

TERESA C. BALSER

FACULTY OF SCIENCE

University of Calgary

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SUMMARY OF QUALIFICATIONS

- Experienced administrator with strong research and teaching background and nearly fifteen years in senior and executive leadership. Emphasis on new program development and climate/cultural change at campus and college levels. Innovative approaches to management, faculty development, research, and curriculum. Principal Fellow of the U.K. Higher Education Academy.
- Broad international experience in research and education. Appointments in Canada and Australia, and collaborator with UNESCO Higher Education, Asia Pacific Region. Named John Curtin Distinguished Professor and U.S. Fulbright-Nehru Distinguished Chair to India. Visiting research scholar in Japan and Switzerland. Invited in 2014 by Kingdom of Saudi Arabia to train women university administrators. Appointed to Australian Research Council College of Experts.
- Interdisciplinary, international research program in environmental science and ecosystem ecology. U.S. National Science Foundation Early Career Award winner, with funding from NSF Division of Environmental Biology and Ecosystems, U.S. Dept. of Energy, and Andrew Mellon Foundation. More than 80 articles and invited book chapters published, more than 50 invited seminars and presentations to date. Successfully supervised 8 M.S., 4 Ph.D., and 10 postdoctoral researchers.
- Internationally known educator and innovator. Incorporation of active learning, innovative curriculum design, and scholarship of teaching to advance educational goals. Experience with wide range of teaching activities including small and large classes, public outreach, university extension, and professional development workshops. Awards include: WI Teaching Fellow and National Biology Scholar, 2009 USDA National Excellence in College and University Teaching Award, 2010 U.S. Professor of the Year (Carnegie Foundation for the Advancement of Teaching – Doctoral Universities), Robert Foster Cherry Award Finalist, 2015. Also, co-founder of the Society for Advancement of Biology Education Research (SABER), and national HHMI/NSF/NIH Vision and Change Leadership Fellow. Regularly invited speaker/workshop leader for education and change.
- Specific training in leadership development, coaching and facilitation. Appointed as Academic Advisor to Office of Human Resources at Curtin University, and Faculty Associate with UW-Madison Office of Human Resource Development. Invited to be Leadership Development Coordinator for American Societies of Soils, Crops, Agronomy. Have been a CIC Academic Leadership Program Fellow, Joseph F. Kauffman Administrative Development program participant, and APLU/USDA Food Systems Leadership Institute (FSLI) Fellow. Certificate holder in Integral Facilitation and member of the International Coaching Federation.

EDUCATION

Postdoctoral Research, Ecosystem Ecology, Stanford University , Stanford, CA	2001
Ph.D. Soil Science (Microbiology), University of California-Berkeley , Berkeley CA	2000
A.B. Biology, Dartmouth College , Hanover, NH (cum laude)	1992
A.B. Earth Sciences, Dartmouth College , Hanover, NH (cum laude)	1992

POSITIONS HELD

University of Calgary, Calgary, Alberta

2021-present	Professor , Faculty of Science/Biological Sciences
2023-2024	Research Fellow , School of Public Policy
2021-2022	Provost and Vice-President (Academic)

Dalhousie University, Halifax, Nova Scotia

2021-present	Adjunct Professor , Faculty of Agriculture and Faculty of Health
2018-2021	Professor , Faculty of Agriculture, Plant, Food and Environmental Sciences
2019 (6 mo)	President and Vice Chancellor (Interim)
2018-2020	Provost and Vice-President Academic

Curtin University, Perth, Western Australia

2016-2018	University Associate , Advisor to Director of People and Culture (HR)
2015-2018	Professor and Dean of Teaching and Learning , Faculty of Science and Engineering

University of Florida, Gainesville, Florida

2011-2015	Professor and Dean , College of Agricultural and Life Sciences, University of Florida
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University of Wisconsin, Madison, Wisconsin

2008-2011	Director , Institute for Biology Education
2007-2011	Associate Professor , Department of Soil Science
2007-2011	Faculty Associate in Human Resource Development , Office of Human Res. Dev.
2006-2011	Faculty Affiliate , Women's Studies Department
2005	Visiting Research Scholar , Center for Ecological Research, Kyoto University, Japan
2004-2010	Doctoral Trainer , Microbiology Doctoral Training Program
2001-2011	Faculty Affiliate , Molecular and Environmental Toxicology
2001-2011	Faculty Affiliate , Gaylord Nelson Institute for Environmental Studies
2001-2007	Assistant Professor , Department of Soil Science

Stanford University, Stanford, California

2000-2001	Visiting Scholar , Institute für Umweltwissenschaften, Zürich Switzerland
2000-2001	Postdoctoral Scholar , Stanford University

HONORS AND AWARDS

National/International Honors

Principal Fellow, U.K. Higher Education Academy. Named on Oct 30, 2018.

John Curtin Distinguished Professorship, Curtin University. Named on 6 December, 2017.

Fulbright-Nehru Distinguished Chair, India. Appointed by Fulbright Commission in 2015. Project:
Building capacity for a pedagogically advanced and socially responsive life sciences curriculum

Finalist, Robert Foster Cherry Award for Great Teaching, Baylor University, Waco Texas. (2015)
(www.baylor.edu/mediacommunications/news.php?action=story&story=153413)

National Vision and Change Fellow, Partnership for Life Sciences Education. National Science Foundation, Howard Hughes Medical Institute, National Institutes of Health (2012)

U.S. Professor of the Year, Doctoral and Research Universities. Carnegie Foundation for the Advancement of Teaching and CASE (2010)
(https://www.youtube.com/watch?v=4rU3oiEENyl&list=PLFz9s_ZX3Vk-7pAQX-X9FU7m3TMH8OcA&index=5)

U.S. National Excellence in College and University Teaching Award, USDA and Association of Public and Land Grant Universities (2009)

U.S. National Biology Teaching Scholar, American Society for Microbiology (2008)

U.S. National Science Foundation Early CAREER Award Recipient, Environmental Biology (2006)

Professional Recognition

Invited to Flanders (EU) Expert Review Council (2024-2027)

Invited to Australian Research Council College of Experts (2018-2020)

Accepted into the Curtin Academy for Leadership in Teaching and Learning (2016)

U.S. Fulbright-Nehru Distinguished Chair (2015)

Fellow, Soil Science Society of America (2013)

Honorary membership, Alpha Zeta Coed Honor Fraternity (2012)

Honorary membership, Sigma Alpha Sorority (2012)

Promoted to Full Member, Sigma Xi Scientific Honor Society (2007)

Elected to University of Wisconsin-Madison Teaching Academy (2007)

Univ. of WI System, Office of Professional and Instructional Development Teaching Fellow (2007)

Visiting Research Fellowship, Center for Ecological Research, Kyoto University, Japan (2005)

Kearney Foundation for Soil Science Research, Postdoctoral Scholar, U.C. Berkeley, CA (1999-00)

Graduate and Undergraduate Recognition

Distinguished Teaching Award, U.C. Berkeley, CA (1997)

Founder Region Fellowship, Soroptomist International, U.C. Berkeley, CA (1997)

NASA Graduate Student Researcher Fellowship, U.C. Berkeley, CA (1994-1997)

James P. Bennett Graduate Fellowship, U.C. Berkeley, CA (199-1993)

University of California Regents Fellowship, U.C. Berkeley, CA (1992-1993)

John J. Ebers Award, for excellence in Earth Sciences, Dartmouth College, Hanover, NH (1992)

Upham Geology Prize for honors thesis research, Honorable Mention (1992)

Rufus Choate Scholar (top 10% of graduating class), Dartmouth College, Hanover, NH (1992)

Elected to Sigma Xi Scientific Honor Society (1991)

PROFESSIONAL SERVICE/LEADERSHIP

Professional Service/Leadership (Regional/National Committee Service)

- 2025-present Member, Board of Directors, University of Calgary Faculty Association (TUCFA)
- 2024-present Member, Advisory Council, Association for the Advancement of Sustainability in Higher Education (AASHE)
- 2024-present Co-Chair, Sustainability Interest Group, Global Council for Science and the Environment (GCSE)
- 2023-present Co-founder, Sustainability Education Accreditation Council (SEAC)
- 2022-present Member, Society for the Advancement of Biology Education Research (SABER) Diversity, Equity, and Inclusion Committee
- 2022 Co-Chair, Alberta Council of Senior Academic Officers (ACOSAO)
- 2018-2020 Provost representative, U15 Data Exchange Group.
- 2018-2020 Member, Australian Research Council College of Experts.
- 2014-2016 Member, American Institute for Biological Sciences (AIBS) Advisory Board and Chair of the Education committee.
- 2011- 2016 Member, American Institute for Biological Sciences (AIBS) Education Committee.
- 2012-2015 National Vision and Change Leadership Fellow, and founding member of U.S. Partnership for Undergraduate Life Science Education (PULSE) (<https://pulse-community.org>)
- 2010 Co-founder, Society for the Advancement of Biology Education Research (SABER) (<https://saberbio.wildapricot.org>)
- 2009-2010 NCERA 59 Regional Committee on Soil Organic Matter, President
- 2008-2009 NCERA 59 Regional Committee on Soil Organic Matter, Vice-president
- 2004-2011 NCERA 59, Regional Committee on Soil Organic Matter and Quality
- 2007-2013 Leadership Development Coordinator, American Society of Agronomy
- 2007-2008 American Society of Agronomy Education Task Force
- 2005-2008 UW System Women and Science Advisory Board

