AL, Feb. 23, 2013
- [2012 BEN Scholar](#) Institute Training, Jan. 25-28, 2012, Washington, D.C.
- iGEM Spring Workshop: MIT, Boston, MA, May 16-17, 2009
- iGEM 2008 MIT North America Teachers Workshop, Boston, MA, May 3, 2008
- International Microarray Workshop at the University of Arizona, Tucson, AZ, Jan. 7-12, 2007
- iGEM 2007 MIT Teach the Teachers Workshop, Boston, MA, May 26, 2007
- iGEM 2006 MIT Teach the Teachers Workshop, Boston, MA, May 6, 2006
- Genome Consortium for Active Teaching (GCAT) NSF Workshop on Microarrays for Undergraduate Faculty: Data Analysis, Georgetown University, Washington D.C., July 6-7, 2004
- NCBI Workshop: A Field Guide to GenBank and NCBI Molecular Biology Resources, hosted by University of Texas at Austin, Austin, TX, June 29, 2004

- Visited University of California San Francisco and met with faculty, including Joe DeRisi, about research questions that can be asked using microarrays, May 2004
- Experimental Biology 2003, San Diego, CA, April 11-15
- Bioinformatics Workshop for Educators (NSF sponsored) at Rochester Institute of Technology, Rochester, NY, August 15-17, 2002
- Experimental Biology 2001, Orlando, FL, March 31 – April 4
- AAAS National Meeting 2000, Washington, D.C., February

Collaborations on teaching and mentoring matters

Rice University

- The Council on Undergraduate Research (CUR) Transformations Project Proposal, Rice University: Office of Inquiry-Based Learning, the Department of BioSciences, and the Department of Physics & Astronomy; Member of BioSciences Department leadership team
- QEP Scaffolding Experiential Inquiry and Research into the Curriculum Fund 2: Development and Enhancement Grants, 2017 - present: BioSciences faculty
- Rice Consortium for Research on Education and Teaching Excellence: CREATE
 - Proposal submitted for the Rice University InterDisciplinary Excellence Award (IDEA), May 19, 2017
 - Proposal submitted for the Rice Leading Innovation through Faculty Thought (LIFT) Project, April-May 2017
- Collaborations with Rice Teaching Faculty (*ongoing*)
 - Sandra Parsons, Ph.D., Assistant Teaching Professor, Director of Pedagogy in the Department of Psychology, and Carissa Zimmerman, Ph.D., Lecturer, Department of Psychology
 - Collaborating on 2018-2019 QEP proposal: Implementing and Enhancing Inquiry in the BCB Curriculum to evaluate evidence of inquiry-based learning in student reflections
 - David Caprette, Ph.D., Teaching Professor, BioSciences
 - Establishing course learning goals that are similar but progressive for our lab course sequence
 - Discussing how our lab courses feed into and build from each other to ensure that students have opportunities to learn the skills they need
 - Redesigning of the BioSciences teaching labs to create a better space for discovery-based lab courses
 - Introducing active learning in the classroom (e.g., The Organelle Debate in his non-majors biology course)
 - Incorporating primary literature into the animal physiology course that we co-teach (he followed my lead in his neurobiology course)
 - Creating reading guides to help students with understanding research articles for animal physiology
 - Implementing student-led discussions in advanced lab courses (I shared what I had done with my 400-level molecular biology lab and Dave adopted that approach for his 400-level physiology lab)
 - Suggesting approaches to organize teams in his lab and lecture courses

- Jamie Catanese, Ph.D., Lecturer, BioSciences
 - Mentoring him as he was gaining experience teaching (I encouraged him to write a Reflection about his first year and think about how his perspective evolved)
 - Application for GCSI 2016: I gave him suggestions for how he could implement new teaching strategies
 - Advising freshmen at O-week Academic Fair: I helped him with clarifications and questions from students
 - Brainstorming experiments
 - Discussing ways to improve team building for his students
 - Helping with learning rules/regulations at Rice for dealing with student grades, course waitlists, registration, etc.
- Christina Crawford, M.S.Ed, Assistant Director for Biology and Life Sciences, Rice Office of STEM Engagement
 - Providing higher level Biology instruction in Rice Excellence in Secondary Science (RESST)
 - Providing in depth instruction using active learning and inquiry methods of teaching in RESST
 - Assisting in lesson planning, organization, and preparation of class material for RESST
 - Mentoring RESST instructors on teaching best practices and program requirements
- Elizabeth Eich, Ph.D., Associate Director, Inquiry Based Learning
 - Establishing course learning goals that are similar but progressive for our lab course sequence
 - Discussing how our lab courses feed into and build from each other to ensure that students have opportunities to learn the skills they need
 - Redesigning of the BioSciences teaching labs to create a better space for discovery-based lab courses
 - Participating faculty on the HHMI Pre-College and Undergraduate Science Education Program Grant
 - Developing and co-teaching BIOC 413, an advanced elective lab course
 - Co-writing a Duncan Teaching Grant and a Brown Teaching Grant
 - Publishing an abstract and paper together
 - Piloting SCAL@R in Jones Commons (this collaborative effort results in SCAL@R spaces becoming available through the Rice Registrar)
- Leesa Tran, Ph.D., Weiss Instructor, Chemistry
 - Giving tips on how to implement and use a SCAL@R classroom set-up
 - Sharing information about our courses for undergraduate TAs
- Collaborations with BioSciences at Rice Research Faculty to incorporate research projects into teaching and/or to promote undergraduate research experiences (*ongoing*)
 - George Phillips, Ph.D., Professor of Biochemistry & Cell Biology and Chemistry, Associate Dean for Research, Associate Chair: NSF BioXFEL (2016-present)
 - Wassim Chehab, Ph.D., Assistant Research Professor in Biochemistry & Cell Biology: BIOC 112, BIOC 413 (2015-present)

