TERESA C. BALSER

PROFESSOR, FACULTY OF SCIENCE
University of Calgary
[redacted]

SUMMARY OF QUALIFICATIONS

- Experienced administrator with strong research and teaching background and more than fourteen years at a senior leadership level. 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.
- Collaborative, interdisciplinary, international research program in environmental science and ecosystem ecology. U.S. NSF Early Career Award winner, with funding from Division of Environmental Biology, Ecosystems, US DOE, and Andrew Mellon Foundation. More than 80 articles and invited book chapters published, more than 45 invited seminars and presentations to date. Successfully supervised 8 M.S., 5 Ph.D., and 10 postdoctoral researchers.
- Internationally known educator and innovator. Incorporation of active learning, innovative curriculum design, and teaching-as-research (SoTL) 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 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.

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

2021-2022 **Provost and Vice-President (Academic)**

Dalhousie University, Halifax, Nova Scotia

2020-present **Adjunct professor**, Faculty of Agriculture and Faculty of Health

2019-2020 **President and Vice Chancellor (Interim)**

2018-2020 **Provost and Vice-President Academic**

2018-2020 **Professor**, Faculty of Agriculture Department of Plant, Food and Environmental Sciences

Curtin University, Perth, Western Australia

2018-present **Adjunct Professor**, School of Science

2016-2018 **University Associate,** Advisor to Director of People and Culture (Human Resources)

2015-2018 **Professor and Dean of Teaching and Learning**, Faculty of Science and Engineering

University of Florida, Gainesville, Florida

2015-present **Adjunct Professor**, Department of Soil and Water Science, University of Florida

2011-2015 **Professor**, Department of Soil and Water Science, University of Florida

2011-2014 **Dean**, College of Agricultural and Life Sciences, University of Florida

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, Kyoto Japan

2004-2010 **Doctoral Trainer**, Microbiology Doctoral Training Program

2001-2011 **Faculty Affiliate in 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 fur 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. See "Pushing the limits in research and leadership": https://youtu.be/7biAFEsytH8

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)

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

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

NSF Early CAREER Award Recipient, Division of Environmental Biology (2006)

Professional Recognition

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 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)

ADMINISTRATIVE AND LEADERSHIP EXPERIENCE

Nearly 15 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.

UNIVERSITY OF CALGARY, CALGARY, ALBERTA

The University of Calgary is located in Calgary, Alberta on Treaty Seven Territory. The University started in 1944 as the Calgary branch of the University of Alberta, founded in 1908, prior to being instituted into a separate, autonomous university in 1966. A member of the Canadian "U15" and ranked in the top 5 of universities in Canada, it is composed of 14 faculties and more than 85 research institutes and centres, with more than 26,000 undergraduate and 6000+ graduate students.

Provost and Vice-President (Academic) (April 1, 2021 – August 10, 2022)

Overall Responsibilities:

- Oversee activities of 29 direct reports, including 14 Faculty Deans, and eight Vice-Provosts, one Associate Vice President (Continuing Education), and three Directors (Sustainability, Mental Health, and Entrepreneurship).
- Interface with and coordinate the operational activities of the Vice-Presidents for Research and Innovation, Advancement, Finance, and Services regarding overall functioning of the University.
- Support career and leadership development of approximately 2000 faculty members in research and teaching. Support and mentor faculty members to promotion.
- Lead strategic and long-term planning, and budget development and allocation. Responsible for aligning the university budget with strategic priorities.
- Interface with and represent the university to government ministries and advocate for support.

Key accomplishments:

- Developed and launched university "Strong Foundations Plan" (Strong People, Processes, and Systems) to achieve operational and systemic efficiencies and adapt to significant changes in government and financial environment.
- Operationalized key elements in university-wide strategic plan "Framework for Growth." Developed "Institutes for Transdisciplinary Studies" to build capacity for transdisciplinary scholarship. Commissioned university strategy on transdisciplinarity.
- Oversaw and coordinated successful proposal to Alberta government for university program expansion in STEM and business areas (2,130 new students; $61M).
- Substantial revision to annual budget process to introduce transparency, consistency and integrated decision-making.
- Successful work with donor for $3.75M partnership to develop work-integrated learning for neurodiverse students.
- Oversaw development of plan for EDI cluster hire of 36 IBPOC faculty members between 2023 and 2026.
- Commissioned development of guide for incorporation of EDI support and Indigenous engagement into curriculum approval and evaluation process.