University Service/Leadership

- 2024-present Member, Diversity and Equity Committee, University of Calgary Faculty of Science Department of Biological Sciences
- 2023-2024 Member, University of Calgary School of Public Policy Equity, Diversity and Inclusion/Indigenous Engagement Committee
- 2021-2022 Vice-Chair, University of Calgary General Faculties Council
- 2017-2019 Chair, Dalhousie University Budget Advisory Committee
- 2017-2019 Chair, Curtin Academy Executive Committee
- 2011-2015 Member, University of Florida Office of Postdoctoral Affairs Advisory Board
- 2011-2015 Member, HHMI Science for Life Executive Committee
- 2011-2013 Chair, Task force for planning year-long celebration of University of Florida as Florida's Land Grant (for the 150th signing of the Morrill Act)
- 2011-2012 Member, Wisconsin Academy of Sciences, Arts, and Letters

- 2010-2011 Member, Wisconsin Institutes for Discovery Town Center Advisory Board
- 2009-2011 Member, Council of the BioDeans, UW-Madison
- 2008-2011 Member, Council of Associate Deans, UW-Madison
- 2010-2011 Member, Center for the First Year Experience Advisory Board, UW-Madison
- 2007-2011 Member, NSF Center for the Integration of Research, Teaching, and Learning (CIRTL) Delta Program, Steering Committee, UW-Madison
- 2008-2009 Chair, CALS Council on Teaching and Learning, College of Agricultural and Life Sciences, UW-Madison
- 2007-2010 Member, Teaching Academy Executive Committee, UW-Madison
- 2007-2009 Co-Chair, UW Reaccreditation Theme #5 Self Study (Building a Welcoming, Inclusive UW-Madison), UW-Madison
- 2007-2009 Member, Reaccreditation Steering Committee, UW-Madison
- 2007-2008 Member, CALS Council on Teaching and Learning, College of Agricultural and Life Sciences, UW-Madison
- 2006-2007 Chair, Task Force on Effort Reporting, Research and Sponsored Programs, Madison
- 2005-2007 Founding Member, Agroecology M.S. Program Executive Committee, UW-Madison

Curriculum/program review

- 2018-2020 Involvement / oversight in regular program and faculty reviews, as well as program accreditation, University of Calgary
- 2018-2020 Involvement / oversight in regular program and faculty reviews, and program accreditation, Dalhousie University
- 2015-2018 Regular degree program reviews and support for accreditation, Faculty of Science and Engineering, Curtin University
- 2011-15 Regular departmental and unit reviews, College of Agricultural and Life Sciences, UF
- 2009-10 Geoscience Department review, College of Letters and Science, UW-Madison.
- 2006-08 Applied Masters in Environmental Studies program curriculum development committee, Gaylord Nelson Institute for Environmental Studies, UW-Madison.
- 2006-08 Graduate program core curriculum development committee, Gaylord Nelson Institute for Environmental Studies, UW-Madison.
- 2004-05 Water Resources Management curriculum review committee, Gaylord Nelson Institute for Environmental Studies, UW-Madison.
- 2003 Site visit and curriculum review of Masters Degree program in Environmental Studies at the United Arab Emirates National University, Al Ain campus.
- 1993-96 Graduate Programs Cmte, designed and wrote proposal for graduate student programs. Dept of Environmental Science, Policy and Management (ESPM), U.C. Berkeley, CA.

Search and Standing Committee Service

- 2023 Member, search committee for Assistant Professor in Water Security, University of Calgary Faculty of Science and School of Public Policy
- 2023 Member, search committee for Assistant Professor in Critical Minerals, University of Calgary Faculty of Science and School of Public Policy

2022	Chair, review for renewal of University of Calgary Deans of Nursing, and Architecture, Planning and Landscape
2022	Chaired searches for University of Calgary Deans of Medicine, Arts and Kinesiology.
2022	Chaired search for University of Calgary Director, School of Public Policy.
2022	Chaired search for University of Calgary Vice-provost Student Experience.
2019	Chaired search for Dalhousie University Associate Vice-President Academic.
2018	Chaired review committee for Dalhousie University Dean Graduate Studies.
2018	Chaired search for Dalhousie University Vice-Provost, Equity and Inclusion.
2018	Chaired searches for Dalhousie University Deans of Health Sciences, Management, and Continuing Education.
2017	Faculty of Science and Engineering, Science and Engineering Curriculum Leads selection panel, Curtin University
2017	Faculty of Science and Engineering, Medical Radiation Sciences selection panel, Curtin
2016	Faculty of Science and Engineering Faculty HR Business Partner selection panel, Curtin
2012	IFAS Quantitative Sciences Cluster Search Committee, University of Florida
2011-12	Vice President for Student Affairs, Search and Screen Committee, University of Florida
2011-12	IFAS Dean for Extension, Search and Screen Committee, University of Florida.
2007-10	Graduate School Research Committee, Physical Sciences Division, UW-Madison.
2007-08	Nelson Institute Director Search and Screen Committee, UW-Madison.
2005-08	UW Committee on Women in the University, UW-Madison.
2001-06	Faculty Merit Procedures Committee, Dept. of Soil Science, UW-Madison.
2001-04	Teaching Practicum Committee, Dept. of Soil Science, UW-Madison.

EDUCATIONAL AND LEADERSHIP PRESENTATIONS AND WORKSHOPS

Regularly invited speaker and workshop leader for leadership and education. Leadership topics include conflict management, new models of leadership, developing as a leader, women's leadership. Educational topics include future of teaching, role of teachers in post-modern learning, going beyond learning outcomes, teacher development, activating learning, fear and learning, and motivation. Have delivered approximately 70 talks and workshops in the past 10 years. In addition, as a Fulbright-Nehru Distinguished Chair to India in 2015 I delivered 30+ talks and workshops around the country, for 100+ contact hours, and with approximately 1500 participants. Full list with descriptions of workshops is available on request.

“University Budgets and Finances” Module 8, Executive Leadership Development Program, International Association of Universities 2024-2025 cohort, Online, 7 July 2025.

“Charting a Sustainable Future for Higher Education” Module 2, Executive Leadership Development Program, International Association of Universities 2024-2025 cohort, Tokyo, Japan, 25 November 2024.

“Charting a Sustainable Future for Higher Education” Module 9, Executive Leadership Development Program, International Association of Universities 2023-2024 (inaugural) cohort, Tokyo, Japan, 24 November 2024.

- “Best Practices for Sustainability & Sustainability-Related Degree Programs: How and why higher education has to change” Invited workshop for Inaugural conference, U.S. National Sustainability Society 2024, Seattle WA, 09 September 2024. ~35 in attendance.
- “University Budgets and Finances” Module 5, Executive Leadership Development Program, International Association of Universities 2023-2024 (inaugural) cohort, Online, 27 March 2024.
- “Mainstreaming sustainability education in higher education institutions: challenges and options for progress” Invited webinar and panelist for OECD International Online Knowledge Exchange, 11 January 2024. ~300 in attendance.
- “Making your case: Career planning and advancement” Invited webinar for the Ecological Society of America Career Services, 24 October 2023. ~41 in attendance.
- “Encountering complexity through game-based learning” Contributed workshop for the Ecological Society of America Annual Conference, Portland Oregon, 10 August 2023. ~15 in attendance.
- “Making your case: Career planning and advancement” Contributed workshop for the Ecological Society of America Annual Conference, Portland Oregon, 7 August 2023. ~65 in attendance.
- “Examining the Micro-Structures of Higher Education Systems” Invited Module for Introduction to Change Leadership in Higher Education Teaching and Learning, offered by the U.S. National Center for the Integration of Research, Teaching, and Learning (CIRTL). 6 July 2023. ~30 enrolled.
- “Examining the Macro-Structures of Higher Education Systems” Invited Module for Introduction to Change Leadership in Higher Education Teaching and Learning, offered by the U.S. National Center for the Integration of Research, Teaching, and Learning (CIRTL). 29 June 2023. ~30.
- “The N Cycle as a learning challenge: Can we use a game to improve student understanding and increase interest?” Contributed presentation for Canadian Society of Soil Science Annual Meeting, Nova Scotia, 28 June 2023 ~40 in attendance
- “Beyond outreach: re-imagining our contribution to social good” Invited speaker (in-person), Dalhousie University Faculty of Agriculture Speaker Series. 7 December, 2022. ~30 in attendance
- “Skills, competencies and knowledge for unwritten futures” Invited panelist (in-person), *International Association of Universities (IAU) 16th General Conference*, Dublin, Ireland, 27 October, 2022. ~75 in attendance
- “Governance requirements for implementing decarbonization: Challenges and opportunities” Invited panelist (virtual), *Times Higher Education (THE) Impact Forum oriented on SDG 11: Sustainable Cities*, London, United Kingdom. 15 September, 2022.
- “Leadership for a Shared Future: Harnessing our Collective Brilliance” Invited keynote presenter (virtual), Xiamen University Symposium, *The University Promoting the Development of a Community of a Shared Future for Mankind*, Xiamen, China. 6 April, 2021.
- “Multidisciplinary education: Removing barriers and creating change.” Invited webinar presenter, Era University School of Liberal Arts and Sciences, Lucknow, India. 28 Jan, 2021. ~60 in attendance.
- “Online teaching? Keep it simple.” Invited webinar presenter, Dalhousie Agricultural Campus, 12 June, 2020. ~35 in attendance.
- “Active learning takes active teaching – reducing resistance by managing risk?” Invited keynote speaker, Dalhousie Conference on Teaching and Learning, 2 May, 2019. ~300 in attendance.
- “Getting Beyond Content: Mindsets and Skillsets” Invited concurrent session speaker, Excellence in Education and Training Convention 2018, “Pedagogy and Innovation,” Singapore Polytechnical University. 13 September, 2018. Singapore, Singapore. ~100 in attendance.

