CURRICULUM VITAE

James Scott Coleman

EDUCATION:

University of Maine, Orono, ME. May 1982. B.S. (with highest distinction). Major: Forestry.

Virginia Polytechnic Institute and State University, Blacksburg, VA. September, 1982- June, 1983. Dept. of Plant Pathology, Physiology and Weed Science.

Yale University, School of Forestry and Environmental Studies New Haven, CT. May, 1985 - M.S.; December, 1985- M.Phil.

Yale University, School of Forestry and Environmental Studies, New Haven, CT. May, 1987 - Ph.D.

Dissertation Title: Relationship of Ozone Exposure and Leaf Ontogeny to Susceptibility of Eastern Cottonwood to Four Pests. Advisors: William H. Smith (Yale University) and Clive G. Jones (Institute of Ecosystem Studies).

Stanford University, Postdoctoral Scholar (with Dr. H.A. Mooney), Department of Biological Sciences, Stanford, CA. June, 1987 - September, 1988.

Harvard University, Postdoctoral Fellow (with Dr. F.A. Bazzaz), Dept. of Organismic and Evolutionary Biology, Cambridge, MA. September, 1988 - August, 1990.

EMPLOYMENT:

Provost and Vice President for Academic Affairs, and Professor of Biological Sciences, **Northern Arizona University**, Flagstaff, AZ August 17, 2015- present

Dean, College of Humanities and Sciences and Professor of Biology, **Virginia Commonwealth University**, Richmond, VA, July 8, 2011 – August 14, 2015

Vice Provost for Research and Professor of Ecology and Evolutionary Biology, **Rice University**, Houston, TX. September 15, 2007 – July 2, 2011.

Vice Chancellor for Research, Director of the Office of Research and Professor of Biological Sciences, **University of Missouri, Columbia**, MO. May 15, 2003 – September 14, 2007. (position title was changed from Vice Provost for Research to Vice Chancellor for Research in 2006)

Vice President for Research and Business Development and Research Professor Earth and Ecosystem Science, **Desert Research Institute**, Reno, NV. January 1, 2000 – April, 2003.

Interim Vice President for Research and Business Development, **Desert Research Institute**, Reno, NV. August 1, 1999 – Dec. 31, 1999.

Project Director, Nevada NSF-EPSCoR, **University and Community College System of Nevada**. October, 1998 – April, 2003.

Executive Director and Research Professor, Biological Sciences Center**, Desert Research Institute**, Reno, NV. July 1, 1997 – July 30, 1999.

Program Officer, Panel on Ecological and Evolutionary Physiology, Division of Integrated Biology and Neuroscience, **National Science Foundation**, Arlington, VA. September, 1995 - August, 1996. Responsible for managing an approximately $10,000,000 budget used for funding research in the ecological and evolutionary physiology program;

dissertation improvement grants; and the NSF/DOE/USDA/NASA joint program in terrestrial ecology and global change.

Associate Professor, Department of Biology, **Syracuse University**, Syracuse, NY 13244. May, 1995 - July 1, 1997.

Assistant Professor, Department of Biology, **Syracuse University**, Syracuse, NY 13244. September, 1990 - May, 1995.

Cary Fellow **(Institute of Ecosystem Studies), Yale University Graduate School**, New Haven, CT. January, 1985 - June, 1987.

ADMINISTRATIVE ACCOMPLISHMENTS and RESPONSIBILITIES:

Provost and Vice President for Academic Affairs and Professor of Biological Sciences, **Northern Arizona University**, Flagstaff, AZ. August 2015 – present

Northern Arizona University (NAU) is one of three public, research, universities in Arizona and is classified as Doctoral, Higher Research Activity by the Carnegie Foundation. NAU is a rapidly growing university that enrolls approximately 30,000 students, approximately 22,000 students attend on the main campus in Flagstaff, with the remainder enrolled in NAU's well regarded online programs or satellite campuses across Arizona. NAU is a truly transformational university- over 45% of the students enrolled in Flagstaff are first generation college students and NAU is nationally recognized for implementing a range of successful programs focused on the success of first generation students. Additionally, NAU is a diverse institution, recognized as one of the top institutions in graduating Native American students and with an enrollment that reflects the demography of Arizona including approximately 21% Hispanic/Latino students. NAU is also recognized for building strong programs in International Education and for including a global learning initiative in its core curriculum. NAU has a vision of being the number one university in the US for Native American students and is recognized as a strong tribal partner. Efforts in this realm include targeted programs such as the Institute for Tribal Environmental Professionals that strengthens the capacity of tribes throughout North America in the management of natural resources, as well as being a lead participant in the NIH funded Partnership for Native American Cancer Prevention.

NAU has a wide range of undergraduate and graduate programs in its Colleges of Arts and Letters; Engineering, Forestry and Natural Sciences; Social and Behavioral Sciences; Health and Human Services; W. Franke College of Business; and Education, as well as a growing Honors program. NAU has an innovative First Year Learning Initiative program that successfully redesigns courses to significantly improve DFW rates and also has a strong e-learning program that has facilitated the adoption of hybrid and blending learning techniques, as well as helping faculty explore pedagogical innovation. NAU is also on the cutting edge in implementing adaptive courseware in introductory courses. There is also a campus-wide focus and integration of disciplines around sustainability. There are also strong programs in the visual arts, performing arts and creative writing, contributing to Flagstaff's rich arts culture. Additionally, in the National Survey of Student Engagement, NAU students report exceptionally high levels of engagement with faculty, and in the number of high impact experiences (capstone courses, undergraduate research, service-learning, study abroad, residential learning communities, etc.) they experience during their time at NAU.