DALHOUSIE UNIVERSITY, HALIFAX, NOVA SCOTIA

Dalhousie University is located in Halifax, Nova Scotia on the unceded territory of the Mi'kmaw. Founded in 1818, Dal is one of Canada's oldest universities, attracting roughly 20,000 students from around the world and nearly 1,000 faculty members across 13 Faculties spanning Arts, Health, Engineering, Law, Business, and Science. As one of Canada's top 15 research universities, Dalhousie blends transformative academic programs with pioneering research.

President and Vice Chancellor (Interim) (July 1, 2019 – Jan. 15 2020)

Overall Responsibilities:

- Oversee the activities of four Vice-Presidents (Advancement, Finance and Administration, research and Innovation, and Academic), university General Counsel, and Associate Vice-Presidents for Government Relations, and Communications and Marketing.
- Represent the university to all external government and Board constituents.
- Interface with colleague presidents at all regional universities and across the Canadian "U15" (research intensive universities).
- Ensure the continuity of university strategic goals and planning.
- Build foundation for incoming President.

Key accomplishments:

- Maintained progress and momentum on strategic planning.
- Continued key EDI work: received university report on race and slavery, as well as Indigenous and African Nova Scotian strategies. Recruited new Vice-Provost for Equity and Inclusion.
- Managed key interactions and events with students and external communities.
- Commissioned and completed external review of International Activities and structure.
- Continued work on Dal Budget Future and financial sustainability.

Provost and Vice President Academic (Nov 1, 2018 – May 26, 2020)

Overall Responsibilities:

- Oversee activities of 24 direct reports, including 13 Faculty Deans, three Vice-Provosts, and two Associate Vice Presidents Academic.
- Interface with the Vice-Presidents for Research and Innovation, Advancement, and Finance and Administration regarding overall functioning of the University.
- Support career and leadership development of approximately 1000 faculty members in research and teaching. Support and mentor faculty members to promotion.
- Lead strategic and long-term planning, and budget development and allocation. Responsible for aligning the university budget with academic priorities.

Key accomplishments:

- Designed and implemented overall university strategic planning process.
- Redesigned annual Budget Advisory Committee process to be inclusive of all voices and aligned to strategic planning process.
- Facilitated continuity of EDI work following departure of former president – study of race and slavery, strategies for indigenous communities and people of African heritage, and created new position: Vice-Provost for Equity and Inclusion.
- Completed six leadership searches, one decanal review, and two administrative area reviews.
- Oversight of shift to remote teaching in pandemic, and developed academic plan for fall 2020

CURTIN UNIVERSITY, PERTH, WESTERN AUSTRALIA

Curtin University, Western Australia's largest university, enrolls nearly 62,000 students annually. Curtin is a truly global university, with campuses and programs circling the Indian Ocean – Malaysia, Singapore, Dubai, Mauritius, and Sri Lanka, and a deep partnership with the University of Aberdeen in Scotland. Curtin's Faculty of Science and Engineering encompasses roughly 700 faculty members in five schools across the full breadth science, technology, engineering and math disciplines. The Dean of Teaching Learning is one of a team of three Deans (Teaching and Learning, Research, and International) that serve the Faculty under the Pro-Vice Chancellor. The Dean T&L is responsible for undergraduate and graduate level education, faculty development, and student academic programs and services.

Dean, Teaching and Learning – Faculty of Science and Engineering, (2015-2018)

Overall Responsibilities:

- Oversee administration of undergraduate and graduate degree programs. Work with team of associate deans for teaching and learning, and office staffs.
- Manage office staff of 13, including Directors of Equity and Diversity, English Language Development, and Student Engagement. Interface with Pro-Vice Chancellor and the Deans for Research and International with regard to overall functioning of the Faculty.
- Support career and leadership development of approximately 700 faculty members in research and teaching. Develop programs to support and mentor faculty members to promotion.
- Engage in strategic and long-term planning, and budget development and allocation.
- Promote innovation and program development in areas that result in improved teaching, learning, and faculty, staff, and student engagement.
- Oversee curriculum development and innovation across the Faculty.