- “Changes and Challenges in Higher Education” Invited opening keynote speaker, Excellence in Education and Training Convention 2018, “Pedagogy and Innovation,” Singapore Polytechnical University. 13 September, 2018. Singapore, Singapore. ~500 in attendance.
- “Beyond Content: Teaching in a Post-modern World” Invited workshop facilitator, Excellence in Education and Training Convention 2018, “Pedagogy and Innovation,” Singapore Polytechnical University. 12 September, 2018. Singapore, Singapore. ~20 in attendance.
- “New learning pathways for access and skill development” Invited session panelist, UNESCO Asia-Pacific Meeting on Education 2030, 12-13 July 2018. Bangkok, Thailand. ~250 in attendance.
- “The future of teaching: can learning be designed?” Invited opening keynote speaker, The 14th International CDIO Conference (Engineering Education), 28 June-1 July 2018. Kanazawa, Japan. ~300 in attendance.
- “The changing role of university: higher education and the need for lifelong learning” Invited opening keynote speaker, Philippine Association of Engineering Schools, 2017 International Conference on Engineering Education, 26-27 October 2017. Manila, Philippines. ~100 in attendance.
- “Teaching for life-long learning.” Invited all-day workshop presenter, 2nd Engineering and STEM-Teaching and Learning Seminar Series, 24-25 October 2017. University of Santo Thomas, Manila Philippines. ~80 in attendance.
- “Global Engagement or Globalization? Student and teacher experience in transnational higher education.” Invited speaker, Universities and Their Global Engagement Strategies; International Conference for Universities in the Mediterranean Region. 14-16 Oct 2017, N Cyprus, Turkey.
- “Teaching for the 4th Industrial Revolution?” Invited panelist and speaker for UNESCO Regional Annual Policy Seminar. ~40 in attendance from 13 countries. 28-29 September, Bangkok, Thailand.
- “Beyond hype – Innovation for the rest of us” Invited speaker for Clariden Global Conference on Digital and Blended Learning Innovation. 100 in attendance. 19 July 2017, Melbourne, Australia.
- “From Teaching to Learning.” Invited Opening Keynote for UNESCO Regional Conference on Quality Assurance in Higher Education. Shenzhen, China. Two-day conference with 100+ delegates from 60 member states of UNESCO. 15 June 2017.
- “Escaping the Echo Chamber: Environmental Education for a Post-Fact World.” Invited seminar for the UMN Institute on the Environment’s 10 year anniversary seminar series. 50 in attendance. 22 April 2017. Minneapolis/St. Paul, MN.
(<https://www.youtube.com/watch?v=dsfl6H6jvk4&app=desktop>)
- “Beyond Bloom’s: developing caring, competent, credible professionals.” Invited opening address for annual Association of Education in Medical Radiation Science meeting. 20 in attendance. 27 March 2017. Perth, Western Australia.
- “Beyond hype – Innovation for the rest of us.” Invited Keynote speaker for annual Western Australia Teaching and Learning Forum. 250 in attendance. 3 February 2017, Perth, Western Australia.
- “Are Teachers Still Necessary? Intangibles, Unmeasurables, and Other Complex things.” University of Macau, Invited Symposium Plenary: Measuring the Unmeasurable in student learning. 100 attendees. 16 June, 2016, Macau, China.
- “Moving the STEM Needle.” Invited panelist and speaker, FutureProof Conference, Sydney Australia. 70 in attendance, 27 May 2016.
- “Education for a Global World.” Invited all-day presenter: Delivered three workshops and a keynote. University of California-Davis. 74 in attendance in total, 11 April 2016.
- “Living from the inside out: new norms for a global world.” International Women’s Day Breakfast invited speaker – Curtin University. ~100 in attendance. 11 March 2016.

- “Teaching for learning in a Global World.” John Curtin Corner invited speaker. 40 in attendance. Curtin University 13 May 2016
- “Building Capacity for a Pedagogically Advanced and Socially Responsive Undergraduate Curriculum.” Invited speaker, School of Biological Sciences, Indian Institute for Technology-Delhi. 55 in attendance. 21 December 2015
- “Beyond the Buzz: Actually Activating Learning.” Invited seminar, 9 September, 2015. University of Macau, Center for Teaching and Learning, Macau, China.
- “Conflict! (Learn to love it, or at least live with it)” Workshop for Postdoctoral Fellows Symposium, April 30, 2015. University of Florida, Gainesville, FL.
- “Owning and Leveraging Your Strengths (Or: How to work with anyone)” Workshop for Postdoctoral Fellows Symposium, April 29, 2015. University of Florida, Gainesville, FL.
- “Creating an ecologically literate and globally engaged citizenry: Is it time to embrace a new educational paradigm?” Burack Distinguished Lecturer, University of Vermont. April 21, 2015, Burlington, VT.
- “Embedding the sustainability learning outcomes across the curriculum.” Workshop for Sustainability Teaching Fellows, University of Vermont. April 20, 2015, Burlington, VT.
- “Beyond Content: Teaching as if learning mattered.” Half-day workshop for Engineering Faculty, University of Florida. April 6, 2015, Gainesville, FL.
- “Education at the crossroads – Teaching as if Learning Mattered.” Invited keynote speaker, University of Minnesota College of Veterinary Medicine Education Day. May 30, 2014, Minneapolis, MN.
- “Education at the crossroads – Teaching as if Learning Mattered.” Invited plenary speaker, Human Anatomy & Physiology Society (HAPS) Annual conference. May 25, 2014, Jacksonville, FL.
- “Here be dragons: Charting our way forward into the new world.” Invited seminar speaker, University of Florida McGuire Center. March 25, 2014, Gainesville, FL.
- “Leading the way forward – the changing nature of academic leadership.” Invited presenter and Summit Convener, American Institute for Biological Sciences. March 11-13, 2014, HHMI, MD.
- “Teaching as if Learning Mattered.” Invited keynote speaker, National Learning with Cases Conference. Buffalo, NY, September 20, 2013.
- “Activating learning in the classroom.” Invited workshop leader, National Learning with Cases Conference. Buffalo, NY, September 20, 2013.
- “Can learning be fun?” Invited speaker, College of Agricultural and Life Sciences Teaching Mini-symposium. Gainesville, FL, March 19, 2013.
- “Can learning the nitrogen cycle be fun?” Invited speaker and workshop leader, IGERT graduate seminar. Washington State University, Pullman, WA. March 8, 2013.
- “Can learning science be fun?” Graduate student invited speaker and workshop leader, Department of Crop and Soil Sciences, Cornell University. Ithaca, NY. February 7, 2013.
- “Making the decision to move into administration: smart women making smart choices.” Invited speaker, University of Wisconsin Women in Science Leadership Series. Madison, WI. 10/23/12.
- “The NGame – Can learning the nitrogen cycle be fun?” Invited speaker, Soil and Water Science Seminar. Gainesville, FL, October 8, 2012.
- “Creating a Learner-Centered Classroom.” Invited mini-course instructor, University of Florida Prairie Project Fellows. March/April 2012, 3 sessions.
- “Teaching as if learning mattered.” Invited speaker, Association of Public and Land Grant Universities National Academic Programs Summit. Loveland, CO. June 18, 2012.

- “Active Learning in Biology Education.” Invited workshop presenter, first annual Indian Biology Education Summit. Pune, India. January 11-14, 2012.
- “The future of teaching.” Invited seminar, Birla Science Center. Hyderabad, India. January 7, 2012.
- “Teaching as if learning mattered.” Invited keynote, American Society for Microbiology Conference on Undergraduate Education. Johns Hopkins University, Baltimore, MD. June 2, 2011.
- “Whither the Land Grant? Educating global citizens in an accelerating world.” Invited plenary, University of Maryland Innovations in Teaching conference. University of Maryland, College Park. April 29, 2011, College Park, MD.
- “Teaching as if Learning Mattered.” Invited plenary, Georgia Tech, Center for the Enhancement of Teaching and Learning, Celebrating Teaching Day. March 17, 2011, Atlanta, GA.
- “Challenges and Changes in Introductory Biology Education.” Invited speaker, Iowa State University, Evolution and Organismal Biology Department. January 13, 2011, Ames, IA.
- “Graduate education at the crossroads: inviting engagement from students in STEM disciplines.” Invited speaker, U.C. Berkeley Department of Integrated Biology. May 21, 2010, Berkeley, CA.
- “The role of risk in college teaching.” Invited closing plenary speaker, UW-Madison Teaching Academy Summer Institute. May 27, 2010, Madison, WI.
- “Here be dragons: Building bridges and lowering barriers to learning in the college classroom.” Invited closing plenary speaker, UW-Madison Annual Teaching and Learning Symposium. UW-Madison. May 21, 2009, Madison, WI.
- “Managing People, Building Teams.” Invited facilitator and developer, 2-hour workshop for Early Career members of American Societies of Agronomy, Crops and Soil Sciences. Oct. 6, 2008, Houston, TX.
- “Right brain skills in a Left-Brained world.” Developed and delivered 1 hr session in the 20th Annual WI Hunter Conference and 2nd Annual Inspiration from Unusual Sources conference. November 10, 2007, Madison, WI.
- “Making coaching accessible.” Delivered two sessions on managing and coaching to Madison area supervisors, managers and leaders at the Annual Managers and Supervisors Continuing Education Conference. October 6, 2007, Madison, WI.
- “Navigating the Maze: Professional development and strategic career planning.” Facilitator and presenter, 3-hour workshop for Ecological Society of America Annual Meetings, August 5, 2007, San Jose CA.
- “Lose the Podium – discussion series.” Facilitator and developer, 3 session series on teaching and learning issues for faculty at UW-Madison. Spring, 2007.
- “Getting Them Engaged: Activating Learning in the Classroom.” Facilitator and presenter, NSF-CIRTL’s Delta Program Roundtable Dinner invited speaker. (60 faculty and students in attendance), March 7, 2007. UW-Madison, Madison, WI.
- “Balancing Teaching, Research and Service.” Invited Panelist, UW-Madison New Faculty Programs panel and discussion. February 13, 2007, Madison, WI.
- “Building Your Leadership Toolbox.” Developed and presented 3-hour workshop for K-12 Administrators attending WI Early Childhood Educator conference, Launching into Literacy. January 21, 2007, Madison, WI.
- “Creating a teaching culture.” Co-facilitator, UW-Madison College of Agriculture and Life Sciences Instruction Improvement Committee Brown Bag Series. December 8 2005, Madison, WI.