- Dan Wagner, Ph.D., Associate Professor of Biochemistry & Cell Biology: BIOC 111 (2015-present)
- Joff Silberg, Ph.D., Associate Professor of Biochemistry & Cell Biology, Associate Professor of Bioengineering: BIOC 313, Rice iGEM, REU BioNetworks, BIOC 311 (2006-present)
- George Bennett, Ph.D., Professor of Biochemistry & Cell Biology: Rice iGEM and REU BioNetworks (2006-present), Rice LIFT: Bioelectronics
- Janet Braam, Ph.D., Weiss Professor of Biochemistry & Cell Biology, Department Chair: BIOS 312, BIOC 413, BIOC 112 (2002-present)
- BIOC 311: work with Ian Campbell, BCB grad student to transition course from traditional lab to discovery-based, project-focused research course
- BIOC 111: work with Thomas Clements, Ph.D. Candidate in BCB, to implement his graduate research into this discovery-based lab course
- Participating faculty on the HHMI Pre-College and Undergraduate Science Education Program Grant: Cross-departmental collaborations and funding to support innovative designs/transformations for lab courses (BIOC 112, 313, 111, 413, 311)
- Lab Coordinators Group (<http://www.owl.net.rice.edu/~labgroup/>): Worked with teaching faculty in Natural Sciences and Engineering to create interdisciplinary teaching laboratory materials

National and International

- Collaboration with King L. Chow, Ph.D., Professor of Life Science & Biomedical Engineering, Director of Interdisciplinary Programs Office, Hong Kong University of Science and Technology (HKUST)
 - Current
 - Brainstorming ways to continue and strengthen the reciprocal exchange of Rice and HKUST students during the summer
 - Invited speaker, HKUST in May 2018: “Undergraduate Research Opportunities: From Project-Based Lab Courses to the International Genetically Engineered Machine Competition”
 - 2016
 - Invited to share my view from the perspective of a key player involved in synthetic biology education at the undergraduate level in an upcoming HKUST workshop on regulatory issues with synthetic biology in Asia
 - 2015
 - Discussed how material produced by the joint team will be archived and stored at Rice and HKUST
 - Strategized how the collaboration would go forward after the Rice students return to the US in late July
 - Proposed division of labor in terms of preparing the wikipedia, the oral and poster presentations, and human practices and policy issues.
 - Planned ahead for a longer term collaboration between Rice and HKUST beyond this year’s iGEM Jamboree
- Summer Institute (SI) evaluation project directed by Yale University's Center for Teaching and Learning with support from a National Science Foundation (NSF-TUES) grant (2016-

2017): This study is examining the impact of the National Academies of Sciences Summer Institutes (SI) training on science faculty and their students.

- Discussed my SI training and teaching practices with a member of the Yale research team
- Informed my students about the study and encouraged them to complete the online survey
- Provided materials related to my teaching practices for the research team to review
- Allowed a member of the research team to sit in on several of my classes (BIOC 112, 413, and 335/536) to observe my teaching style and student responses
- Reviewed class pathway models built by a member of the research team to show how the activities and practices in my classes help students achieve desired short and long term learning outcomes (*Class Pathway Models included as supplemental materials*)
- Animal Physiology Group (*ongoing*): formed ad hoc at APS-ITL 2014
 - Sydella A. Blatch, Ph.D., Diversity and Professional Development Program Manager, The American Society for Cell Biology (former Associate Professor of Biology, Stevenson University,
 - William Cliff, Ph.D., Professor in Biology and Prehealth Advisor, Niagara University, NY
 - Patricia A. Halpin, Ph.D., Assistant Professor of Biological Sciences & Biotechnology, University of New Hampshire at Manchester
 - Kerry Hull, Ph.D., Professor in Biological Sciences, Bishop's University, Quebec Canada
- Collaborations with Faculty outside of Rice (*ongoing*)
 - Janie Brennan, Ph.D., Lecturer, Department of Energy, Environmental, & Chemical Engineering, Washington University in St Louis
 - Giving advice regarding how to communicate issues relating to culture and use of titles
 - Sharing examples of recommendation letters for students
 - Discussing and reflecting on how to grade student writing, including the importance of drafts
 - Advising on how to navigate departmental and institutional culture and procedures
 - Discussing the process of writing an IRB protocol for human subjects research
 - Rachael Hanby Webster, Ph.D., Professor, City College of San Francisco, Instructor, UC Berkeley Extension, Program Manager, Bay Area Biotechnology Education Consortium, Science Coordinator, Highlands Elementary School
 - Providing many opportunities for her to be an undergraduate teaching assistant when she was at Rice
 - Mentoring her as she learned about teaching and giving constructive and supportive feedback in a nurturing environment
 - Providing key insights on what subject material should be covered and how best to convey it when developing new lecture and lab courses
 - Providing structure to set up successful lab projects and experiments
 - Deciding which equipment would be best suited for a particular biology lab course

- Delivering course material appropriately to the intended target audience
 - Giving guidance on how to negotiate and navigate when working with colleagues with challenging personalities
- Christie A. Landry, M.S., Instructor of Biological Sciences, Nicholls State University: I shared an activity for teaching countercurrent multiplication (CCM) in the kidney; my activity has helped her reach her teaching goals of
 - Collaborating with colleagues to increase active learning in the classroom
 - Demonstrating difficult concepts through classroom activities
 - Collecting and analyzing data of student performance through scientific teaching methods
- Veronica G. Martinez Acosta, Ph.D., Associate Professor of Biology, University of the Incarnate Word: team-based learning strategies
 - Sharing team-based learning strategies and approaches I have implemented in my courses
 - Assisting with pedagogical design in a cell biology course
 - Suggesting cooperative activities to promote group work