Sponsored project expenditures at NAU were just over $50M in 2015. Ph.D. programs in applied linguistics, forestry, and in ecology are nationally renowned, as is the Doctor of Physical Therapy. NAU is also recognized for strengths in astronomy facilitated by access to several world-class telescope facilities and just launched a new Ph.D. program in that discipline. Additionally, NAU has developed strengths in "big data", particularly in ecological informatics, and also recently launched an interdisciplinary Ph.D. in informatics. Building on strengths in biomechanics, NAU also recently launched an interdisciplinary Ph.D. in bioengineering. There is also strong scholarly and creative work occurring across the Humanities and the Arts, including renowned musicians, writers and scholars that include a recent (2016) recipient of a Guggenheim Fellowship.

As the Chief Academic Officer of the University, I have had, or share responsibility, for academic planning; budgeting, instruction, curriculum development, review and assessment; institutional accreditation; recruitment and retention of faculty and staff; student academic success and retention; allocation and planning of academic space; and management of the University's academic affairs budget. I also work closely with the NAU Faculty Senate and the NAU Chairs Council to ensure a transparent and effective shared governance system. Some accomplishments include:

- Co-led an effort to win funding from the APLU to be in the cutting edge of implementing adaptive courseware in large introductory courses as well as facilitating NAU's participation in the AASCU's "Re-imagining the First Year" project.
- Participating on a team responsible for developing a set of approximately 40 strategies to improve student retention and graduation rates. We are targeting strategies on specific groups of students such as students at risk because of relatively weaker academic performance in high school or during their first year at NAU, students of color, transfer students, online students, first generation students, in addition to broader strategies that will help improve retention of all students. Freshman retention rates have increased more than 1% in my first year at NAU.
- Helped shepherd new Ph.D. programs in Informatics and Bioengineering, in addition to several undergraduate and masters programs through the NAU curricular strategic review process and/or through approval by the Arizona Board of Regents. NAU's curricular review involves two parallel reviews: (1) a process to look at the strategic value of proposed new programs with respect to their alignments with the strategic plan in addition to a careful examination of a business plan. That process is led by the Provost's Academic Leadership Council; (2) an evaluation of the proposed curriculum, learning outcomes, etc. through the curricular review process.
- Worked with Deans and the Vice President of Research to recruit more than 30 tenure track faculty, including several under-represented minorities and also actively negotiated several dual-career couple hires. These included several high profile hires to rapidly build the research capacity in our new Ph.D. programs (informatics, bioengineering, astronomy), including helping successfully negotiate several dual career hires.
- Worked with the NAU President and the Dean of Graduate College to reallocate funds to increase graduate student stipends in order to increase our competitive position and to

help meet our goals for growth in graduate programs. This led to substantial growth in enrollment in several of our Ph.D. programs.

- Reorganized academic advising to a more coordinated model including an ongoing implementation of Civitas – a predictive analytics tool to facilitate student success. We are also in the process of implementing new centralized classroom scheduling software (25 Live), new interactive academic planning tools (Jacks Planner); and transfer articulation tools.
- Working with a task force that is developing a plan to transform NAU's Honors program into an Honors College.
- NAU's freshman enrollment increased by over 400 students from FY 2016 to FY 2017- a growth of approximately 10%. This effort is under the auspices of the Vice President of Enrollment Management and Student Affairs, but as Provost I play a role in managing and planning for the increase, as well has helping in some recruiting efforts.
- Reorganized NAU's University College to ensure a focus on first year student success and successful transition of students into the sophomore year, as well as streamlining its function freeing up resources for reallocation. The reorganization will allow us to redeploy approximately $1,000,000 into other university priorities.
- Implemented the use of the Delaware Study to help benchmark NAU's resource efficiency and productivity against peer institutions.
- Hired a new Executive Director of the NAU Center for International Education and NAU welcomed our largest international class in Fall, 2016 of just under 1,300 international students.
- Co-led the effort to submit an NSF ADVANCE Institutional Transformation proposal in January, 2016 (NAU:BELONG) to improve the campus climate to better promote the success of women in STEM disciplines. The NAU Commission on the Status of Women, awarded the proposal team with their 2016 Outstanding Achievement and Contribution. Award. The proposal was not funded in the first round, but will be resubmitted in Spring, 2017.