ACADEMIC ACTIVITIES

Publications

Summary

- More than 85 peer-reviewed journal articles published or in review to date (as of Sept 14, 2025: h index = 49, i10 index = 75, 11354 citations)
- Four articles on leadership and graduate education published (one peer reviewed)
- Five invited book chapters
- Two invited forewords
- One book proposal accepted and contracted (University of Toronto Press)
- Significant contributor to two introductory environmental studies books with W.H. Freeman, “Environmental Science for Citizens” and “Environmental Science: Concepts and Implications”

Textbooks authored or contributed

2012 Environmental science for Citizens, 1e. W.H. Freeman, New York, NY. Introductory textbook for first year and general environmental studies courses. Lead consultant, 2010-2011.

2011 Friedland, A.J., et al. 2011. Environmental Science: Concepts and Implications, 1e. Introductory Environmental Science textbook for Advanced Placement High School courses. Contracted as Academic Editor, W.H. Freeman and Company

Invited Books, Book Chapters and Forewords

Balser, T.C., 202x (Under contract, in progress) **Reimagining Higher Ed for a Post-collapse Future**. University of Toronto Press

Balser, T.C., 2025. **University leadership that enables sustainability education and scholarship**. In Section 9, *Handbook of Sustainability Education and Thinking in the 21st Century*. Taylor and Francis, Perth WA, Australia <https://doi.org/10.4324/9781003171577-64>

Balser, T.C., 2023. Invited Foreword in Postiglione, G.A., C. Johnstone, & W. Teter, *Handbook of Education Policy*, Elgar Handbooks in Education. ISBN: 978 1 80037 505 5. 400 pp

Balser, T.C., 2021. Invited Foreword in G. Hansen, & J. Macedo, *Urban Ecology for Citizens and Planners*. University of Florida Press.

Balser, T.C., et al., 2010. Chapter 2, The Microbiology of Natural Soils. In Soil Microbiology and Sustainable Crop Production, G.R. Dixon and E. Tilston, Eds. Springer Science + Business Media B.V., Dordrecht, The Netherlands.

Balser, T.C., et al., 2010. Chapter 10, Will Climate Change Alter Soil Microbial Constitution? In Soil Microbiology and Sustainable Crop Production, G.R. Dixon and E. Tilston, Eds. Springer Science + Business Media B.V., Dordrecht, The Netherlands.

Balser, T.C. 2005. Microbial Role in Humification, p. 195-207, In D. Hillel, et al., eds. *Encyclopedia of Soils in the Environment*, Vol. 2. Elsevier, Oxford UK.

Balser, T. C., A. Kinzig and M. K. Firestone. 2002. Linking soil microbial communities and ecosystem functioning. Chapter 12 in A. Kinzig, S. Pacala and D. Tilman, eds. *The Functional Consequences of Biodiversity: Empirical Progress and Theoretical Extensions*. Princeton University Press, Princeton.

Published journal articles

86. Balser, T., J. Macedo, 2025. Beyond sustainable — education for a regenerative future. International Association of Universities, Horizons. June/July, 2025 issue
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Fatty-Acid and Fatty-Acid Methyl Ester Analyses. PLoS ONE 10(4): e0121697.
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Non-technical articles

- Balser, T. 2014. New Leadership Paradigm? *BioScience*, 64: 1065-1066.
- Bigham, D., J. Collins, T. Balser, 2013. The Nitrogen Game: Successfully Bridging the Gap Between Educational Learning and Fun. *Lakeline*, Summer 2013, pp. 33-35.
- Balser, T. 2007. Academy's Middle Child: Professional development needs of graduate students in the agricultural sciences. *Crop, Soils, Agronomy News* V52, N09, pp. 26-28.
- Balser, T. 2007. The Changing Nature of Leadership. *Crop, Soils, Agronomy News* V52, N11, pp. 36-38.
- Balser, T. 2007. Leveraging Diversity, Managing Change. *Crop, Soils, Agronomy News* V53, pp.30-32.

Grants and Funding

Between 2001-present, approximately \$4.4 million (USD) awarded as PI or Co-PI for basic research in soil and microbial ecology. And approximately \$2.5 million (USD, AUD, CDN) awarded to date for instructional improvement or teaching research. Funding obtained from the National Science Foundation (including 2006 NSF Early Career Award), U.S. Department of Agriculture, U.S. Department of Energy, the University of Wisconsin Alumni Research Foundation, and the Howard Hughes Medical Institute.

Basic Science Research and Workshop grants (~\$4.5 million to date as PI or Co-PI)

- 2024-2025 "Leading in the face of collapse: Building innovation capacity for sustainable urban futures." (Lead PI, with Drs. J. Macedo and M. Leslie) Transdisciplinary Connector Grant, UCalgary, Canada, \$17,000 CDN.
- 2022-2025 "Learning with the Land and Understanding the Soil Toward Refugee Integration and Diversity." (Collaborator, PI is Miwa Takeuchi, Werklund School of Education, University of Calgary.) Social Sciences and Humanities Research Council, Canada, \$200,000 CDN.

- 2011-13 “RUI: The Paradox of Excess Nitrogen in Bogs of Western Canada: Interactive Effects of C, N and Fire Along a Chronosequence” With Kelman Wieder, Villanova PA. NSF DEB Ecosystems, \$441,700 USD
- 2011-13 “Microbial community control over carbon dynamics in a tropical forest successional sequence”. Co-PI with Erika Marin-Spiotta. NSF Life in Transition, \$135,000 USD
- 2009-13 “Soil quality and carbon stabilization in native and invaded Wisconsin wet prairie ecosystems”. USDA CSREES-Hatch, \$189,000 USD
- 2008-13 “Microbial Observatories: Exploring the symbiotic association between tropical social insects and actinomycetes”, Co-PI with Cameron Currie and Matias Cafaro. NSF DEB, Microbial Observatories. \$920,004 USD
- 2008-09 “Belowground carbon dynamics and biodiversity in biofuels cropping systems: ecology and policy implications”, Project leader and Co-PI with Randy Jackson and Claudio Gratton, Thrust 4 (Sustainability), Projects 4.3 and 4.4, Great Lakes Bioenergy Center. U.S. Department of Energy. \$475,608 USD
- 2008-09 “Using phytoremediation to reduce lead exposure in socio-economically disadvantaged neighborhoods: an interdisciplinary social and ecological study”, Co-PI with Janean Dilworth-Bart and David Bart. UW-Madison Fall Research Competition. \$34,000 USD
- 2007-12 “CAREER: Research and education approaches to integrating microbiology and ecosystem functioning in global change ecology”, NSF DEB, Ecosystems. \$595,289 USD
- 2007-10 “The ecological consequences and policy implications of land management choices by WI farmers in a biofuels era”, WI NC-SARE, Pilot study. \$13,000 USD
- 2007-09 “Role of microbial community structure and forest management practices in carbon storage.” USDA-CREES McIntire-Stennis. \$75,000 USD
- 2006-07 “Microscale approaches to macroscale issues in terrestrial ecosystem ecology”, Interdisciplinary workshop, NSF DEB and Microbial Biology, \$77,000 USD
- 2006-08 “Evaluating changes in soil carbon cycling in reed canary grass invaded soils”, U.S. Department of Energy, \$180,000 USD
- 2006-08 “Collaborative research: Landscapes to latrines: effects of spatial and temporal variation in nutrient transport by coastal river otters on terrestrial communities”, with Merav Ben-David (PI), J. Gullledge, N. Nibbelink, and C. Meyers. NSF-Ecosystems, \$688,075 USD
- 2006-09 “Breaking the stranglehold: Reed canary grass and nutrient cycling in WI wetland soils”, with David Bart. USDA CSREES-Hatch, \$90,000 USD
- 2005-07 “Testing controlled environment chambers for NASA”. Subcontract with Orbital Technologies, Inc., Madison, WI. \$25,000 USD
- 2005-07 “Does microbial ecophysiological response to environmental change determine carbon sequestration?” National Science Foundation, Division of Environmental Biology, Ecosystems Program. \$150,000 USD
- 2002-05 “Role of microbial community structure and forest management practices in carbon storage”, with Joel Pedersen. USDA-CREES McIntire-Stennis. \$75,000 USD
- 2002-03 “Studies to elucidate the soil microhabitats, functional diversity, and ecological roles of uncultured bacteria with in the divisions Acidobacterium and Verrucomicrobia”, with R.M. Goodman. National Science Foundation, Division of Environmental Biology, Microbial Ecology program. \$200,000 USD