Key accomplishments:

- Worked with Curtin Faculty of Science and Engineering to develop sustainable plan for a 15% budget reduction to the $190M annual operating budget.
- Developed Faculty "Future Focus" strategic plan for transformation of teaching and learning. Developed recommendations and plan for major cross-faculty curriculum reform.
- Member of executive group that worked for two years to bring international "Athena Swan" gender equity bronze-level certification to Curtin.
- Developed and implemented program to support and mentor faculty to promotion. Particular emphasis on women's success.
- Part of university-level committee to review and revise guidelines for promotion incorporating scholarship of teaching and learning.
- Implemented annual assessment of organizational climate.
- Revised governance structure for T&L in Faculty: created Teaching and Learning Council to foster inclusive and shared governance; developed Curriculum Operations Committee to engage professional and academic staff.
- Developed policy on the development and use of massive open online courses (MOOCs) as part of university curriculum.
- Developed and delivered (ongoing) MOOC in environmental studies, and a first-year student research course in new advanced science degree. Both are models of innovation.

UNIVERSITY OF FLORIDA, GAINESVILLE, FLORIDA

The University of Florida is the state's land-grant institution and flagship campus. The UF enrolls nearly 50,000 students annually. **The College of Agricultural and Life Sciences (CALS)**, with roughly 4,000 undergraduates and 1,300 graduate students in 22 undergraduate majors and 23 graduate programs is the fourth largest college of agriculture in the country. CALS is housed within the Institute of Food and Agricultural Sciences (IFAS) and is home to roughly 350 faculty members with teaching appointments. The Dean of CALS is one of a team of four Deans within IFAS, including deans of CALS, Veterinary Medicine, Research, and Cooperative Extension.

Dean, College of Agricultural and Life Sciences (2011-2014)

Overall Responsibilities:

- Oversee administration of 22 undergraduate majors and 23 graduate degree programs. Manage office staff of 18, interface with Senior Vice President of IFAS and IFAS deans for Research and Extension, and associated office staffs.
- Evaluate and review departmental programs and units.
- Conduct annual evaluation of staff and faculty involved in instruction and outreach.
- Engage in strategic and long-term planning, fund raising for program and capital improvement, and budget development and allocation.
- Develop and support shared governance among faculty, staff and administration.
- Promote innovation and program development in areas that result in improved teaching, learning, and faculty, staff, and student engagement.
- Work collaboratively with IFAS deans for research and extension in budget development, programs to foster connections among research, teaching and extension, and evaluation of faculty and staff for tenure and promotion.

Key accomplishments:

- Developed and implemented new policy for tenure/promotion to recognize and reward teaching emphasis, and scholarly teaching.
- Created Roche Teaching Fellows program to build community around innovative teaching.
- Created CALS Council for Teaching Enhancement to foster shared governance.
- Designed, developed, and successfully pitched a UF flagship challenge-based education program to major international corporation, Limagrain. Program has won a national award, and continues to generate more than $100K a year in funding.
- Developed new Ph.D. program in Agricultural Entrepreneurship in partnership with independent industry donor, leading to subsequent major gift.
- Developed and executed plan for regular engagement with alumni, and created a tiered giving program (UF CALS Dean's Circle) to attract young alumni, as well as senior donors, and provide discretionary funds to the College. Program now generates roughly $104K annually.
- Successful implementation of reduction to $195M budget at University of Florida, orchestrated a sustainable cut of 10% from student-fee generated budget.
- Built a coalition and brokered the development of a UF common first year core set of courses.
- Planned and implemented a university-wide yearlong celebration of the 150th anniversary of signing of the Morrill Act, culminating in an end of the year top-shelf presidential symposium: Bricks and Mortar in a Digital Age.