Dean and Professor of Biology, College of Humanities and Sciences, **Virginia Commonwealth University (VCU)**, Richmond, VA July, 2011-August, 2015

VCU is one of Virginia's three major research institutions and was formed in 1969 by the merger of the Medical College of Virginia (MCV) with the Richmond Professional Institute (RPI). Since its inception, student enrollment has grown dramatically to over 31,000 making the University the first or second largest in the Commonwealth of Virginia (George Mason University's enrollment is sometimes reported to be larger than VCU's) and VCU has over $240,000,000 of annual sponsored project awards and expenditures putting it in the top 100 research universities in the country in NSF's FY 2012 rankings of total and federal research expenditures. After its inception, the university transitioned from a largely commuter campus at the undergraduate level to a vibrant residential campus similar to that of most major urban research universities. VCU is particularly recognized for having the #1 ranked (US News) public School of the Arts and by having a renowned medical campus, as well as strong professional programs in nursing, allied health, social work and education. The University (and the College) prides itself on its significant engagement with the Richmond community and faculty and students actively engage the local community in a wide array of educational and

research programs (e.g., last year VCU students reported that they contributed 1.1 million service hours to the Richmond Community) . The University is driven by a strategic plan "Quest for Distinction" (www.future.vcu.edu/) that has set detailed metrics for meeting key goals in student success; research; interdisciplinary approaches to human health; community engagement, and stewardship of resources to reach its vision as becoming the premier public, urban, research university.

The College of Humanities and Sciences is the largest unit at VCU in terms of enrollment: there were approximately 14,000 students enrolled in the College when I was dean - Humanities and Sciences taught just under 400,000 credit hours annually- approximately 50% of the total credit hours, and approximately 60% of the undergraduate credit hours taught at VCU. The student body is unusually diverse and the university is truly transformative with approximately 30% of student body as first generation college students and with the proportion of students of color just under 50%. VCU is also recognized for having closed the graduation gap between African American and Caucasian students. During my tenure, Humanities and Sciences had approximately 400 full-time faculty members, over 200 part time faculty members, and approximately 80 full time staff members, and had the largest amount of externally funded research (over $20M in awards in FY 2015) on the Monroe Park Campus at VCU with particular funded research strengths in psychology, chemistry, physics, mathematics and mathematics education, and interdisciplinary environmental and ecological science (with VCU's Rice Center). H&S faculty were the recipients of an $18.1M Center from FDA/NIH to study the health risks of tobacco products in 2014; had one of CDC six centers of excellence in research to prevent school violence; and one of our Physics professors, Puru Jena, was named one of Virginia's 2015 Outstanding Scientists by Governor McAuliffe for his work on material science. The Humanities and Sciences at VCU also has a particularly strong program in English and Creative Writing, with several faculty recognized with major national awards (e.g., Guggenheim Fellowships; Pulitzer Prize winner (deceased in 2015); Lenore Marshall Awards, National Book Award finalists). The College of Humanities and Sciences currently houses two schools (Richard T. Robertson School of Media and Culture: School of World Studies), and 18 additional departments and programs spanning the range of Humanities, Social Sciences and Natural Sciences. Humanities and Sciences is also the administrative unit for five cross-disciplinary Ph.D. programs (Media, Art and Text; Nanoscience and Nanotechnology; Systems Analysis and Modeling; Health Psychology and Chemical Biology) as well as several other doctoral programs, a terminal MFA program and several masters programs. Humanities and Sciences was driven by a strategic plan *Pathways for Transformation* (http://has.vcu.edu/about-us/strategic-plan/) evolving from a process that I led.

As the chief academic and administrative officer of the College, I was responsible for strategic planning, the recruitment and retention of faculty and staff, student enrollment, space, all aspects of delivering and assessing undergraduate and graduate academic programs, management of an approximately $90,000,000 budget (approximately $52M operating), support of research, and alumni relations and fundraising for the College. I also served as the primary advocate at VCU for the liberal arts and sciences, both internally and externally. Some accomplishments include:

- The culture of VCU historically was centered on its strong professional schools in medicine, arts, social work, education, with humanities and sciences playing a more

peripheral role, despite its enrollment representing approximately 50% of the University. A significant accomplishment over my tenure at VCU was that Humanities and Sciences became a much greater part of the University's narrative as it strives to be a premier, public, urban university. This is exemplified by the fact that for the first time, the University identified a "home" building for the Humanities and Sciences and supported an architectural planning study for a new home as a priority on its Master Plan and allocated over $5,000,000 of new permanent funding for faculty hiring after I arrived. I worked hard on communicating the key role that the liberal arts plays in great universities and on the accomplishments of our students, faculty and alumni, and, at least some of the renewed attention to liberal arts and sciences has resulted from my advocacy.

- Led and completed a nine month strategic planning process that integrated quantitative survey research of the unit's faculty and staff (Concept Mapping), large group meetings, a series of more than a dozen small group meetings with 130 members of the faculty and staff, and alumni surveys resulting in a strategic plan titled "pathways for transformation" that articulates the vision, challenges, opportunities, and actions over the next several years to allow the Humanities and Sciences to provide the intellectual core consistent with VCU's goal of being recognized as a premier public, urban research university. The plan created a vision for the unit to provide the steepest slope of the line (or the highest value-added) to our students over the course of their time at VCU and built on the faculty's passion for transforming student lives through education and conducting research that helps to transform fields of study and the human condition. The process we used ensured that the College of Humanities and Sciences would play a central role in meeting the goals and objectives of the University's Strategic Plan "Quest for Distinction" and its five goals: student success; research; human health as an integrating factor; community engagement; and stewardship of resources.
- Implemented several actions to improve the educational and research environment at VCU. Some actions include: active recruiting over 100 new full time faculty positions (and made approximately 60 promotion and tenure recommendations for faculty from the Humanities and Sciences); restructuring the College's research office to better serve faculty in research development; implementing a program review process; developing improved processes for the evaluation of departmental chairs and school directors, as well as new processes in annual faculty evaluation; helped to implement and develop strategies to improve student success through advising, and support that helped lead to a 4% increase in VCU's student retention in my last year, and successfully implemented several unit reorganizations that were requested by the Provost. One of these reorganizations led to a new health science concentration to further facilitate VCU students pursuing degrees in a wide array of health sciences.
- Efforts focused on research infrastructure and faculty hiring led to significant increases in the volume of sponsored research. For example, research funding grew 30% between FY 13 and FY 14 and grew again by an additional 30% between FY 14 and FY 15 to more than $20M.
- Developed a transparent budget and information process in the College such that all units can see the enrollments; credit hours taught; research productivity and budgets for all units in the College. The work we did on budget transparency has allowed our unit to play lead roles in the university's ongoing discussion of new budget models, including a detailed examination of an RCM model.