- 2001-04 “Linking soil microbial communities and ecosystem functioning: structure and function of ammonium oxidizer communities in tropical and temperate ecosystems”, with Sharon J. Hall. Andrew W. Mellon Foundation. \$425,000 USD
- 2001-03 “Microbial community structure and soil carbon cycling in old-growth and managed forests of the southern Lake Superior uplands”. USDA-CREES Hatch. \$39,601 USD
- 1997-98 “Defining soil quality in terms of microbial community structure”, with M.K. Firestone. Kearney Foundation for Soil Science Research. \$40,000 USD
- 1996-97 “The role of microorganisms in soil carbon storage”. National Science Foundation Doctoral Dissertation Improvement Grant, Division of Environmental Biology, Ecological Studies Program. \$10,000 USD

Grants awarded for instructional improvement or teaching research (~\$2.5 million to date)

- 2017-18 “Understanding the relationship between teachers and student learning. (Does teaching experience matter?)” Curtin Innovation Grants, Lead Investigator. ~\$16,100 (AUD)
- 2016-17 “Cross-Nation Capacity Building in Science, Technology, Engineering, Mathematics (STEM) Education” Australian National Commission for UNESCO, Co-PI. \$13,500 (AUD)
- 2016-17 “E4 Design Engagement Model (E4DEM) for students and staff: the adoption of design thinking pedagogy and practice for engagement in learning & teaching.” Curtin Teaching Excellence Funds, Co-PI. ~\$15,000 (AUD)
- 2016-17 “Curtin graduates as digital creators: Computational thinking for twenty-first century employability.” Curtin Teaching Excellence Funds, Co-PI. ~\$15,000 (AUD)
- 2015-16 “Science and Engineering Innovation Teaching Fellows.” Curtin Teaching Excellence Funds, PI. \$19,000 (AUD)
- 2015-16 “Embedding indigenous perspectives in Curtin STEM education.” Higher Education Participation and Partnerships Program, PI. \$90,000 (AUD)
- 2013-15 “Evaluating the PULSE: Assessing the Impacts of the PULSE Program” National Science Foundation EAGER grant, Co-PI. \$150,000 (USD)
- 2010-2013 “Foundations for success in undergraduate biology education” Howard Hughes Medical Institute Institutional Awards for Undergraduate Science Education. PI and Project Director. \$1,400,000 (USD)
- 2010-2011 “Advancing the Field of Undergraduate Biology Education Research” NSF Research Coordination Networks Undergraduate Biology Education Incubator Workshop Grant, Proposal #6923957, Co-PI. \$50,000 (USD)
- 2009-2011 “The N-game: developing a game-based learning experience in environmental studies”, Engage Academic Technology Group, UW-Madison. \$100,000 (USD)
- 2008-11 “Educational partnerships for the bioenergy sustainability thrust”, Great Lakes Bioenergy Center, University of Wisconsin, \$155,000 (USD)
- 2008-09 “Peer Mentoring for Forum on the Environment (ES/SS101)”, UW College of Agricultural and Life Sciences Undergraduate Initiative Funds, \$8,242 (USD)
- 2008-09 “Aligning Essential Learning Outcomes with Students’ Perceptions of Their Own Learning”, UWS Leadership Site Essential Learning Outcomes Grant Program, participation in a UW System-wide program

- 2008-09 “Using technology to enhance student collaboration and increase transparency of group process”, Engage Adaptation Awards, \$1,000 (USD)
- 2006-07 “Multidisciplinary approaches to integrating microbial analysis and ecosystem-scale research”, UW Grad School, \$15,000 (USD)
- 2006-07 “Improving the Soil Science Senior capstone using peer mentoring”, UW College of Agricultural and Life Sciences Undergraduate Initiative Funds, \$13,909 (USD)
- 2005-06 “Revitalizing Environmental Studies 101, Forum on the Environment”, UW College of Agricultural and Life Sciences Undergraduate Initiative Funds, \$12,000 (USD)

Research Presentations

Invited presentations

- From 2000-present gave ~31 invited research presentations locally and at campuses nationally and internationally. Locations include universities and research institutions in Switzerland, Japan, Germany, as well as throughout the United States. Topics included soil and climate change, carbon sequestration, and ecosystem ecology.
- From 2005-present gave 14 invited symposium presentations at professional society conferences including Ecological Society of America, American Society for Microbiology, and Soil Science Society of America. Topics included climate change, carbon sequestration, and ecosystem ecology.

Contributed Research Presentations

- Lead author or co-author on more than 70 contributed research presentations at professional society meetings between 1994 and present. Meetings most often attended included: Soil Science Society of America, Ecological Society of America, International Society for Microbial Ecology, and American Society for Microbiology. Also attend Lilly Conferences for Teaching, and American Association of Colleges and Universities (AAC&U) meetings.

Presentation highlights (full list of invited and volunteered presentations available upon request)

“Campus Sustainability: From Performative to Authentic.” Contributed paper. Association for Collegiate Schools of Planning (ACSP) annual conference, 21 October 2023.

“Towards a new ecology: integrating urbanism and ecosystem services.” Speaker and invited symposium moderator, Intl Society of Ecology (INTECOL) Conference. Beijing, China. August 21-25, 2017.

“The functional consequences of soil microbial community heterogeneity.” Invited plenary speaker at workshop on soil microbiology and carbon sequestration. Leipzig, Germany. Nov 9-11, 2016.

“The role of microbial communities in carbon turnover and sequestration in forests”. Invited keynote speaker, Symposium Session on the Forest Microbiome, International Society of Ecology (INTECOL) Conference, London, UK. August 18-23, 2013.

“Disturbance, legacies, and soil microbial control over ecosystem functioning.” Invited speaker, Department of Crop and Soil Sciences, Cornell University. Ithaca, NY, February 6, 2013.

“Microbial control over carbon cycling.” ESA Invited Special Symposium speaker – Gate-Keepers in a changing world, Ecological Society of America Annual Meeting, Pittsburgh, PA Aug 5-10 2010.

“Do they or don't they? A synthesis of microbial response to environmental change.” Invited Symposium Speaker – Microorganisms and Global Change, Ecological Society of America Annual Meeting, Pittsburgh, PA August 5-10 2010.

“Microbial determinants of soil carbon response to climate warming.” Invited oral presentation, ISSM annual conference, Shizuoka, Japan, November 17-21, 2008.

- "Towards an ecophysiological understanding of microbial communities in soil: Stress responses and climate change." Invited speaker, for Organized Oral Session "Have microbes read the book? Theoretical Ecology for Microbial Communities". Ecological Society of America annual conference, Milwaukee, WI, August 3-8, 2008.
- "Long-term patterns in microbial community response to multiple interacting environmental changes." Invited symposium speaker and colloquium co-convenor "Understanding the Microbiological aspects of global change". American Society for Microbiology annual conference. Boston MA, June 1-5, 2008.
- "Back to Basics: the ecological underpinnings of modern microbial ecology." Invited Panelist for Roundtable session at International Society for Microbial Ecology conference, Vienna Austria, Aug. 20-25, 2005.
- "Microbes, carbon, and climate: a story about changing paradigms and a changing planet." Invited guest speaker, Ecology, Evolution and Organismal Biology Department, Iowa St U, Jan 13, 2011.
- "Microbial communities, soil carbon, and climate change." Invited seminar speaker, Biogeosciences seminar series, Department of Ecology and Evolution, Cornell University, November 6, 2009.
- "Soil microbial communities and global change - stress response and feedbacks to the climate cycle." Invited speaker, Department of Earth and Environmental Sciences Seminar Series, University of Illinois at Chicago, Sept 11 2008.
- "Disturbance, legacies, and soil microbial control over ecosystem functioning." Invited speaker, Queen's University Ecology and Environmental Biology Seminar, Kingston, Ontario, Dec 6, 2007.
- "Microbial communities and ecosystem functioning." Student-invited speaker, Michigan Tech University Forestry and Environmental Science Seminar, Houghton, MI, March 20, 2007.
- "Microbial ecophysiology and ecosystem functioning: The global consequences of being stressed-out." Invited speaker, Kellogg Biological Station, MI October 6, 2006.
- "Does bacterial ecophysiology determine ecosystem response to global change?" Invited speaker, Kenneth Raper Symposium, Madison, WI September 3, 2006.
- "Does microbial ecophysiology control carbon and nutrient cycling?" Invited speaker, Dept of Ecology and Evolutionary Biology, University of Minnesota, April 12, 2006.
- "Climate and ecosystem functioning – does microbial diversity matter?" Invited speaker, Center for Ecological Research, Kyoto University, Japan, July 8, 2005.
- "Linking microorganisms and terrestrial ecosystem functioning – does diversity matter?" Invited speaker, Yokohama National University, Yokohama, Japan, July 1, 2005.
- "Is there a meaningful connection between above and belowground diversity?" International Symposium on Biodiversity, Invited Speaker, Max Planck University, Jena, Germany, 5/14/04.
- "Linking Microbial Communities and Soil Processes – Who, What, When, Where, How and Why?" University of PA Biology Department Seminar Series, Philadelphia, PA, Dec. 9, 2002.
- "Ecology Underground: Linking soil microbiology and ecosystem functioning." Madison Ecology Group 8th Annual Ecology Symposium, UW-Madison, Madison, WI, Oct. 4, 2002
- "Linking microorganisms and terrestrial ecosystem functioning: do microbial communities matter?" Institute for Environmental Studies, Millbrook, NY. May 3, 2002.