UNIVERSITY OF WISCONSIN-MADISON, MADISON, WISCONSIN

The University of Wisconsin-Madison is the state's land-grant institution and flagship of the UW System's 26 campuses. It is consistently ranked among the top research institutions in the U.S. with annual expenditures of more than $1 billion. UW-Madison currently enrolls more than 40,000 students. The Institute for Biology Education (originally called Institute for Cross-college Biology Education and now called WISCIENCE) was formed in 2004 to provide a home for the nascent cross-college "Biology" major (begun in 2000) and to provide coordination and structure for undergraduate biology. Existing outside of the traditional college structure, reporting to the Provost, the Director was charged with enhancing the educational experience of the 6,000 bioscience majors as well as serving as an umbrella organization to house, coordinate, and integrate its component parts: (1) the introductory biology course sequences; (2) the non-departmental bioscience majors (Biology, Molecular Biology, and Biological Aspects of Conservation); and (3) the former "Center for Biology Education" whose primary focus was outreach.

Director, Institute for Biology Education (IBE) (2008-2011)

Overall Responsibilities:

- Work with faculty, staff, and Deans' and Provost's offices across the University to coordinate, improve, and support the three Introductory Biology course sequences and three non-departmental bioscience majors.
- Recruit, nurture, and retain faculty and staff for instruction and advising in introductory biology and the non-departmental majors.
- Manage office staff of 30, oversee administration and advising of three non-departmental majors: Biology (~1300 students), Molecular Biology (~120 students), and Biological Aspects of Conservation (~250 students); as well as provision of general support and advising for the ~6000 students on campus that have declared one of our 31 bioscience majors.
- Evaluate and review Institute programs and staff and faculty involved in instruction and outreach.
- Engage in strategic and long-term planning, budget development and allocation, and fund raising and capital improvement.
- Ensure shared governance for undergraduate introductory biology and the non-departmental majors among faculty and staff from across four colleges and schools and within the Institute.
- Support development and delivery of academic programs, in partnership with cross-campus entities, to enhance the undergraduate education experience in biology. Undergraduate-focused program areas include: The First-Year Experience; Engagement Outside the Classroom (undergraduate research, service learning, study abroad); Excellence and Innovation in the Classroom (faculty and future faculty development).
- Promote science education and literacy through outreach programs: oversee the administration of the Office of Science Outreach, and support community and K-12 science education programs.

Key accomplishments:

- Developed unique first-year course to support transition to university and explore life sciences.
- Wrote and submitted successful University-level proposal for $1.9M to HHMI, to improve first year experience and support first generation students in developing college readiness.
- Was part of the executive group organizing UW 10-year reaccreditation, and co-lead for self-study project on "Creating a Welcoming, Respectful, and Inclusive University" for 10-year strategic plan.
- Part of university-wide Administrative Process Redesign project to transform university functioning. Lead academic on team that created software tool to better allow principal investigators to monitor and manage grant expenses.

Other significant administrative or leadership positions held

Faculty of Science and Engineering Future Focus Project, Steering Committee and Chair of Teaching and Learning Work stream. (2016-2017) Led the teaching and learning work stream for transforming the Faculty to create budget sustainability and innovation. Participated in the Research and Globalization work streams. Charge was to develop a set of programs and initiatives that would modernize our curriculum and allow for greater opportunity to attract and retain domestic and international students.

- Generated and facilitated multiple sub-groups to address issues of innovation, modernization, teaching and research overlap, and general workload.
- Co-authored and presented final plan to the campus higher leadership (Provost and Vice-Chancellor)

UW-Madison 2009 Reaccreditation project, Steering Committee member and Self-study Theme Co-Chair. (2007-2009) Participated in UW-Madison reaccreditation as member of the Steering Committee and Co-Chair for Self-study Theme "Building a welcoming respectful and empowered UW-Madison Community." Team charge was to conduct a self-study and develop recommendations for improving campus climate regarding diversity, inclusivity, and equity.

- Assembled broadly diverse team of faculty, academic and classified staff, students and alumni to conduct listening sessions and interviews with all campus units focused on inclusivity, diversity, or gender.
- Coordinated and facilitated team retreats focused on recommendations for creating a welcoming campus
- Co-authored and presented 60 page final self-study report to the campus higher leadership (Dean's Council, Vice-Chancellor for Administration's Council, and Provost)
- Participated in follow-up campus strategic planning exercises

Research and Sponsored Projects Task Force on Effort, Chair. Assembled and led faculty advisory team to the Associate Vice-Chancellor for Research Administration. Provided input and faculty perspective on the new effort reporting structure, assisted in developing effort reporting training materials for faculty and staff.