- Implemented the College of Humanities and Sciences participation in the Delaware Study as a means to benchmark productivity and budgets to peer and aspirant institutions. Also, began the implementation of the College of Humanities and Sciences' participation in Academic Analytics as means to benchmark the research performance of faculty.
- With respect to faculty hiring, more than 100 full time faculty members were hired during my tenure, many with excellent records as teacher-scholars including a Pulitzer Prize winning poet. This included several exceptional senior hires including a Director of the Robertson School of Media and Culture, a distinguished mathematician to lead our Mathematics Department, a Distinguished historian to lead our Humanities Research Center, and distinguished forensic anthropologist to lead our Forensic Science department and a significant number of hires from underrepresented minorities- we hired 17 tenure track faculty in 2014-2015; 10 were under-represented minorities.. We also maintained diversity of faculty partly as a result of my active approach to retaining several of our best faculty who were actively pursued by other universities, in addition to recruiting. Retentions involved more than just salary adjustments but also included working within and outside my unit to create dual career opportunities for couples, working with our VP for Inclusive Excellence to create a mentoring role for a distinguished senior faculty, and working to create professional development pathways.
- Played a significant role in development activities that resulted in the naming of the Richard T. Robertson School of Media and Culture in H&S (currently under board consideration) for one of VCU's most successful graduates and engaged alumni. Additionally, I engaged some of the College's most internationally renowned and high profile graduates, as well as some of Richmond's community leaders to participate in the College's first ever advisory board. Additionally, we raised funds to endow a professorship in Religion and the Arts and raised substantial funds to support or creative writing program. We formed the groundwork to begin a fundraising campaign that will soon begin at VCU. We had a greater than 30% increase in fundraising in 2012-2013 and more than doubled fundraising the following year (2014-2015).
- Developed and implemented the first phase of structured plan to remedy salary compression that resulted from six years of no merit raise pools. The first phase of the plan involved reallocating budgets to support increases for recently promoted Associate Professors who, because of state policy, had not received merit raises in the past six years. This resulted in salary equity adjustments for approximately 10% of the College's faculty.
- Began the development of pathways for entrepreneurial education for students in Humanities and Sciences and raised philanthropic support to create a "Go For It!" scholarship program to allow students to get a subsistence stipend to pursue entrepreneurship training and to start a company- in its first year, the participating student companies raised a total of more than $1,000,000 in investments, grants and sales revenues and created approximately 30 new jobs. I played a significant role in developing university-wide programs aimed at providing such pathways for students to help them gain the confidence and skills to create their own jobs. As part of that effort, I co-developed and co-taught a course title "job creators and risk takers" and actively engaged in helping the University create a certificate program for students in entrepreneurship and in helping to develop plans for a living-learning residence hall focused on innovation. I also engaged in the development international programs, which included partnership

agreements for graduate programs with Sao Paulo University in Brazil and Fudan University in Chemistry.

- Helped to facilitate, and was the administrative PI, on a $2M proposal to the NSF STEP program to expand the success of students from underrepresented minorities in science, technology, engineering and mathematics. The proposal was ranked in the most highly competitive category, but was not funded. But, I believe that VCU continues to push forward this model to increase the success of under-represented minorities, and all students, in STEM courses.
- Worked with faculty to create an interdisciplinary Humanities Research Center and hired and recruited an internationally renowned scholar to lead its development. This center has significantly affected the perception of humanities scholarship on campus and has seeded several interdisciplinary humanities research efforts.
- Worked with the Richmond Public Schools to implement VCU-RPS partnership to participate in Yale University's National Teacher's Initiative. We committed to a planning process. Unfortunately the implementation was delayed with the appointment of a new Superintendent to the Richmond Public Schools, but VCU maintains a strong K-12 partnership in the Yale Initiative.
- Co-chaired the search committee that led to the recruitment of a female, National Academy of Engineering member (Barbara Boyan) as Dean of the VCU School of Engineering. Co-chaired the search committee recruiting a new Dean for the VCU Honors College, and Chaired the search committee bringing an outstanding development professional to become the Associate Director of development with responsibility for leading the campaign. I led a University task force regarding our human resources structure of teaching/research and administrative/professional employees, and I was the dean representative on the University Budget Committee.
- Worked with a group of students to create the College of Humanities and Sciences first college wide student leadership council to advise the Dean's Office, which continues to thrive
- Provided leadership that helped the College continue to offer the majority of service-learning, study abroad, and sustainability related coursework at VCU, as well as providing over 90% of the University's tier II (out of three tiers) core curriculum.
- I was evaluated by the Provost each year; one component of the evaluation included a 360^{o} survey. Approximately 200 individuals filled out that survey in 2014-2015, and 90% of those individuals who felt they could rate me on my overall performance agreed with the statement that I had a high level of performance.