Teaching and Outreach

Interested in enhancing and reforming the undergraduate experience, graduate student training and mentoring, and in creating learning-centered classrooms and teaching cultures with particular emphasis on preparing future faculty to teach. Teaching experience includes large (100-300 students)

courses as well as smaller seminars at all levels from freshman to graduate students. Experienced in outreach teaching, developing and delivering professional workshops, curriculum and program design.

Honors and Awards

- 2015 Chosen as 2015-2016 **Fulbright-Nehru Distinguished Chair**. Travelled to India in November, 2015 for four months to support capacity building for transformed life sciences education. Project title: *Building capacity for a pedagogically advanced and socially responsive life sciences curriculum*.
- 2015 Chosen as one of three finalists for the **Robert Foster Cherry Award for Great Teaching**. Given to a master teacher every two years, the \$250,000 Cherry Award is the largest teaching prize in the English-speaking world.
- 2012 Selected from 250 applicants to be one of 40 **National Vision and Change Fellows** for collaborative effort by the National Science Foundation, Howard Hughes Medical Institute and National Institutes of Health to effect transformational change in undergraduate life sciences education. The Fellows represent all institutional types (community colleges to research 1 doctoral campuses) at the level of department chair or higher, and are charged with transforming undergraduate life sciences education in the United States.
- 2010 Chosen as **U.S. Professor of the Year, Doctoral and Research Universities** by the Carnegie Foundation for the Advancement of Teaching. The U.S. Professors of the Year program recognizes the most outstanding undergraduate instructors in the country – those who excel in teaching and positively influence the lives and careers of students. Sponsored by the Council for Advancement and Support of Education (CASE) and the Carnegie Foundation, it is the only national program to recognize excellence in undergraduate teaching and mentoring.
- 2009 Chosen as one of two National awardees, **USDA National Excellence in College and University Teaching Award**. The USDA awards recognize faculty who promote effective and innovative pedagogy evidenced by successive years of sustained, meritorious and exceptional teaching. The Awards Program recognizes and honors college and university teachers who excel at teaching, make a positive impact on student learning, and influence other teachers by example.
- 2008 Selected as a **National Biology Scholar**, National Science Foundation/American Society of Microbiology Biology Scholars Program. Participated in a cohort of faculty members interested in biology education research – conducted a study of student learning in groups within my large introductory Envs 101 course.
- 2007 Chosen as **UW System Madison Teaching Fellow** – Office of Professional and Instructional Development, UW System. Conducted a study of student active learning and engagement.

Classroom teaching

- 2023-present: full time faculty course delivery. Developed and delivered five new courses and short courses for undergraduate (3) and working professionals (2). See below for descriptions.
- 2016-2023: regularly invited to deliver guest lectures and short courses on and off-campus (intro and advanced soil science); developed new class “Science, Technology and Global Challenges” for students in newly launched Advanced Science degree at Curtin University. Regular contribution of soil science module to “Land and Water Resources.”

- Between 2011-2015 delivered guest lectures, developed two new courses, and revised (and delivered) a general education course for all online-delivery.
- Between 2001-2011 delivered between three and six undergraduate courses, and up to two graduate seminars, a year.
- Teaching philosophy and full teaching portfolio available upon request.

MOOCs Developed

Environmental Studies – A global perspective (EdX ENV1x, Curtin University)

Course description and goals: Six-week introduction to the broad field of environmental studies, as distinct from environmental sciences. Course is intended to simply outline the interdisciplinary nature of the field, and provide a window into what it is and how it's studied. Videos by the course moderators (Balser and Macedo) are complemented by videos highlighting work on our campus. Participants engage in a community of practice, focused on finding solutions to environmental issues. The goal is to raise awareness of the breadth of environmental studies, and challenge participants to take action in their communities. Course launched in 2016 with nearly 3,000 students.

Undergraduate courses revised or developed

Terrestrial Ecosystem Ecology. (Ecol 419, University of Calgary) Principles of terrestrial ecosystem ecology. Upper-level course for biology majors. Co-taught in W2024, 85 students, new prep.

Introduction to Sustainability in the Built Environment. (DSGN 241, University of Calgary) First semester, first year course for all students in the Bachelor of Design, City Innovation program in the School of Architecture, Planning, and Landscape. Principles of sustainability and application to urban environments. Taught in F2024, 93 students. New course, new prep.

The Future of the Global City. (DSGN 323, University of Calgary) Second semester, second year course for all students in the Bachelor of Design, City Innovation program in the School of Architecture, Planning, and Landscape. Exploration of sustainability and the future of urban environments. Co-taught W2025, 55 students. New course, new prep.

Foundations for Success in Science. (Sci 201, University of Calgary) Model in development for 2000 students as mandatory for all incoming science students. Course intended to support development of the cognitive and psycho-social skills necessary for success in university as well as beyond. Students will complete “skills” modules and apply them in challenge-based, hands-on learning centered on complex global challenges. In development for S20256 pilot.

Science, Technology and Global Problems (NPSC1002, Curtin University) First year, first semester class intended to acquaint high achieving students from a variety of backgrounds with the multidisciplinary nature of science research and its application to the solution of global problems. The course was offered for the first time in 2018 as part of a new “Advanced Science” Honours degree. First year students were challenged to work in teams to develop, peer review, and present a viable research proposal for a panel of experts. Course launched with 51 students.

Land and Life: The challenge of Human Existence (CALS SWS2008, Univ. of Florida) General education course intended to acquaint students from a variety of backgrounds with natural resources and environmental sustainability, with an emphasis on terrestrial resources. The course was taught entirely online, with an emphasis on interaction, discussion, and discovery. Course launched with 39 students.

Humanity's 2050 Challenge – Our Uncertain Future (CALS ALS 4932, Univ. of Florida) Introductory course intended to explore current issues in human wellbeing and sustainability. The course is designed as an active learning sampling of a wide range of cutting-edge topics in areas related to food, environment, health, economic and social systems, and how these are all complex and overlapping. Course objectives: students will come away with 1) an appreciation for the role of both the social and physical sciences, as well as humanities/arts, in the challenge we face in sustaining human wellbeing; 2) a sense of the complex nature of the problems we face (food system/production, health, environmental change etc.); 3) a broader more global perspective on food, health, and environment; and 4) ideas and motivation for how they can personally contribute now and in their career to addressing the challenges we face. Course launched with 36 students.

Forum on the Environment (Environmental Studies/Soil Science 101, Univ. of Wisconsin) Took over course in 2006 and redesigned as an active learning experience using guest-lectures and small group discussions. Course is broadly interdisciplinary, with freshman to senior students, and 60 different majors. Course objectives: provide introduction to environmental issues, raise level of environmental literacy on campus, challenge students to extend their learning about environmental issues to all areas of their lives. Course averages 200 students.

Soil Biology (Soil Science/Plant Pathology 323, University of Wisconsin) Took over course in 2002 and redesigned it using active inquiry and group learning elements. Course objectives: foster an appreciation for basic science while raising awareness of the role soil biology plays in ecology and the environment. I place an emphasis on the principles underlying the functioning of both managed and unmanaged systems, comparing the biogeochemical cycling and soil communities across a wide range of soils. Taught for 10 years, course averaged 30 students ranging from 3rd year juniors to senior-level graduate students.

Biological Interactions (Biocore 333, Biology Core Curriculum, University of Wisconsin) Capstone course for four-semester honors introductory biology sequence that provides a broad, in-depth, and integrated background for students interested in any area of biological science. Course is designed to help students build on and integrate the knowledge gained in previous three semesters, by addressing current research in topics such as signaling pathways and genetic disease. One of a team of 4 instructors. Was invited to participate in 2006, developed and now teach a unit on the human health and environmental consequences of bacterial genetic mobility in soil. Course averages 90 students.

Graduate and professional short-courses

Introduction to Change-making in Sustainability. W2025. Short course for the Association for the Advancement of Sustainability in Higher Education (AASHE), 40 participants. Twelve week course focused on helping learners (sustainability professionals and faculty) develop agency in the face of organizational barriers and challenges.

Foundations in Sustainability. S2025. Microcredential developed and delivered in hybrid mode for Dalhousie University Faculty of Open Learning and Professional Development. Twelve-week course intended as a basic introduction to sustainability for the general public, municipal employees, and working professionals.

Professional preparation (Soil and Water Science, Univ. of Florida). Course was developed and delivered in Fall 2015 to support the professional development of graduate students in the sciences. Participants were challenged to consider what makes them “marketable” and to prepare statements of professional philosophy.

Teaching large classes (Soil Science 875, University of WI, and ALS 3064, University of Florida). Course was developed in 2008 as a companion to ES/SS101, Forum on the Environment. The goal was to have participants read and discuss literature about teaching large classes, and develop a teaching module to implement in ES/SS101. First offered in 2008, 10 participants. By 2012 the course had grown to 30 participants in two sections. Delivered at University of Florida in summer 2013 with 15 participants (faculty, postdocs, grad students).

Microbial Communities and Global Change (Soil Science 875, University of Wisconsin). Course was created by Prof. Balser in 2001 as a seminar for graduate students, postdocs and faculty. Course goals are to foster interdisciplinary collaboration while raising awareness of the role soil biology plays in global change ecology. Taught for 5 years, seminar averaged approx 10 people. Two publications have resulted from the class.