UW-Madison Administrative Process Redesign, team member and PI representative. Participated in campus Administrative Process Redesign. Completed Six-Sigma business process improvement training (current black-belt candidate). Represented faculty interests to campus administrative and financial staff. Facilitated faculty and staff focus groups and interviews about grants management and federal compliance. Co-developed a tool and process to improve faculty grants and financial management.

Gaylord Nelson Institute for Environmental Studies (NIES) Task Force, member. Participated in task force to develop an interdisciplinary professional M.S. degree program within the NIES. Conducted curriculum review and needs assessment, designed innovative new program for working professionals to complete an evening M.S. degree.

PROFESSIONAL SERVICE/LEADERSHIP

Professional Service/Leadership (Regional/National Committee Service)

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

2021-present	Vice-Chair, University of Calgary General Faculties Council
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

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.

PERSONAL PROFESSIONAL DEVELOPMENT

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 for retreats focused on issues in higher education leadership such as budgets, curriculum, governance, and building leadership capacity.

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.

INVITED 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.

"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 October 2017, Northern 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=dsfI6H6jvk4&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, Bethesda, 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. October 23, 2012.

"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 AND SERVICE

Publications

Summary

- More than 80 peer-reviewed journal articles published or in review to date (as of February 6, 2021: h index = 42, i10 index = 71, 8112 citations)
- Four articles on leadership and graduate education published (one peer reviewed)
- Four invited book chapters
- 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. Contracted as 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 Book Chapters or Forewords

Balser, T.C., 202x. *(in proofing)* University leadership that enables innovation for sustainability education and sustainable development. In Section 9, *Sustainability Education in the 21st Century*. Taylor and Francis, Perth WA

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

83. Peteroy-Kelly M, Brancaccio-Taras L, Awong-Taylor J, Balser T, Jack T, Lindsay S, et al. (2019) A qualitative analysis to identify the elements that support department level change in the life sciences: The PULSE Vision & Change Recognition Program. PLoS ONE 14(5): e0217088. https://doi.org/10.1371/journal.pone.0217088

82. Balser, T., Chao Liang, Jessica Gutknecht, 2019. Linking microbial community analysis and ecosystem studies: A rapid lipid analysis protocol for high throughput. Soil Ecology Letters v1 pp. 22-32.

81. Andenoro, T., M.J. Sowcik, T. Balser, 2017. Addressing Complex Problems: Using Authentic Audiences and Challenges to Develop Adaptive Leadership and Socially Responsible Agency in Leadership Learners. Journal of Leadership Education, v16 n4 p1-19. DOI: 1012806/V16/I4/R1

80. Oates, L.G., Read, H.W., Gutknecht, J.L., Duncan, D.S., Balser, T.B., Jackson, R.D., 2017. A Lipid Extraction and Analysis Method for Characterizing Soil Microbes in Experiments with Many Samples. J. Vis. Exp. (125), e55310, doi:10.3791/55310.

79. Liang, Chao, Jenny Kao-Kniffin, Gregg R. Sanford, Kyle Wickings, Teri C. Balser, Randall D. Jackson, 2016. Microbes and their residues under restored perennial grassland communities of varying diversity in the upper Midwest of the United States. Soil Biology and Biochemistry, 103:192-300.

78. Brancaccio-Taras, L., P Pape-Lindstrom, M Peteroy-Kelly, K Aguirre, J Awong-Taylor, T Balser, M J. Cahill, R F. Frey, T Jack, M Kelrick, K Marley, K G. Miller, M Osgood, S Romano, J. A Uzman, J Zhao. 2016. The PULSE Vision & Change Rubrics Version 1.0: A valid and equitable tool to measure life sciences department transformation at all institution types. CBE-Life Sciences Education 50:ar60 Winter 2016. DOI:10.1187/cbe.15-12-0260.

77. Liang, Chao, Ederson da C. Jesus, David S. Duncan, Randall D. Jackson, Teri C. Balser, James M. Tiedje, 2016. Switchgrass rhizospheres stimulate microbial biomass but deplete microbial necromass in agricultural soils of the upper Midwest, USA. Soil Biology & Biochemistry 94, 173-180.