Vice Provost for Research and Professor of Ecology and Evolutionary Biology, **Rice University,** Houston, TX. September 15, 2007 – July 2, 2011.

As the Vice Provost for Research, I was given the responsibility for the Office of Sponsored Research Office of Technology Transfer and the Office of Animal Resources, and partial responsibility for overseeing Rice's nationally renowned entrepreneurship center, The Rice Alliance. I was also given the task of developing and growing a first-class research infrastructure at Rice. During my time at Rice, I became responsible for several of Rice interdisciplinary units including the BioSciences Research Collaborative ($300M, multi-institutional, multidisciplinary, life science building); Smalley Institute for Nanoscale Science and Technology, Rice 360^{o}-

Institute for Global Health Technologies; Rice Building Institute; Institute for Sustainable and Applied Infodynamics (with NTU in Singapore) and the Rice Quantum Institute including its oversight of Rice's Applied Physics Graduate program. I also played a significant role in the opening of two major science facilities.

- Developed a strategic plan to provide infrastructural support to faculty to grow Rice's research profile and stature. Rice's sponsored project awards grew approximately 67% during my time at Rice, while the volume of proposal submissions (in dollars) more than doubled. Industrial sponsored research grew nearly four-fold during my time at Rice. Rice's federal research expenditures grew approximately 64% (from $67M to $110M) between 2006 and 2011 according to NSF rankings. Common technology transfer data bases indicated that during my tenure, Rice had one of top few highest rates of invention disclosures and start-up companies per dollar of research among major research universities.
- Implemented (with the Director of Government Relations and Vice President for Public Affairs) a transparent and rigorous process to prioritize Rice's federal research initiatives and to work closely with the Vice President for Public Affairs in communicating these initiatives to our Congressional delegation and to federal agencies.
- Played a significant supporting role in the receipt of a $3,000,000 gift from the Virginia and L.E. Simmons Family Foundation to foster research collaborations among Rice, Texas Children's Hospital and the Methodist Hospital Research Institute, and I played the lead role in implementing this effort including defining the program, advertising the program to faculty, developing electronic systems for submission and review of proposals, implementing the review process, awarding the grants, and engaging and stewarding the donor.
- I co-chaired a joint Rice-Baylor College of Medicine committee charged with examining ways to maximize academic benefits of a possible coming together of Rice University and the Baylor College of Medicine. I co-Chaired Rice's Bioscience and Human Health task force aimed at developing a strategic plan for Rice to develop a preeminent niche in this area, which formed a basis of major recruitments and research success at Rice after I left.
- Successfully engaged the Rice's Board of Trustees on the importance of Rice's research to realizing Rice's Vision for the 2nd Century.
- Built relationships with the economic development community of Houston in order to help achieve Rice's vision for engaging with Houston. I am also helped develop a coherent economic development strategy by integrating the missions and activities of the Office of Technology Transfer and The Rice Alliance, and working closely with the Rice Office of Corporate and Foundation Relations.
- I collaborated with the Humanities Research Center at Rice to create a Humanities Innovation Fund to seed research across the humanities and humanistic social sciences.
- I co-led the planning effort for the implementation of an electronic grants administration and routing system.

Vice Chancellor for Research, Director of the Office of Research and Professor of Biological Sciences, **University of Missouri, Columbia**, MO. May , 2003 – September, 2007 (note that position was changed from Vice Provost to Vice Chancellor in 2006).

As the Vice Chancellor for Research, I was responsible for overseeing all aspects of MU's research enterprise including oversight of approximately a $30,000,000 general operating budget for the Office of Research, oversight of an overall budget for units under my direction of approximately $70,000,000 (that includes research and service revenues in addition to general operating funds), and oversight of the entire $250,000,000 research enterprise at MU. Some of these accomplishments include:

- Research expenditures grew 25% during my time at MU. The annual rate of invention disclosures, deal signing, and patent filings all doubled during my tenure at MU, with annual licensing income increasing from $2M to over $6M (with a high of $10M due to a one-time milestone payment).
- Led the process of designing operating models and opening the interdisciplinary Christopher S. Bond Life Sciences Center (LSC), including the recruitment of an internationally recognized Director, and then his successor, development of a self-sustainable budget strategy that allowed for maximum interdisciplinary collaboration between the LSC and campus units, the merger of this new program with the existing campus molecular biology program, and working with the new Director and campus Deans to ensure that the LSC met the strategic goals we set for it during a long strategic planning process that started well before I joined MU.
- Played a major role in the development of two significant new interdisciplinary centers: (1) Institute for Nano and Molecular Medicine (and the hiring of a National Academy member to lead the center) - this included the construction of a new research facility; and (2) Thompson Center for Autism and Neurodevelopmental Disorders.
- Successfully communicated the importance and success of MU's research enterprise, and how the success of the research enterprise connected to all the other academic missions of the university, to both internal audiences (faculty, students, staff, Board of Curators) and external audiences (Missouri Governor's Office and Missouri's State Legislature, local chambers of commerce, Rotary clubs, business leaders, and community groups). I also interacted extensively with the media in Missouri and I also successfully communicated MU's positions on science policy issues such as stem cell research, as well as working with our legislative delegation to educate them on various science policy issues.
- Significantly improved several aspects of MU's applied research infrastructure including: (1) working with the University of Missouri System Vice President to reorganize the way MU manages intellectual property and support faculty entrepreneurship that led to a doubling of MU's invention disclosures and a ten-fold increase in our deal flow; and (2) working with the Columbia, MO community I played a significant role in developing plans and funding for a life science business incubator in Columbia including playing a significant role in securing a $2,500,000 grant from the Department of Commerce and a multi-million dollar gift from the Monsanto Corporation to help cover construction costs
- Led efforts to develop an infrastructure strategic plan to support MU's planned growth in biomedical research requiring facilities for housing and caring for animals, and for plant growth facilities needed to maintain MU's stature as one of the leading research plant biology research universities in the United States.
- Worked closely with the UM System Director of Government Relations and developed a process for creating priorities for MU with the Missouri delegation.
- Worked with Deans and Faculty to create new budget models to support research infrastructure. This included a new plan to self-sustain the costs of compliance in the area

of clinical trials, and the development and implementation of a 'grant incentive plan' that allowed for salary incentives to faculty that are successful in securing extramural funding.

- Contributed to campus diversity by using my "bully pulpit", by being a significant contributor to an NSF award to train undergraduate minority students in environmental biology, and by energizing a team of female scientists that received an NSF ADVANCE grant to promote the development of female faculty in science, math and engineering areas.
- Chaired a committee charged with encouraging interdisciplinary behavior including changes in MU's tenure process. That Committee's report was enthusiastically accepted by the campus strategic planning and implementation had begun before I left the institution.
- Worked with the Vice Provost for Undergraduate Studies and reallocated funds from the Office of Research budget to create a campus-wide Office of Undergraduate Research to better communicate and support undergraduate research across campus. This led to a significant increase in the number of students supported in research opportunities and in MU's ability to showcase the pivotal role that research plays in undergraduate education across the entire campus including arts and humanities.
- Acted as the Provost's representative to the campus-wide promotion and tenure committee that evaluated candidates across all the disciplines represented in MU's 12 schools and colleges; evaluated comments from outside reviewers; evaluated decisions by departments, schools and colleges; and then wrote full reviews and made recommendations on all campus faculty eligible for tenure and promotion. These diverse disciplines ranged from journalism to basic science and clinical faculty in medicine and veterinary medicine, from agriculture to law, from education to the traditional full range of arts and sciences.
- Played a significant role with many others in securing the recruitment of the world's foremost boron chemist. I also recruited a first class scientist to direct MU's flagship life sciences research center, a first class scientist to direct MU's Dalton Cardiovascular Research Center, a person who positively transformed MU's technology commercialization function, a director of MU's interdisciplinary center for aging, and a Director of a Center for Arts and Humanities—dramatically increasing the campus-wide research presence and infrastructure in this area
- Actively participated as a member of the AAU Senior Research Officers group.
- Served as an active member of the steering committee for MU's successful $1,000,000,000 fundraising campaign including playing a major role in implementing and stewarding an $8M gift to create the Thompson Center for Autism and Neurodevelopment Disorders.

Vice President for Research and Business Development, **Desert Research Institute**, Reno, NV. January 1, 2000 – April, 2003 and Director of Biological Sciences Research Center, Desert Research Institute (8/97-12/99).

I was responsible for: (1) creating an effective office of research and business development; (2) designing and implementing interdisciplinary research programs; (3) developing new processes to strategically invest and track institutional resources to build research programs; (4) helping to negotiate faculty start-up packages; (5) articulating the vision of DRI's research programs to

Nevada's federal and state legislative representatives, the UCCSN Board of Regents, DRI's fundraising foundation, groups and individuals involved in promoting the development of knowledge-based economy in Nevada, and members of the Reno and Las Vegas community; (6) designing a technology transfer program essentially from scratch; (7) overseeing and developing several areas relating to research compliance; (8) working with the chief research officers of UNR and UNLV to advocate for and develop statewide research and graduate programs; (9) participating (albeit in a relatively minimal way), as a faculty member in UNR's Graduate Program in Ecology, Evolution and Conservation Biology; and (10) I directed Nevada's National Science Foundation EPSCoR Program.