HONORS, AWARDS, or RECOGNITIONS

Invitations Based on Teaching Reputation / Requests for Advice on Teaching

- Baylor College of Medicine ACTOR (Achieving Competencies in Teaching through Observation and Reflection) Program, Faculty Mentor, 2019 Pilot Program
- Fondren Fellow Research: Interviewed by Jade Kanemitsu (Undergraduate student, Cognitive Science) and Yifan Wang (PhD student, Anthropology), Library Learning for Inquiry Project, March 8, 2019
- Teaching Interest Brown Bag, Psychology Dept., Feb. 14, 2019: Group Contracts for Student Teamwork (BIOC 335/536 Cellular and Molecular Animal Physiology)
- Invited to design and lead Rice **CTE Workshop: Inquiry-Based Learning Through Collaborative Group Work**, January 29, 2018
- BioSciences Teaching Discussion (Departmental Faculty Colloquium): “Reflection on Reflections,” Dec. 1, 2017
- Auburn University College of Sciences and Mathematics: Society of Women in Sciences and Mathematics (SWSM) Symposium, May 4, 2017, Auburn University, AL: invited to participate in the Career Corner
- HKUST Workshop on “Regulatory Issues Associated with Genome Editing and Gene Drive – Regulation of synthetic biology in Asia,” April 3-5, 2017: King L. Chow, Ph.D., Professor of Life Science & Biomedical Engineering, Director of Interdisciplinary Programs Office invited me to join this event to share my view from the perspective of a key player involved in synthetic biology practice in the undergraduate level
- American Physiological Society
 - APS-ITL 2018
 - Invited Workshop Facilitator: “*Tricks of the Trade: Collaborative Learning*”
 - Organizing Committee, Member
 - APS-ITL 2016

- Invited speaker: “*Student role in learning: what is it and how do we get there?*”
 - Organizing Committee, Member
- GCSI at LSU: Invited to serve as Facilitator, 2012-2017
- Yale Center for Teaching and Learning National Academies of Sciences Summer Institutes (SI) Impact Study: Mark Graham, Evaluation Director, invited me to collaborate in this study based upon my efforts towards implementing *Scientific Teaching*; I was identified as one of 15 potential faculty collaborators for this study. (January 2016-present) [*see Executive Summary from Yale University*]
- iGEM head judging/executive judging committee: invited to join by Randy Rettberg, Director (2014-present); some of my roles and responsibilities include
 - Review feedback from previous year’s judges and/or teams
 - Meet with iGEM Headquarters (currently in Boston, MA) several times during the year
 - Offer advice/knowledge/wisdom regarding potential improvements in judging
 - Help with editing/updating rubric, handbook, and other judging-related media
 - Work with iGEM HQ to define and revise medal criteria (<http://2017.igem.org/Judging/Medals>)
 - Review and update current year Judging Hub website
 - Review and evaluate judging applications
 - Organize & run pre-Jamboree judging information communications (e.g., calls, mini FAQ, Slack, emails)
 - Recommend new members for EJC
 - Attend the Jamboree
 - Organize and help run all judging meetings
 - Staff the EJC table and help answer judging questions
 - Ratify votes for medals, awards, and finalists
 - Participate in awards ceremony
 - Coordinate with Responsible Conduct Committee (RCC) and Safety Committee
- Rice University, The Center for Written, Oral, & Visual Communication (CWOVC): Jennifer Shade Wilson, Ph.D., Director, CWOVC and Senior Lecturer, Program in Writing and Communication
 - Delegation from Texas Lutheran University, November 17, 2016: Met with visiting faculty members and shared with them the various ways the CWOVC has supported my students
 - *CWOVC fall faculty workshop: Teaching Scholarly Reading Skills in the Disciplines*, November 9, 2016: Faculty panelist representing Natural Sciences; invited to share my Journal Club activity for BIOC 313 Introductory Synthetic Biology, an advanced, elective laboratory course
- College Board AP Symposium on the Sciences, Nov. 13-15, 2015, Chicago, IL: represented BioSciences at Rice at the request of Dean Peter Rossky, Weiss School of Natural Sciences
- HKUST visits in 2015, invited by King L. Chow, Ph.D., April 25–May 2 and July 6-10

- American Society for Microbiology, *Invited speaker*: “Nobody Sleeps in My Class.” Texas Branch Fall Meeting of the American Society for Microbiology (ASM), November 6-8, 2014, The University of Texas Health Science Center at Houston, Houston, TX
- Invited to participate in the working conference with AAAS on *Vision and Change in Undergraduate Biology Education: Chronicling the Change* Meeting in Washington, DC, Aug. 28-30, 2013 (<http://visionandchange.org/about-v-c-chronicling-the-changes/>)
- Rice University, Pre-AP Science Inquiry Workshop: Guest presenter (co-presenter, Elizabeth Eich), “Student-Centered Learning in Science,” June 28, 2012
- WAC 2002: The Sixth National Writing Across the Curriculum Conference, Rice University, Houston, TX, presentation about communication in BIOS 311

Teaching Awards

Rice University

- 2019 Teaching Award for Excellence in Inquiry-Based Learning
- 2019-2020 QEP Scaffolding Experiential Inquiry and Research into the Curriculum Fund 2: Development and Enhancement Grants: “Continued Implementation and Enhancement of Inquiry in the Biochemistry & Cell Biology Curriculum,” Lead Implementing Faculty (\$30,000 requested)
- 2018-2019 QEP Scaffolding Experiential Inquiry and Research into the Curriculum Fund 2: Development and Enhancement Grants: “Implementing and Enhancing Inquiry in the Biochemistry and Cell Biology Curriculum,” Lead Implementing Faculty (\$30,000)
- 2017-2018 QEP Scaffolding Experiential Inquiry and Research into the Curriculum Fund 2: Development and Enhancement Grants: “Mapping the Use of Inquiry in a Flexible Curriculum: Intersecting Paths for Biochemistry and Cell Biology,” PI with Co-PIs from BioSciences (\$30,000)
- 2017 George R. Brown Award for Superior Teaching (Rice University - \$2,000)
- Treybig Teaching & Innovation Colloquy 2016-2017: selected by a committee of CTE Faculty Fellows as a participant in this inaugural program
- Rice University Baker College Best Professor, 2016
- Rice University Will Rice College Favorite Professor, 2015
- 2015 Brown Foundation Teaching Grant: “Authentic research-based learning: a collaboration between Rice University and The Hong Kong University of Science and Technology” (\$4,450)
- Favorite Professor of Scholar Athlete, 2014
- 2012 Charles Duncan Award for Instruction in Natural Sciences: “Preparing Graduate Students To Be Effective Teachers,” with Janet Braam, David Caprette, and Elizabeth Eich (\$5,900)
- Rice University Baker College Best Professor, 2012
- 2011 Brown Foundation Teaching Grant: “Promotion of Active Learning in Core Laboratory Courses in Biochemistry and Cell Biology through Undergraduate Learning Assistants,” with Elizabeth Eich (\$4,000)
- Rice Pre-Medical Society Outstanding Faculty Award, 2002