Other teaching – outreach

Long-term participant in outreach and extension: between 2003-present, delivered 21 outreach and agricultural-extension presentations on the topics of climate change, soil quality, and soil ecology.

Climate change education

“The role of soils and soil organisms in climate change”, Invited speaker for Focus the Nation national teach-in (more than 1550 campuses participating). UW-Madison, Jan 31, 2008.

“Ecology Underground”, Invited outreach presentation for UW-Alumni’s Wednesday Night at the Lab series. UW-Madison, WI, February 28, 2007.

“Paradise Lost”, Contributor to traveling exhibition presenting climate change science through art. Displayed throughout the Upper Midwest in 2006-2007, with delivery of climate change education to K-12 classrooms.

“Microbial Ecology and Global Change”, Invited outreach presentation and participant in workshop to present climate change science through art. Manitowoc WI, May 5-10, 2006.

“Microbial Ecology and Global Change”, Invited outreach presentation at University of WI Earth Day Teach-in. Madison WI, April 22, 2006.

Community groups – soil ecology

“Changing the world, one grain of soil at a time”, invited presentation at Oak Hammock retirement community, Gainesville, FL. January 23, 2012. 45 in attendance.

“The hidden life of soil”, invited workshop leader for Riveredge Nature Center. 5 hour classroom and field session, Riveredge Nature Center, Cedarburg, WI, June 7, 2010. 30 in attendance.

“Ecology underground: the hidden life of soil”, invited speaker for the Riveredge Speaks Out lecture series. 1.5 hour session, Cedarburg Cultural Center, Cedarburg, WI, July 21, 2009. 50 in attendance.

“The Ground Beneath Your Feet” Invited Keynote speaker, RiverEdge Native Landscaping Conference, July 16 2008. 65 in attendance.

“Soil Ecology”, invited teacher for Field Natural History course for home-schooled high school students, 4 hour session at UW-Arboretum, Madison WI, May 7, 2008. 9 in attendance.

“Ecology underground: the hidden life of the prairie”, invited speaker for the Greater Madison Area Naturalists Winter Lecture Series, 2-hour session. UW-Arboretum, Madison WI, Jan 18, 2008. 90 in attendance.

“The Ground Beneath Your Feet”, Invited outreach presentation for Fox Valley Chapter of the Wild Ones, WI Native Landscaping group winter workshop. Oshkosh, WI, January 21, 2007. 75 in attendance.

“The Ground Beneath Your Feet”, Invited outreach presentation for Living Off the Land Graziers ‘Taste of the Country’ festival. Springfield, WI, September 16, 2006. 35 in attendance.

“The Ground Beneath Your Feet”, Outreach workshop, First Unitarian Society of Madison Adult Education programs. Madison WI, April 4, 2006. 18 in attendance.

"Ecology Underground," Invited presenter at 'Wild Ones' Regional Workshop for Native Landscaping, Memorial Union, UW-Madison, Madison, WI 50 in attendance.

Soil quality and farming extension

“Soil Ecology in Managed Systems” Invited presenter for Extension education workshop Trempeleau County, Blair WI. April 6, 2010. Approx 20 in attendance. Filmed and televised for local public TV.

“Managing Soil Biology for Soil Quality” Soil Ecology presenter for Extension in-service day at UW Wood County, Marshfield WI. July 7, 2009. Approx 50 in attendance.

“Understanding the Dynamics of Carbon Sequestration.” Presentation for Team Grains, Extension In Service Day, Madison WI, June 19 2008, Approx. 25 in attendance.

“Soil Ecology and Soil Quality” Soil Ecology presenter for Extension series on Soil Quality in WI. Aug. 2, 18, 30, and Sept 22 2005. Sept 27, 2006. Approx 50 in attendance each session.

“Soil Ecology and Soil Quality” Invited speaker for Midwest BioAg company annual meeting, Bloomer, WI Dec 2005. Approx. 100 in attendance.

“The Ecology of Nitrogen Cycling” Invited presenter at WI Aglime and Fertilizer Convention, Alliant Energy Center, Madison WI. 1200 in attendance.

"The Soil Food Web," Invited speaker at Workshop on Soil Ecology and Soil Quality, held at Devil's Head Resort, Merrimac, WI. 60 in attendance.

Advising and research mentoring

- Completed eight M.S. degree candidates in Soil Science, Botany, Env Studies and Education.
- Completed five Ph.D. candidates (Soil Science and Environmental Studies)
- Advised nine undergraduate research theses or projects; five honors theses.
- Mentored ten postdoctoral research associates from China, Japan, Germany, Kenya, U.S.
- Participated as part of approx. 36 Ph.D. and M.S. thesis committees during 2001-2013.
- Supervised four research academic staff from 2001-2012.
- Provided support and mentoring for graduate students and postdoctoral researchers via “Visiting Scholars Program in Ecosystem Microbiology” developed in Fall 2002, to provide access to microbiological methods for scholars nationally and internationally. Advising and support provided prior to, during, and following all visits. More than 34 students, postdoctoral researchers, and faculty, from 17 institutions and 6 countries participated.
- Operated as service lab for programs nationally. E.g. ran all baseline soil and lipid analyses for the U.S. National Science Foundation National Ecological Observatories Network (NEON).

Master's Degree Candidates (10)

Madison Rissling (Masters of Public Policy, Capstone). "Student athletes and mental health." Aug 2024.

Alex Nguyen (Masters of Public Policy, Capstone). "International students as ideal immigrants." Aug 2024.

Julie Collins (Agroecology). "Engaging and developing student interest in the N cycle." Dec 2013.

Amy Jo Dusick (Gaylord Nelson Institute for Environmental Studies, Environment and Resources). "The impact of garlic mustard on soil and human communities." June 2012.

Amanda Evenstone (Gaylord Nelson Institute for Environmental Studies, Environment and Resources). "Environmental action and the development of interdisciplinary maturity." June 2012.

Laura Lipps (Gaylord Nelson Institute for Environmental Studies, Land Resources). "Sustainable biofuel production? Crop management and decision support." February 2010.

Lindsey Moritz (Soil Science) "Carbon cycling and microbial communities with depth in soils from contrasting parent materials in the old-world tropics." May, 2008.

Devin Wixon (Botany; co-advised with T. Allen), "Black boxes and complexity: Microbial decomposition temperature response factors and functions." December, 2007.

Nicole Craig (Nelson Institute for Environmental Studies, Land Resources) "Exploring the biotic and social aspects of Rain Gardens in Dane County, Wisconsin." May, 2007.

Jessica Gutknecht (née Mentzer) (Soil Science), "Seasonal response of a microbial community to hydrologic and nutrient treatments in a simulated wet prairie ecosystem." December, 2003.

Doctoral Candidates (5)

A. Peyton Smith (Soil Science; co-advised with Erika Marin Spiotta), "Microbial and mycorrhizal ecology and restoration of degraded lands." September, 2013. Current status: Assistant Professor, University of Texas, Austin.

Devin Wixon (Botany; co-advised with Dr. Tim Allen), "Mathematical models and reality: The carbon consequences of microbial response to temperature stress." December 2011. Current status: Associate Director, Delta Program for Teaching and Learning. University of Wisconsin, Madison.

Chao Liang (Soil Science), "The contribution of microbial biomass to stable soil carbon." July 2008. Current status: Scientist/Professor, Institute of Applied Ecology in the Chinese Academy of Sciences. Also Affiliate Scientist, Cornell University.

Jessica Gutknecht (née Mentzer) (Soil Science), "Exploring long-term microbial responses to simulated global change." August, 2007. Current status: Associate Professor, University of Minnesota.

Jenny Kao-Kniffin (Nelson Institute for Environmental Studies, Land Resources), "The importance of plant and microbial composition in predicting ecosystem responses to global change." July, 2007. Current status: Associate Professor, Cornell University.

Undergraduate Research (9)

Elizabeth Hovel (Honors Biology), "The impact of freeze-thaw cycles on microbial communities from different soils". January 2010 to May 2010. *Honors Thesis*.

Rachael Steller (Molecular Biology and Environmental studies), “Carbon sequestration under biofuels crops”. May 2008 to May 2009. *Honors Thesis, University Bookstore Award winner.*

Anne Drehfal (Molecular Biology), “Microbiology at the Biocore Prairie”. September 2006 to May 2007. *Honors Thesis, University Bookstore Award winner.*

Kristen Becklund (Molecular Biology), “The importance of functional and taxonomic diversity for microbial stress response”. September 2006, to May 2007. *Honors Thesis.*

Vivian Chang (Biology), “The impact of freeze-thaw and freeze-drying on molecular and lipid soil community profiles”. September 2006 to May 2007.

Christie Boser (Biology), “The impact of extraction protocol and extant land use on soil lipid profiles”. September 2002 to August 2003.

Meredith Schumann (Molecular Biology and Philosophy), “The occurrence of ammonium oxidizing bacteria in extremely acid Hawaiian tropical soils” September 2004 to August 2005. *Honors Thesis, University Hilldale Award winner.*

Ruth Franco-Almestica (Biology), “The diversity of coprophilic fungal specialists in zoo-kept and wild vertebrate feces”. Student intern from Puerto Rico, summer 2006.

Dominique Freyre (Molecular Biology), “Molecular and lipid profiles of methanogenic and methanotrophic bacterial communities in invaded wet prairie soils”. Student intern, summer 2006.