- DRI's President, Dr. Steve Wells, asked me to assume the Vice President for Research (VPR) post at a time when DRI faculty were questioning whether the position should exist. I worked very hard to redefine DRI's VPR position so that it focused more intensely on advocating for and facilitating faculty research. Positive results of that effort were recognized in a report in 2001 by DRI's National Science Advisory Committee (an outside group of experts led by the American Association for the Advancement of Science who reviewed DRI's science and operations). In its report the committee of nine internationally recognized scientists and science administrators wrote "*The high level of mutual respect between DRI faculty and DRI leadership, and the efforts made by DRI leadership to be visible and accessible, contribute significantly to the vertical flow of information at DRI. The present leadership at DRI is both dynamic and visionary. Their accomplishments over the last two years were generally recognized and appreciated by the faculty."* The notion of mutual respect between DRI faculty and senior administrators (in central administration) was much more obscure when I took the position.
- Demonstrated the ability to help design and build interdisciplinary research programs that also required me to co-lead significant institutional change (DRI did a major institutional reorganization in 2000 going from five academic units [Centers], to three, with the creation of two new cross-cutting units) with DRI's President. Furthermore, the programs that we built were aimed at linking basic (curiosity-driven) and applied (problem solving) science.
- Developed and implemented a strategic plan to make the institution's investment into an internationally unique facility (EcoCELLs –Ecologically Controlled Lysimeter Laboratories) pay off. We defined our goal as getting major NSF competitive funding and proving that the concept of the EcoCELLs could significantly advance global change science – the ultimate recognition we aimed for at the time was to get a paper based on research in the EcoCELLs on the cover of *Nature*. I led the implementation of a plan that involved accessing support from NSF, EPA EPSCoR, and the Mellon Foundation; redefining the research focus of the EcoCELLs from physiological ecology to ecosystem ecology; strategically drawing on an external advisory group, and the hiring and collaboration with great people, that led to major NSF funding ($3,000,000 from NSF's IRCEB program) and ultimately, on September 18, 2008, to a picture of the EcoCELLs on the cover of *Nature*.
- Successfully communicated the important role that DRI's activities play in the State of Nevada and nationally to several stakeholder groups including the Board of Curators, local and statewide politicians and community leaders and to Nevada's Congressional delegation. I put in place a very successful process for DRI's interaction with Nevada's Congressional delegation that has led to multi-million dollars of federal research funding.

- Faculty I hired as assistant professors while Director of the Biological Sciences Research Center became faculty leaders of the institution. As Vice President, I developed an institution-wide process with the Division Directors (Deans in DRI's structure) to rank research areas for campus-wide hires in each year including development of a process for creating annual institutional start-up budgets which greatly improved institutional hiring and the institutional budget process.
- As Nevada's National Science Foundation (NSF) EPSCoR director, I led the process of developing and implementing strategic plans to invest millions of dollars to improve statewide research capacity (across the Nevada University System), including educational outreach in science and engineering to the K-12 community. During my tenure, I was told by NSF that Nevada was one of the best of more than 20 statewide programs, because of our successful strategic planning. In fact, Nevada experienced the second largest increase in research performance at the National Science Foundation from its entry into the EPSCoR program of any EPSCoR state up until the time I left. I also played a role in bringing more funding to the EPSCoR community by my service on the Board of the EPSCoR Coalition.

Program Officer, Panel on Ecological and Evolutionary Physiology, Division of Integrated Biology and Neuroscience, National Science Foundation, Arlington, VA. September, 1995 - August, 1996.

This experience taught me a great deal about strategically planning research investments, managing and assessment of large research programs, and in running peer review processes. I was responsible for managing the investments into research of an annual budget of over $10,000,000 and the entire review process for the NSF program "Ecological and Evolutionary Physiology" and I co-managed the NSF/Department of Energy/NASA/USDA Program in "Terrestrial Ecology and Global Change". I was also responsible for articulating the vision for these programs to the higher administration at NSF and to the research community, as well as working to develop new, interdisciplinary programs. Furthermore, I was responsible for concisely defending and supporting my funding recommendations to the upper administration at NSF, as well as working with principal investigators who were not successful in grant competitions in a manner that enabled them to increase their competitiveness in future competitions.

PROFESSIONAL ORGANIZATIONS AND MEMBERSHIPS: Ecological Society of America; American Association for the Advancement of Science; AAU Senior Research Officers (2003-2011); Council of Colleges of Arts and Sciences (2011-2015)

RESEARCH INTERESTS

My most recent focus has been the ecological effects of environmental change. Past research has focused on the causes and consequences of developmental, ecological and evolutionary variation in physiological, morphological and biochemical responses of plants to single and multiple abiotic stresses; whether variation in plant responses to environmental variables results from optimization of costs and benefits; and how variation in stress responses affects the interaction of plants with other organisms (particularly insect herbivores and fungal pathogens). My laboratory also examined the physiological and evolutionary ecology of low molecular weight plant heat

shock proteins (hsps), and we were the first lab to demonstrate a physiological function of these hsps in protecting photosynthesis during heat stress.

GRANTS (PI or Co-PI on approximately $40,000,000 in grants and cooperative agreements)

Mary Flagler Cary Charitable Trust Grant (1986).

NASA Graduate Student Fellowship in Global Change Research ($22,000/yr for three years 9/1/92-9/1/95) to my graduate student, Brian Wilsey. I was the co-principal investigator with Dr. Sam McNaughton.

National Science Foundation, Ecological and Evolutionary Physiology Panel: Responses of plants to acute and chronic heat stress in a high CO_2 environment: Linking molecular biology with physiological ecology (collaborative research with Richard Hallberg, Syracuse University), $190,000 (9/15/92 - 9/15/95).

National Science Foundation, Division of Integrated Biology and Neuroscience, Young Investigator Award, $250,000 (7/93-7/99).