National

- National Academies Education Mentor in the Life Sciences 2012-2019
- [2012 BEN Scholar](#): “The BEN Scholars Program is one of the grassroots outreach activities of the National Science Digital Library (NSDL) Biological Sciences Pathway. BEN Scholars are given support to promote the use of digital libraries and inquiry-based learning in higher education biological sciences lecture and laboratory courses, as well as research training programs...BEN Scholars are leaders in biological sciences teaching and learning, with a passion for improving undergraduate education. BEN Scholars conduct outreach activities for biological sciences faculty on their campuses, throughout their region, and nationally through professional societies.”
- National Academies Education Fellow in the Life Sciences 2011-2012

Other Honors, Awards or Recognitions

- Distinguished Faculty Associate, Brown College 2018-2019 (Rice University)
- Distinguished Faculty Associate, Brown College 2017-2018 (Rice University)
- Outstanding Faculty Associate, Brown College 2016-2017 (Rice University - \$3,000)
- American Physiological Society Teaching Section: Appointed Chair-Elect, Guyton Award Committee, 2016 (3-year appointment)
- HKUST-Rice Strategic Partnership Sponsorship Scheme: A joint undergraduate exchange education-research platform between HKUST and Rice University based on the collaboration in a synthetic biology-centered project in technology development, educational exchange and the engagement in the iGEM competition (2016)
- iGEM Executive Judging Committee 2014-present
- BioSciences Kistic Service Award 2014
- Office of Information Technology (OIT), TEACHING AND TECH Blog
 - BETH BEASON-ABMAYR FLIPS A BIOLOGY CLASS, by Carlyn Chatfield, April 9, 2014
 - LABS AND VIDEOS - LABEOS?, by Kristin Sweeney, August 9, 2014
 - COST AND PAYOFF: FLIPPED AND SCAL@R CLASSES AT RICE, by Kristin Sweeney, September 16, 2014
- iGEM Championship Jamboree Head Judge 2012-2014
- iGEM Americas Regional Head Judge 2013, Toronto, CA
- iGEM Americas West Regional Head Judge 2012, Stanford, CA
- Inaugural Judges' Prize, iGEM 2012 World Championship Jamboree
- iGEM Championship Jamboree Judge 2011
- iGEM Americas Regional Judge 2011, Indianapolis, IN
- Rice University School of Social Sciences Gateway Study of Leadership TURNING POINTS {series II | 2012 - 2013} Natural Sciences, Featuring Faculty in the Weiss School of Natural Sciences (<http://turningpoints.rice.edu>): I was featured in each booklet
 - Choosing Academia: Defining Success in Science, pp. 5-6
 - Cultivating Mentors: Mentors at Each Step of the Journey, pp. 13-15; Help You Reach Your Goals, pp. 27-29
 - Developing Skills: The Essential Balance, pp. 17-18

- Discovering Opportunities: Uncertainty is Okay, pp. 13-15
- Embracing Leadership: Gender Equality? pp. 19-20
- The Rice Thresher: “Classes test SCALE-UP method,” October 21, 2011: article described when this teaching strategy premiered in two undergraduate laboratory courses (BIOC 311 and BIOC 211)
- ASBMB Undergraduate Faculty Travel Award (\$500), Experimental Biology 2003, San Diego, CA, April 11-15
- American Society Biochemistry and Molecular Biology (ASBMB) Undergraduate Faculty Travel Award (\$500), Experimental Biology 2001, Orlando, FL, March 31 – April 4

TEACHING/EDUCATION PUBLICATIONS

Peer-Reviewed Publications

- **Beth Beason-Abmayr**, and Patricia Halpin, manuscript in progress for follow-up on “The Fictional Animal Project,” will submit to *Advances in Physiology Education*
- **Beth Beason-Abmayr**, manuscript in progress for BIOC 335 Cellular and Molecular Animal Physiology course, will submit to *Advances in Physiology Education*
- **Beth Beason-Abmayr** and David R. Caprette, “Countercurrent multiplication: An Active Exercise Where You Play the Role of Glomerular Filtrate,” manuscript in progress, will submit to *Advances in Physiology Education*
- **Beth Beason-Abmayr** and Jennifer Shade Wilson, “Building a Partnership with a Campus Communication Center,” *Journal Microbiology & Biology Education* 19: 1-6 (2018)
DOI: <https://doi.org/10.1128/jmbe.v19i1.1495>
- Sydella Blatch, William Cliff, **Beth Beason-Abmayr**, and Patricia Halpin, "The Fictional Animal Project: A Tool for Helping Students Integrate Body Systems," *Advances in Physiology Education* 41: 239-243 (2017) DOI: 10.1152/advan.00159.2016
- Christina Crawford, **Beth Beason-Abmayr**, Elizabeth Eich, Jamie Scott, and Carolyn Nichol, “Going Viral,” *The Science Teacher*, Vol. 81 No. 6: 51-56 (2014)
- Submitted six BEN Scholars Teaching Resources to [Life Science Teaching Resource Community](#) in 2012 (*resources were peer-reviewed before online publication*): [Laboratory Notebook](#); [Protein Purification 1: Extraction and Precipitation](#); [Protein Purification 2: Size Exclusion Chromatography](#); [Protein Purification 3: Anion Exchange Chromatography](#); [Protein Purification 3: Anion Exchange Chromatography Supplemental](#); [Protein Purification Supplemental: Buffers and Assays](#)
- D. R. Caprette, S. Armstrong, and **K. B. Beason**, “Modular laboratory courses: an alternative to a traditional laboratory program,” *Biochem. Mol. Biol. Edu.* 33: 351-355 (2005)
- J. L. Brewster, **K. B. Beason**, T. T. Eckdahl, and I. M. Evans, “The microarray revolution: perspectives from educators,” *Biochem. Mol. Biol. Edu.* 32: 217-227 (2004)