76. da C. Jesus, Ederson, C. Liang, J.F. Quensen, E. Susilawati, R.D. Jackson, T.C. Balser, and J.M. Tiedje. 2016. Influence of corn, switchgrass, and diverse prairie vegetation on soil microbial communities in the upper Midwest of the United States. GCB-Bioenergy 8, 481-494.

75. Grubbs, KJ, Scott JJ, Budsberg KJ, Read H, Balser TC, Currie CR, 2015. Correction: Unique Honey Bee (Apis mellifera) Hive Component-Based Communities as Detected by a Hybrid of Phospholipid Fatty-Acid and Fatty-Acid Methyl Ester Analyses, PloS one 10 (7), e0133100

74. Grubbs KJ, Scott JJ, Budsberg KJ, Read H, Balser TC, Currie CR (2015) Unique Honey Bee (Apis mellifera) Hive Component-Based Communities as Detected by a Hybrid of Phospholipid Fatty-Acid and Fatty-Acid Methyl Ester Analyses. PLoS ONE 10(4): e0121697. doi:10.1371/journal.pone.0121697

73. Smith, A.P., Erika Marin-Spiotta; Teri Balser, 2015. Successional and seasonal variations in soil and litter microbial community structure and function during tropical post-agricultural forest regeneration: A multi-year study. Global Change Biology DOI:10.1111/gcb.12947 ·

72. Lewandowski, Tera, Jodi A Forrester, David J Mladenoff, Jennifer L Stoffel, Stith T Gower, Teri C Balser, 2015. Soil microbial community response and recovery following whole-tree harvest: temporal patterns from an experimental group selection harvest in a US northern hardwood forest. Forest Ecology and Management 340: 82-94.

71. Liang, C., J. Gutknecht, T.C. Balser, 2015. Microbial lipid and amino sugar responses to long-term simulated global environmental changes in a California annual grassland. Frontiers in Microbiology, Terrestrial Microbiology. doi: 10.3389/fmicb.2015.00385

70. Pamela Pape-Lindstrom, Tom Jack, Kathy Miller, Karen Aguirre, Judy Awong-Taylor, Teri Balser, Loretta Brancaccio-Taras, Kate Marley, Marcy Osgood, Marcy Peteroy-Kelly, Sandra Romano, 2015. PULSE pilot certification results. Journal of microbiology & biology education 16 (2), 127

69. Smith, A.P., Erika Marin-Spiotta; Marie-Anne de Graaff; Teri Balser, 2014. Microbial community structure varies across soil organic matter aggregate pools during tropical land cover change. Soil Biology and Biochemistry 77:292-303. DOI:10.1016/j.soilbio.2014.05.030

68. Balser, T. 2014. New Leadership Paradigm? BioScience, 64: 1065-1066.

67. Dempsey, M. A., Fisk, M. C., Yavitt, J. B., Fahey, T. J., & Balser, T. C., 2013. Exotic earthworms alter soil microbial community composition and function. Soil Biology and Biochemistry, 67, 263-270.

66. Aguirre, K. M., Balser, T. C., Jack, T., Marley, K. E., Miller, K. G., Osgood, M. P., ... & Romano, S. L., 2013. PULSE Vision & Change Rubrics. CBE-Life Sciences Education, 12(4), 579-581.

65. Ushio, M., T. Miki, T.C. Balser, 2013. A Coexisting Fungal-Bacterial Community Stabilizes Soil Decomposition Activity in a Microcosm Experiment. PLoS ONE 8(11): e80320. doi:10.1371/journal.pone.0080320

64. Ushio, M., T. Balser, K. Kitayama, 2013. Effects of condensed tannins in conifer leaves on the composition and activity of the soil microbial community in a tropical montane forest. Plant and Soil, 365: 157-170

63. Liang, C., Duncan, D.S., Balser, T.C., Tiedje, J.M., Jackson, R.D., 2013. Soil microbial residue storage linked to soil legacy under biofuel cropping systems in southern Wisconsin, USA. Soil Biology and Biochemistry 57: 939-942.