Postdoctoral Research Associates (10)

Dana Bigham-Stephens (Biology Education), University of Florida, 2012-2014. Currently Director, Mattie M. Kelly Environmental Institute and Mattie M. Kelly Chair in Environmental Science, and Dean of Arts and Sciences, Northwest Florida State College

Lei Sun (Soil Microbial Ecology), Visiting from Hebei University, Baoding, Heibei China. January 2011-January 2012.

Devin Wixon (Soil Carbon Science), University of Wisconsin-Madison, 2011. Currently: Assistant Director, Delta Program for Teaching and Learning. University of Wisconsin, Madison.

Chao Liang (Soil Carbon Science), University of Wisconsin-Madison, 2008-2011. Currently: Scientist/Professor, Institute of Applied Ecology in the Chinese Academy of Sciences. Also Affiliate Scientist, Cornell University.

Masayuki Ushio (Soil Ecology and Biogeochemistry), Visiting from Center for Ecological Research, Kyoto University, Kyoto, Japan. April 2010-September 2010. Currently: JSPS Postdoctoral Fellow, Center for Ecological Research, Kyoto University, Japan.

Dirk Krueger (Soil Mycology), University of Wisconsin-Madison, January 2006 to February 2007. Last known: Senior Scientist (Biodiversity), Helmholtz Centre for Environmental Research – UFZ Department of Soil Ecology, Halle/Saale (Sachsen-Anhalt), Germany.

David Bart (Anthropology and Plant Ecology), University of Wisconsin-Madison, July 2004 to December 2006. Currently: Associate professor, Landscape Architecture, UW Madison.

Daouda Ndiaye (Soil Microbiology, Co-advised by J. Gullledge), September 2005 to Jan 2006. Last known: Soil Ecology Consultant at the Center for Ecological Monitoring in Dakar, Senegal, Africa.

Michele Zwolinski (Soil Microbiology), October 2001 to July 2002. Last known: Associate Professor, Microbiology, Weber State University, Ogden Utah.

Mine Ekenler (Soil Ecology), March 2003 to 2004. Currently: Independently employed.

Academic Research Staff Supervised at University of Wisconsin

Dr. Harry Read (Soil Science), October, 2001 – 2011

Kevin Budsberg (Bacteriology), March, 2007 – 2011

Dr. Susan Read (Biochemistry), September 2008 – December 2009

Marlo Dobrient (Biology), July, 2006 to December, 2006

Membership in Professional societies and other professional activities

Professional society memberships

American Association for the Advancement of Science (2013-present)

American Institute for Biological Sciences (2004 – present)

American Geophysical Union (2000 – 2002)

American Society for Microbiology (2007 – 2011)

Canadian Soil Science Society (2023-present)

Ecological Society of America (1995 – present)

Higher Education Research and Development Association (2015-present)

International Society of Ecology (2013 – 2020)

International Society for Microbial Ecology (1999 – 2012)

Professional Organizational Developers (POD) Network (2005 – 2008)

Sigma Xi Scientific Honor Society (1991 – present)

Society for the Advancement of Biology Education Research (co-founder) (2010-present)

Soil Science Society of America (1992 – present)

Other activities

Advisory Boards. Elected member of the University of Calgary Faculty Association Board (2025-2028). Member of the Association for the Advancement of Sustainability in Higher Education (AASHE) Advisory Board (2024-present).

Editorial Boards. Member of the editorial board for PeerJ, open access journal in Australia

Federal agency grant review panels. U.S. activity: regular panelist for U.S. NSF and USDA. In Australia: ARC College of Experts 2018-2020. In Europe: regular reviewer for European Science Foundation; chosen as Member of Flanders Science Expert College.

External examiner. Invited external expert reviewing PhD theses and tenure/promotion cases for U.S., South Africa, Australia, Pakistan, India.

External manuscript reviewer. Including Science, Nature, Ecology, Biogeochemistry, Applied and Environmental Microbiology, Ecological Applications, Global Change Biology, Journal of Excellence in College Teaching, Microbial Ecology, Oecologia, Pedobiologia, Proceedings of the National Academy of Sciences, Science of the Total Environment, Soil Biology and Biochemistry, Soil Science Society of America Journal, Wetlands.

External grant reviewer for 17 national and international funding agencies, including the German Science Foundation, the European Science Foundation, Biodiversity Initiative, the Swiss National Science Foundation, the Czechoslovakian Science Foundation, the UW Chapter of Graduate Women in Science, Auburn University External Experiment Station, USDA CSREES Hatch, USDA CBRD proposals, USDA Soil Processes, NAU, DOE Carbon Cycle Science SBIR I

and II, NSF: Microbial Ecology, Microbial Observatories, Ecosystems, Ecological Biology, Coupled Biogeochemical Cycles, Geosciences.

Co-convenor, Colloquium on “Understanding the Microbiological aspects of global change”. Invited by American Society of Microbiology, for annual conference in Boston, MA, June 1-5, 2008.

Invited workshop participant, “Integrating NEON and Microbial Biology”, Convened by Gary King, National Ecological Observatories Network (NEON), Baton Rouge, LA, Feb. 14-17, 2008.

Invited delegate and speaker, week-long Oxford Round Table conference on Global Warming and Sustainable Development: Governing a Crisis. 35 delegates from 9 disciplines in attendance. Oxford, U.K., August 12-17, 2007.

Organizer and facilitator, 3-day NSF Funded Workshop on Linking Micro-and Macro-scale ecology. April 16-18, 2007. 30 participants, Washington, D.C.

Invited participant and speaker, Biodiversity Symposium at the Max Planck Institute for Biogeochemistry, Jena Germany. May 16, 2007.

Working group leader and lead writer, 4-day workshop (sponsored by NCAR) to formulate a science plan for U.S. nitrogen cycle research.

Panel member, International Scientific Advisory Board for German long-term experiment in Biodiversity and Ecosystem Processes, Jena, Germany.

PERSONAL PROFESSIONAL DEVELOPMENT

Sociocracy for All Academy, Sociocracy Facilitator, Trainer and Consultant Certification, 2024-2025. Yearlong certification program to build expertise in facilitating the development and implementation of Sociocracy as a “flat” and more equitable form of governance.

Wayfinder Life Coach Training, Martha Beck Institute, 2022-2023. Nine-month training program accredited by the International Coaching Federation. Program delivers experiential learning and practice in using coaching tools and ways of being. Program culminates in coaching certification.

Harvard Kennedy School Crisis Leadership in Higher Education, 2018. Designed by faculty from the Harvard Graduate School of Education and Harvard Kennedy School, the program in Crisis Leadership in Higher Education provides critical information about proactive training and planning for university leaders to learn how to implement effective crisis management systems in advance of a critical event.

Association of Public and Land Grant Universities Food Systems Leadership Institute (FSLI), 2012-2014 participant. The Food Systems Leadership Institute offers leadership development to upper-level leaders in higher education, government, and industry to prepare them to meet the leadership challenges and opportunities of the future. In developing organizational change abilities we equip the leader to act as an agent of change both in their own organization and in larger, more complex systems. Broadening the leader's food systems perspectives creates the vision for change toward a broader, more interdisciplinary and collaborative food system.

American Society for Microbiology (ASM)/NIGMS Learning Interventions Institute, 2010 participant. The ASM Learning Interventions Institute is directed at administrators who are interested in conducting research about how and why students, particularly those from diverse backgrounds, advance in science, technology, engineering, and math (STEM) disciplines as well as the interdisciplinary, biomedical, and behavioral sciences.

Committee on Institutional Cooperation (CIC) Academic Leadership Program, Fellow (2009). The CIC Academic Leadership Program is designed to develop the leadership skills of select faculty on CIC campuses who have demonstrated exceptional ability and administrative promise. The CIC includes the 11 members of the Big Ten Conference and the University of Chicago. Fellows meet monthly for two-hours on their home campus to interact with and learn from campus leadership, and spend four weekends visiting another CIC campus to focus on budgets, curriculum, governance, and building leadership capacity in higher education.

Joseph F. Kauffman Administrative Development Program (2008). Year-long invitational program designed to increase knowledge about the University of Wisconsin. Nominees meet biweekly for three hours to learn about the history and culture of UW Madison, to interact with senior administrators in an informal setting, and to discuss issues of change in higher education.

General leadership development and trainer-training (2003-2006). Completed 18 months of leadership and trainer-training run by Millennium3 Education, Dallas, Texas. Graduated from Basic and Advanced training programs, completed 3-month Leadership program, and invitation-only 6-month Leadership Trainer-Training program. Worked as a professional coach during training period, developed and implemented leadership training workshops.

Six Sigma process improvement training. Six Sigma business process improvement trainee, current “yellow-belt” level. Invited to train as Black-belt. Trainees learn business management skills such as project management, business process design and improvement, ways to enhance efficiency and reduce wasted time.

Facilitation training. Certificate in Integral Facilitation, UW Office of Quality Improvement, Madison, WI, and “FacilitatorU,” Santa Monica, CA. Certificate training, October 2007. Advanced training, November 2013. Trainees learn meeting management and integral (holistic) facilitation techniques.

ADMINISTRATIVE AND LEADERSHIP EXPERIENCE

~Fifteen years experience in senior leadership with outcomes at the Faculty, University, National, and International levels. Particular strengths in strategic leadership, innovation, and implementing change. Particular emphasis on, and commitment to, inclusive excellence and shared governance.

Positions ranging from Director, to Dean, to Provost, to interim-President. Full portfolio available on request.