Teaching Abstracts

- **Beth Beason-Abmayr**, “Does Implementation of Flipped Teaching Combined with Retrieval Practice Enhance Student Engagement in Class Discussions?” Poster Session Title: Teaching, Learning and Testing in The Biological and Biomedical Sciences, Experimental Biology 2019, Orlando, FL, April 6-9

- Veronica Leautaud, Sandra W Bishnoi, Margaret Beier, Jackie Torres, Jackie Gilberto, Ann Saterbak, Elizabeth Eich, **Beth Beason**, Michelle Gilbertson, and Rebecca Richards-Kortum, “Improving student outcomes in STEM through adoption of client-based projects,” Understanding Interventions Conference, San Antonio, TX, March 4, 2017
- **K. Beth Beason-Abmayr**, “Student role in learning: what is it and how do we get there?” The American Physiological Society Institute on Teaching and Learning, Madison, WI, June 20-24, 2016
- William Cliff, Kerry Hull, Sydella Blatch, Patricia A. Halpin and **Beth Beason-Abmayr**, “Core Competencies in Animal Physiology,” Abstract 541.32 (Poster T35) in Teaching, Learning, and Testing in the Biological and Biomedical Sciences I, Experimental Biology 2015, Boston, MA
- **K. Beth Beason-Abmayr** and David R. Caprette, “Animal Physiology from Scratch” (Abstract ITL-4), The American Physiology Society Institute on Teaching and Learning, Bar Harbor, ME, June 23-27, 2014
- *Invited to Submit Abstract for AAAS Vision and Change in Biology Undergraduate Education: Chronicling Change, Inspiring the Future:* **Beth Beason-Abmayr**, David Caprette, Adrienne M.S. Correa, Elizabeth Eich, and Scott Solomon, “Towards Student-Centered Active Learning at Rice (SCAL@R)”, July 2013
- **B. Beason** and D. Caprette, “Integrating a sciences and engineering laboratory program,” Experimental Biology 2005, San Diego, CA
- Saterbak, A., **B. Beason**, K. Cox, J. Bordeaux, D. Caprette. “Coordinating Laboratory Courses Across Engineering and Science Curricula.” American Society of Engineering Education Annual Meeting, Salt Lake City, UT, June 2004
- **K. B. Beason**, D. Caprette, and F. B. Rudolph, “Teaching communication skills in a laboratory course,” Experimental Biology 2003, San Diego, CA
- **K. B. Beason**, F. B. Rudolph, and D. Caprette, “Coordinating laboratory courses across a science and engineering curriculum,” Experimental Biology 2003, San Diego, CA
- **K. B. Beason**, “Incorporating communication into a core laboratory course: BIOS 311 lab module in protein purification,” The Sixth National Writing Across the Curriculum Conference, Rice University, Houston, TX, 2002

Other Publications and Teaching Materials

- iGEM Judging Handbook, 2017-2019
- iGEM Medal Criteria, 2017-2019
- [iGEM 2016 Judging Handbook](#), **Chief Editor**
- [The Way I See It: iGEM offers unique student experience](#), Rice News, Oct. 12, 2015
- [iGEM 2015 Judging Handbook Part 1](#), **Contributing Author**
- [iGEM 2014 Judging Handbook Part 2 v1.0](#), **Contributing Author**
- [iGEM Judging Rubric](#), **Contributing Author** to Inaugural and Subsequent Rubrics, 2012-present
- [Rice at Large Fall 2013](#): Teachers and Students Benefit From Biology Program at Rice
- **Course web sites**: Created web sites for each of my lab courses; I taught myself HTML and converted “paper” versions of lab manuals to online resources; I revise these each semester
 - [BIOC 413 Experimental Molecular Biology](#), 2010 to date

- [BIOC 313 Introductory Synthetic Biology](#), 2008 to date
- [BIOC 111 Fundamentals of Experimental Biology / BIOC 112 Introductory Biological Research Challenges](#), 2008 to date (created with David Caprette, Ph.D.)
- [BIOC 311 Advanced Experimental Biosciences](#), 1999 to date
- [BIOS 313 Laboratory Module in Microarrays](#), 2003-2007
- BIOS 312 Experimental Molecular Biology: Arabidopsis, 2003-2009 (*archived*)
- BIOS 312 Laboratory Module in Molecular Biology: Cloning and PCR, 1999-2003 (*archived*)
- BIOS 313 Laboratory Module in DNA Sequencing, 1999-2002 (*archived*)