62. Wixon, D., T.C. Balser, 2013. Towards conceptual clarity: PLFA in warmed soils. Soil Biology and Biochemistry. 57: 769-774

61. Kao-Kniffin, JT, and Balser TC, 2012. Erratum to: Soil Fertility and the Impact of Exotic Invasion on Microbial Communities in Hawaiian Forests Microbial Ecology 64:1085–1086 DOI 10.1007/s00248-012-0067-1

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59. Smithwick, E.A.H., K. J. Naithani, T.C. Balser, W.H. Romme, M.G. Turner, 2012. Spatial variability of microbial communities and soil nitrogen mineralization following wildfire. PLoS ONE 7(11): e50597. doi:10.1371/journal.pone.0050597

58. Ushio, M., T.C. Balser, K. Kitayama, 2012. Conifer condensed tannins as a potential determinant of the composition and activity of the soil microbial community. Plant and Soil, doi: 10.1007/s11104-012-1365-6.

57. Oates, L.G., T.C. Balser, R. Jackson, 2012. Subhumid pasture soil microbial communities affected by presence of grazing, but not grazing management. Applied Soil Ecology 59: 20-28

56. Gutknecht, JLM, C. Field, T.C. Balser, 2012. Long-term microbial responses to simulated multiple global changes. Global Change Biology, doi: 10.1111/j.1365-2486.2012.02686.x

55. Liang, C., Read, H.W., Balser, T.C., 2012. GC-based detection of aldonitrile acetate derivatized glucosamine and muramic acid for microbial residue determination in soil samples: analytical protocol and derivative validation. Journal of Visualized Experiments. 63:e3767

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47. Liang, Chao, X. Zhang, L. Wei, H. He, A. Higbee, T. Balser, 2011. Investigation of the molecular ion structure for aldononitrile acetate derivatised muramic acid. Journal of Microbiological Methods 86:224-230.

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38. Ushio, M., Kanehiro Kitayama, Teri C. Balser, 2010. Tree species-mediated spatial patchiness of the composition of microbial community and physicochemical properties in a tropical montane forest, Soil Biology & Biochemistry, doi:10.1016/j.soilbio.2010.05.035

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3. Balser, T. C. 2002. The impact of long-term nitrogen addition on microbial community composition in three Hawaiian forest soils. In Optimizing Nitrogen Management in Food and Energy Production and Environmental Protection. Swets and Zeitlinger B.V., Lisse.J. Galloway, E. Cowling, J. W. Erisman, J. Wisniewski, and C. Jordan (ed.), p. 500-504.
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1. Waldrop, M.W., T.C. Balser and M.K. Firestone, 2000. Linkages between microbial community composition and enzyme activities in soil. Soil Biology and Biochemistry 32, 1837-1846.

Non-technical articles

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 awarded as PI or Co-PI for basic research in soil and microbial ecology. And approximately $2.5 million 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)

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.

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.

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

2009-13 "Soil quality and carbon stabilization in native and invaded Wisconsin wet prairie ecosystems". USDA CSREES-Hatch, $189,000

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

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

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

2007-12 "CAREER: Research and education approaches to integrating microbiology and ecosystem functioning in global change ecology", NSF DEB, Ecosystems. $595,289

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

2007-09 "Role of microbial community structure and forest management practices in carbon storage." USDA-CREES McIntire-Stennis. $75,000

2006-07 "Microscale approaches to macroscale issues in terrestrial ecosystem ecology", Interdisciplinary workshop, NSF DEB and Microbial Biology, $77,000

2006-08 "Evaluating changes in soil carbon cycling in reed canary grass invaded soils", U.S. Department of Energy, $180,000

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. Gulledge, N. Nibbelink, and C. Meyers. NSF-Ecosystems, $688,075

2006-09 "Breaking the stranglehold: Reed canary grass and nutrient cycling in WI wetland soils", with David Bart. USDA CSREES-Hatch, $90,000

2005-07 "Testing controlled environment chambers for NASA". Subcontract with Orbital Technologies, Inc., Madison, WI. $25,000

2005-07 "Does microbial ecophysiological response to environmental change determine carbon sequestration?" National Science Foundation, Division of Environmental Biology, Ecosystems Program. $150,000

2002-05 "Role of microbial community structure and forest management practices in carbon storage", with Joel Pedersen. USDA-CREES McIntire-Stennis. $75,000

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

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

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

1997-98 "Defining soil quality in terms of microbial community structure", with M.K. Firestone. Kearney Foundation for Soil Science Research. $40,000

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

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

2016-17 "Cross-Nation Capacity Building in Science, Technology, Engineering, Mathematics (STEM) Education" Australian National Commission for UNESCO, Co-PI. $13,500

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

2016-17 "Curtin graduates as digital creators: Computational thinking for twenty-first century employability." Curtin Teaching Excellence Funds, Co-PI. ~$15,000

2015-16 "Science and Engineering Innovation Teaching Fellows." Curtin Teaching Excellence Funds, PI. $19,000

2015-16 "Embedding indigenous perspectives in Curtin STEM education." Higher Education Participation and Partnerships Program, PI. $90,000.