OTHER PROFESSIONAL ACTIVITIES and CONTRIBUTIONS to TEACHING at RICE

Design of new or transformed courses

- **BIOC 111 Fundamentals of Experimental Biology** (laboratory) [2008-2017]
 - Created/developed with David Caprette, Ph.D.
 - PILOT course in Fall 2008
 - Transformed to discovery-based lab for Fall 2015
 - Implemented Ph.D. candidate in BCB as my co-instructor
- **BIOC 112 Introductory Biological Research Challenges** (laboratory)
 - Created/developed as a discovery-based lab course with Elizabeth Eich, Ph.D.
 - PILOT course in Spring 2015
- **BIOC 215 Biosciences Lab Teaching** (Undergraduate TAs)
 - Created/developed with David Caprette, Ph.D.
 - PILOT course in Fall 2009
- **BIOC 311 Advanced Experimental Biosciences** (laboratory)
 - Legacy core lab course for BCB majors that I have been teaching since Fall 1998
 - Transformed to discovery-based lab for Spring 2017
 - Worked with Ph.D. student in BCB to leverage his research into the project
- **BIOS 312 Experimental Molecular Biology** (laboratory)
 - Legacy elective lab course for BCB majors that I had been teaching since Fall 1998
 - Converted to discovery-based lab course for Fall 2003
- **BIOC 313 Introductory Synthetic Biology** (laboratory)
 - Modified previous legacy elective lab course, BIOS 313 Advanced Experimental Molecular Biology
 - BIOS 313 Laboratory Module in DNA Sequencing (up to 2003)
 - BIOS 313 Laboratory Module in Microarrays (2003-2007)
 - PILOT course in Spring 2008
 - Leveraged experience from iGEM to focus on problem-based solving
 - Transformed to discovery-based lab for Fall 2014
 - Worked collaboratively with Dr. Jonathan Silberg in BioSciences to identify recent Requests for Proposals (e.g, DARPA) to guide students in developing their own project ideas

- Integrated current literature into course which includes topics ranging from cutting edge synthetic biology research to policy and challenges with translation
 - Integrated fundamental education in biology with an exciting design project
- **BIOC 335 Cellular and Molecular Animal Physiology** (lecture)
 - Inspired by my experiences as a participant and mentor at the National Academies Summer Institutes on Undergraduate Education in Biology
 - Arose from my love of animal physiology
 - Created/designed with David Caprette, Ph.D.
 - PILOT course in Spring 2014
 - Built from scratch, 100% active learning
 - Emphasizes group work and studies of primary literature (peer-reviewed journal articles) to all levels of students, majors and non-majors
- **BIOC 413 Experimental Molecular Biology** (laboratory)
 - Foundation for this course was BIOS/BIOC 312 Experimental Molecular Biology
 - Created/designed as a capstone, discovery-based elective lab course with Elizabeth Eich, Ph.D.
 - PILOT course in Spring 2010
- **BIOC 520/521 Teaching Biology Via Active Learning I/II** (lecture)
 - Created/designed with Elizabeth Eich, Ph.D.
 - PILOT courses in Fall 2012/Spring 2013
- **BIOC 536 Cellular and Molecular Animal Physiology** (graduate level, lecture)
 - Created additional assignments for BIOC 335 to bring class up to graduate level (with David Caprette, Ph.D.)
 - PILOT course in Spring 2016

Use of new methods of teaching, assessing learning, grading

- Implementation of discovery-based design for all of my lab courses for majors (BIOC 111, 112, 311, 313, 413)
- Design of new lecture course with 100% active learning strategies (BIOC 335/536)
- Implementation of evidence-based Scientific Teaching strategies (Active Learning, Assessment, Inclusive Teaching), <http://www.summerinstitutes.org>: I incorporated Scientific Teaching into BIOC 311 in Fall 2011 and have now adopted this approach in all of my courses (labs and lectures)!
- PILOT for the IDEA Course Evaluation Instrument for all 3 sections of BIOC 311, Fall 2016
- PILOT for Canvas Course Management System for BIOC 413, Spring 2016
- SCAL@R classrooms (Jones Commons, Duncan College Classroom 113, Rayzor 123, Herring 129)
 - BIOC 335, Spring 2014 to present
 - BIOC 311, Fall 2011 (Rice SCALE-UP PILOT Program) to 2017

Instructional improvement projects developed or carried out

- Timeline for development of discovery-based laboratory courses for BioSciences majors

- Spring 2017: transformed BIOC 311 Advanced Experimental Biosciences
- Fall 2015: transformed BIOC 111 Fundamentals of Experimental Biology
- Spring 2015: created BIOC 112 Introductory Biological Research Challenges
- Fall 2014: transformed BIOC 313 Introductory Synthetic Biology
- Spring 2010: created BIOC 413 Experimental Molecular Biology
- Fall 2003: transformed BIOS 312 Experimental Molecular Biology
- Spring 2003: transformed BIOS 313 Advanced Experimental Molecular Biology (Microarray Analysis)
- The Center for Written, Oral, & Visual Communication (CWOVC): Work with Jennifer Shade Wilson, Ph.D., Director, to develop/design workshops that focus on specific communication-based requirements for two of my laboratory courses; Dr. Wilson leads the workshop during a class meeting each semester (*ongoing*)
 - BIOC 112 Introductory Biological Research Challenges: Research Presentation
 - BIOC 313 Introductory Synthetic Biology: Journal Club Presentation
- RESST Biology Program
 - Created BIOC 520 and 521 Teaching Biology Actively I and II with Dr. Elizabeth Eich in Summer 2012
 - Designed a week-long summer institute modeled after the National Academies Summer Institutes on Scientific Teaching
- Rice SCALE-UP Pilot Program 2011: implemented the SCALE-UP method in BIOC 311
- Lab Coordinators Group (<http://www.owl.net.rice.edu/~labgroup/>), **Member:** Teaching faculty in Natural Sciences and Engineering formed an ad hoc group to discuss common challenges and desired outcomes in laboratory education (2001-2008)
 - developed a shared statement of the philosophy behind laboratory education
 - developed an interdisciplinary set of five major teaching/learning objectives that define the shared objectives of the undergraduate teaching laboratories in Natural Sciences and Engineering at Rice University
 - described six levels of achievement in proficiency standards for laboratory related skills to guide students as they progress through our program
 - designed web-based reference materials (e.g., dimensions and units, graphing, error analysis and significant figures)

Curriculum revision or development

As a member of the Undergraduate Curriculum Committee in my department since 2008, I have recommended and reviewed curriculum changes and assessed program objectives for the Biochemistry and Cell Biology department initially and now for BioSciences at Rice, which formed in 2014 with the merger of BCB and EEB. Some of our current efforts include

- Complete a general, overall review of current course offerings in our department
 - Look for opportunities/synergies for teaching between different programs
 - Identify any important gaps in our curriculum
- Enhance/improve the Biological Sciences degree program (*long-term effort*)
- Generate a Quality Education Task Force Report for Undergraduate Programs, Biochemistry and Cell Biology (BA, BS, BS/MA/PhD), Department of BioSciences (drafted by Daniel Wagner, Chair of BCB Undergraduate Curriculum Committee, 2015): I contributed to this report in the following areas:

- Provided insights into how current infrastructure of the teaching laboratory spaces and classrooms as well as availability of funding for summer student research experiences limit the quality of education and teaching in our department
- Described how we have recently increased our offerings of “authentic, client-based research laboratory courses” to further students’ education outside of the classroom
- Highlighted teaching innovations and strategies that we have implemented in our classrooms and labs
- Identified areas where our department could do better

Preparation of teaching resources

- Reading guides for BIOC 335/536 Cellular and Molecular Animal Physiology
 - Chapter reading guides for Hill et al.
 - Paper reading guides for each assigned research article (from primary literature)
- Canvas/OWL-Space course sites: Modules/lessons, assignments, quizzes, surveys, etc.
- Co-developed the *placement exam* to identify students who need to start the laboratory program at a more introductory level, with Dr.’s David Caprette and Elizabeth Eich
- OWL-Space Project Sites that I requested/designed
 - Rice iGEM
 - REU BioNetworks (Su12, Su14, Su15, Su16, Su17) and BioXFEL (Su16, Su17)
 - BCB Teaching Lab Collaborative Site
 - BCB Safety

TEACHING PRESENTATIONS

- Rice CTE Workshop: Inquiry-Based Learning Through Collaborative Group Work, January 29, 2018
- BioSciences Teaching Discussion (Departmental Faculty Colloquium): “Reflection on Reflections,” Dec. 1, 2017
- Rice LIFT Symposium Presentation: CREATE: Consortium for Research on Education and Teaching Excellence, May 2, 2017
- “Student role in learning: what is it and how do we get there?” The American Physiological Society Institute on Teaching and Learning, June 20-24, 2016, Madison, WI: *Invited Speaker*
- “Nobody Sleeps in My Class.” Texas Branch Fall Meeting of the American Society for Microbiology (ASM), November 6-8, 2014, The University of Texas Health Science Center at Houston: *Invited Speaker, Educational Session*
- “Animal Physiology from Scratch.” The American Physiological Society Institute on Teaching and Learning, June 23-27, 2014, College of the Atlantic, Bar Harbor, ME
- “Integrating a sciences and engineering laboratory program.” Experimental Biology 2005, San Diego, CA
- “Teaching communication skills in a laboratory course.” Experimental Biology 2003, San Diego, CA
- “Coordinating laboratory courses across a science and engineering curriculum.” Experimental Biology 2003, San Diego, CA

- "Incorporating Communication into a Core Laboratory Course: BIOS 311 Lab Module in Protein Purification." WAC 2002: The Sixth National Writing Across the Curriculum Conference, Rice University, Houston, TX, March 8, 2002
- "The Cell Cycle." Guest lecturer for Introductory Biology (BIOS 201), Department of Biochemistry & Cell Biology, Rice University, Houston, TX, Sept. 20, 2000
- "Signal transduction." Guest lecturer for Introductory Biology (BIOS 201), Department of Biochemistry & Cell Biology, Rice University, Houston, TX, Sept. 18, 2000

RESEARCH PUBLICATIONS

- Y.-T. Lai, **K. B. Beason**, G. P. Brames, J. S. Desgrosellier, M. A. Cleggett, M. V. Shaw, C. B. Brown, and J. V. Barnett, "Activin receptor-like kinase 2 can mediate atrioventricular cushion transformation," *Dev. Biol.* 222, 1-11 (2000).
- **K. B. Beason**, C. G. Acuff, M. E. Steinhelper, and T. S. Elton, "An A/T-rich cis-element is essential for rat angiotensin II type 1A receptor transcription in vascular smooth muscle cells," *Biochimica et Biophysica Acta* 1444, 25-34 (1999).
- Lai, Yen-Tsun, **K. Beth Beason**, Gregory P. Brames, Christopher B. Brown, and Joey V. Barnett. An atypical Type I Transforming Growth Factor Beta receptor signals atrioventricular cushion transformation. American Heart Association, 71st Scientific Sessions, Dallas, TX, Nov., 1998
- Lai, Yen-Tsun, **K. Beth Beason**, and Joey V. Barnett. Role of the Type I Transforming Growth Factor β Receptors in signaling atrioventricular cushion transformation. Weinstein Cardiovascular Development Conference, Nashville, TN, 1998
- **Beason, K. Beth**, Yen-Tsun Lai, and Joey V. Barnett. ChALK5 and ChALK2 are the chick homologues of the mammalian Type I TGF β receptors. Weinstein Cardiovascular Development Conference, Nashville, TN, 1998
- **Beason, K. Beth**, Gregory P. Brames, Yen-Tsun Lai, Michelle A. Cleggett, and Joey V. Barnett. Characterization of chick Type I TGF β receptors. Weinstein Cardiovascular Development Conference, Cincinnati, OH, 1997
- **Beason, K. Beth**, and Terry S. Elton. Analysis of the rat type 1A angiotensin II receptor promoter. *FASEB J.* 9(3): A294 (#1701), 1995
- **Beason, K. Beth**, and Terry S. Elton. Transcriptional regulation of the rat type 1A angiotensin II receptor. The 15th Scientific Meeting of the International Society of Hypertension, Melbourne Australia, Abstract #990, p. 5179, 1994
- S. Baogen, M. M. Martin, **K. B. Beason**, P. J. Miller, and T. S. Elton, "The genomic organization and functional analysis of the promoter for the human angiotensin II type 1 receptor," *Biophys. Biochem. Res. Commun.* 204, 1039-1046 (1994).
- D. J. Benos, S. Cunningham, R. R. Baker, **K. B. Beason**, Y. Oh, and P. R. Smith, "Molecular characteristics of amiloride-sensitive sodium channels," *Rev. Physiol. Biochem. & Pharm.* 12, 31-113 (1992).
- **Beason, K. Beth**, and Marie W. Wooten. Expression of protein kinase C isoforms during differentiation of PC12 cells. *Ala. Acad. Sci.* 61(3): 141, 1990