2013-15 "Evaluating the PULSE: Assessing the Impacts of the PULSE Program" National Science Foundation EAGER grant, Co-PI. $150,000.

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.

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.

2009-2011 "The N-game: developing a game-based learning experience in environmental studies", Engage Academic Technology Group, UW-Madison. $100,000

2008-11 "Educational partnerships for the bioenergy sustainability thrust", Great Lakes Bioenergy Center, University of Wisconsin, $155,000

2008-09 "Peer Mentoring for Forum on the Environment (ES/SS101)", UW College of Agricultural and Life Sciences Undergraduate Initiative Funds, $8,242

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

2006-07 "Multidisciplinary approaches to integrating microbial analysis and ecosystem-scale research", UW Grad School, $15,000

2006-07 "Improving the Soil Science Senior capstone using peer mentoring", UW College of Agricultural and Life Sciences Undergraduate Initiative Funds, $13,909

2005-06 "Revitalizing Environmental Studies 101, Forum on the Environment", UW College of Agricultural and Life Sciences Undergraduate Initiative Funds, $12,000

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.

Volunteered Research Presentations

- Lead author or co-author on more than 70 volunteered 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)*

"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 August 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-convener "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 State Univ, 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, December 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, May 14, 2004.

"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 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

- 2016-present: 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. 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

Science, Technology and Global Problems (NPSC1002, Curtin University)
Course description and goals: 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. Students completed the following phases of inquiry: 1) develop and pitch an idea; 2) decide on an idea to pursue and form teams for proposal writing; 3) present final proposal; 4) reflect on the experience of research and proposal writing. Primary goal was to have students gain a better understanding of the nature of research. Data collected for publication (in progress) regarding student development of "research literacy" appears to confirm that we met our goal. Course launched with 51 students.

Land and Life: The challenge of Human Existence (CALS SWS2008, Univ. of Florida)
Course description and goals: 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. Students completed three phases for each major topic area: 1) gather and evaluate information about the topic (e.g. read from the text book, look for videos online, and/or interact with the professors); 2) discuss and practice using the information you've gathered (e.g. complete and discuss case studies or other assignments related to each topic); 3) reflect on - and try out - broader applications for the material (e.g. decide what you think is most useful from each unit, and consider ways to apply what you have learned). It was my goal that students will gain a better understanding of how humans use natural resources. Course launched with 39 students.

Humanity's 2050 Challenge – Our Uncertain Future (CALS ALS 4932, Univ. of Florida)
Course description and goals: 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)
Course description and goals: 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))
Course description and goals: 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)
Course description and Balser's role: 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 courses

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, January21, 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 five countries (China, Japan, Germany, Kenya, U.S.) One at present.
- 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 in Balser Lab "Visiting Scholars Program in Ecosystem Microbiology." Program developed in Fall 2002 with intention 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 (8)

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 (neé 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: postdoctoral researcher, University of Oregon.

Devin Wixon (Botany; co-advised with 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 (neé Mentzer) (Soil Science), "Exploring long-term microbial responses to simulated global change." August, 2007. Current status: Assistant 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. Gulledge), 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)

Ecological Society of America (1995 – present)

Higher Education Research and Development Association (2015-present)

International Society of Ecology (2013-present)

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

Editorial Boards. Member of the editorial boards for PeerJ and Nature Sustainability.

Federal agency grant review panels. Regular grant review panelist for U.S. NSF and USDA. In Australia: ARC College of Experts 2018-2020. Review panelist for The Hubert H. Humphrey Fellowship Program (for Fulbright exchange activity sponsored by the U.S. Department of State).

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-convener, 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.

Discussion leader, workshop on "Frontiers in Agroecology", Madison, WI.

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