RESEARCH PRESENTATIONS

- "The role of TGF β receptors in cardiovascular development." Department of Biology, Franciscan University of Steubenville, Steubenville, OH, July 22, 1998
- "The role of TGF β receptors in cardiovascular development." Department of Biological Sciences, Delta State University, Cleveland, MS, July 16, 1998
- "ChALK5 and ChALK2 are the chick homologues of the mammalian Type I TGF β receptors." Weinstein Cardiovascular Development Conference, Nashville, TN, May 1998
- "Characterization of chick Type I TGF β receptors." Department of Pharmacology Retreat, Vanderbilt University, Nashville, TN, October 3, 1997
- "Characterization of chick Type I TGF β receptors." Weinstein Cardiovascular Development Conference, Cincinnati, OH, June 6, 1997
- "Transcriptional regulation of the rat angiotensin II type 1A receptor." Division of Cardiology, Vanderbilt University, Nashville, TN, July 15, 1996
- "Transcriptional regulation of the rat angiotensin II type 1A receptor." Ph.D. Defense, Department of Physiology & Biophysics, University of Alabama at Birmingham, Birmingham, AL, July 11, 1996
- "Analysis of the rat type 1A angiotensin II receptor promoter." Experimental Biology '95, Atlanta, GA, April 11, 1995
- "Transcriptional regulation of the rat type 1A angiotensin II receptor." Sigma Xi Graduate Student Research Day, University of Alabama at Birmingham, Birmingham, AL, April 21, 1994
- "Expression of protein kinase C isoforms during differentiation of PC12 cells." Regional Meeting of the Alabama Academy of Science, Mobile, AL, February, 1990
- "Isolation of the nuclear matrix from rabbit uterus." Department of Physiology, St. Louis University School of Medicine, St. Louis, MO, July, 1989

RESEARCH EXPERIENCE

- 1996-1998 Postdoctoral Fellow, Division of Cardiology, Vanderbilt University, Nashville, TN
Mentor: Joey V. Barnett, Ph.D.
- Analyzed chick Type I Transforming Growth Factor β Receptor cDNAs using radioligand binding and luciferase assays
 - Characterized polyclonal antibodies generated against chick Type I Transforming Growth Factor β Receptors by immunoprecipitation and Western analysis
- 1990-1996 Predoctoral Fellow, University of Alabama at Birmingham, Birmingham, AL
Advisor: Terry S. Elton, Ph.D.
Co-Advisor: Mark E. Steinhilber, Ph.D.
Dissertation Title: Transcriptional Regulation of the Rat Angiotensin II Type 1A Receptor

- Investigated the promoter region of the rat Angiotensin II Type 1A Receptor in vascular smooth muscle cells using luciferase reporter gene constructs
 - Demonstrated formation of specific protein-DNA complexes with electrophoretic mobility shift assays
 - Used site-directed mutagenesis to confirm the functional importance of an A/T-rich sequence for gene expression in vascular smooth muscle cells
- 1989-1990 Senior Research Project, Department of Zoology-Wildlife Science,
Auburn University, AL
Advisor: Marie W. Wooten, Ph.D.
- Investigated expression of protein kinase C isoforms during cellular differentiation using molecular techniques
- Summer 1989 Physiology Research Undergraduate Fellowship, St. Louis
University of Medicine, St. Louis, MO
Advisor: Mary Ruh, Ph.D.
- Isolated and characterized nuclear matrix from rabbit uterus using cellular and molecular techniques

PRE-DOCTORAL TEACHING EXPERIENCE

- 1995-1996 Tutor, Medical Physiology, University of Alabama at Birmingham,
Birmingham, AL
- Presented information on lecture topics and led discussion groups
 - Tutored small groups and individuals
- 1993, 1995 Laboratory Assistant for Medical Physiology, University of
Alabama at Birmingham, Birmingham, AL
- Assisted students with equipment operation for cardiovascular and respiratory labs
 - Assisted students with problem-solving in small discussion groups
- 1988-1990 Physiology Laboratory Teaching Assistant, Auburn University, AL
Advisor: Lawrence C. Wit, Ph.D.
- Gave pre-lab lectures and assisted students with laboratory exercises
 - Graded student laboratory reports

PRE/POSTDOCTORAL AWARDS

- NRSA Postdoctoral Fellowship, NIH, National Heart, Lung, and Blood Institute, awarded March 1999
- American Heart Association Southeast Affiliate Postdoctoral Fellowship, awarded May 1998
- Postdoctoral Research Fellow, The Research Training Program in Hypertension (NIH), Vanderbilt University, 1996-1998

- Predoctoral Research Fellow, Department of Physiology & Biophysics, University of Alabama at Birmingham, 1990-1996
- Sigma Xi Graduate Research Day, Second Place, University of Alabama at Birmingham, 1994
- President's Award for the Outstanding Graduate, College of Sciences and Mathematics, Auburn University, 1990
- L.M. Ware Outstanding Senior Award, Phi Kappa Phi, Auburn University, 1990