Andrew W. Mellon Foundation: Plant responses to stress: integrating molecular, developmental, physiological and ecological approaches. $125,000 (7/93-7/99).

National Science Foundation, Ecological and Evolutionary Physiology Panel: Testing optimal partitioning and plant strategy theories: do conclusions differ when functional adjustments are distinguished from ontogenetic drift? $140,000 (7/94 -7/98). Collaborative research with Dr. Kelly McConnaughay, Bradley University.

National Science Foundation, Ecological and Evolutionary Physiology Panel: Dissertation Improvement: Nitrogen-plant-insect interactions: Integrating via a net effects approach. $6,890 (1/95-12/95). Collaborative research with D. Alexander Wait and Clive G. Jones.

Department of Energy, EPSCoR: The Nevada Desert FACE facility: Responses of a desert ecosystem to long-term elevated atmospheric carbon dioxide. $700,000 (9/97-8/00). Collaborative research with J. Seemann (PI), S. Smith and R. Nowak.

Andrew W. Mellon Foundation (and Nevada State Match): Exploring the sensitivity of different carbon and nitrogen fluxes to variation in the timing of an ecosystem perturbation: The use of EcoCELL technology for developing scaling strategies in ecosystem research. $537,126 (1/98 - 1/01). Collaborative research with R. D. Evans, W. Cheng, J. Arnone, Y. Luo and D. Johnson.

United States Department of Agriculture, CRSEES: UV-B Microclimate of High-Altitude Plant Communities. $23,115 (9/98-9/99 with $23,115 match). Collaborative Research with Melanie Wetzel (PI) and Yiqi Luo.

National Science Foundation. Constructing a long-term ecological research program at the NTS: Building on past EPSCoR success to create a scientific center of excellence in Nevada. $500,000 (5/98-5/00). Collaborative Research with S. Smith and R. Nowak.

Interagency (NSF/DOE/USDA/NASA/NOAA) Program for Terrestrial Ecology and Global Change. Effects of elevated CO_2 on a Mojave desert ecosystem. $1,300,000 (9/1/98 - 8/30/01, award was made by NSF). Collaborative research with Stan Smith (PI), Jeff Seemann, R. Dave Evans, Brandon Moore, and Weixin Cheng.

Environmental Protection Agency, Nevada EPSCoR. Determining the role of plants and soils in the biogeochemical cycling of mercury on an ecosystem level. $400,000. (5/1/99 - 5/1/01). Collaborative research with Mae Gustin (PI), Dale Johnson and Steve Lindburgh.

National Science Foundation, EPSCoR. Research infrastructure for Nevada's growth: Targeting research with uniqueness and excellence (RING-TRUE). 6/99 – 7/02. $3,000,000 (with an additional $4,100,000 match from the State of Nevada and "in-kind" match from UNR, UNLV and DRI for a total award of $7.1 million).

Department of Energy, Terrestrial Carbon Process. Biotic processes regulating the carbon balance of desert ecosystems. 9/00-8/03. $2,300,000. Collaborative Research with Jeff Seemann (PI), Stan Smith, Bob Nowak and Lynn Fenstermaker.

National Science Foundation, EPSCoR. Research infrastructure for Nevada's growth: Targeting research with uniqueness and excellence II (RING-TRUE II). 8/02 – 8/05. $9,000,000 (with an additional $4,500,000 match from the State of Nevada).

National Institutes of Health, National Center for Research Resources. eIRB: Online Education and Quality Assurance. (Administrative PI – with Office of Research IRB and computing Directors) 9/03 – 8/04. $100,000.

National Science Foundation, Partnerships for Innovation. Alliance for Collaborative Research in Alternative Fuel Technology. (Administrative PI; Peter Pfeifer scientific PI) 10/04 – 9/07. $591,637.

National Institutes of Health, National Center for Research Resources. National Swine Research and Resource Center (Administrative PI: science driven by Randy Prather and Lela Riley). 9/03 – 9/08. $2,848,226.

Economic Development Administration (US Department of Commerce), Life Sciences Incubator, (PI, co-PI is Jake Halliday). 5/05 – 5/09. $2,500,000

National Institutes of Health, National Institute for Allergies and Infectious Diseases, Regional Biocontainment Laboratory (Administrative PI; scientific PIs, George Stewart, Kim Wise and Lela Riley), $13,400,000 – construction beginning in Spring, 2007 to be completed by 2008. (PI transferred to Neil Olsen when I left Missouri).

Virginia and L.E. Simmons Family Foundation, Collaborative Research Fund (Administrative PI: this is a gift to Rice to fund collaborative research seed grants between Rice University, Texas Children's Hospital and The Methodist Hospital Research Institute). $3,000,000. 9/08 – 8/13

Health Resources and Services Administration, Research Equipment for Rice University's Collaborative Research Center (PI), $355,037. 06/01/08 - 09/30/10

Health Resources and Services Administration Research, Equipment for Rice University's BioScience Research Collaborative (PI), $ $377,190. 08/01/09 - 07/31/11

Health Resources and Services Administration Research, Equipment for Rice University's BioScience Research Collaborative (PI), $ $445,000. 08/01/10 - 07/31/13

National Center for Research Resources, NIH, Computational Biology Cluster (Administrative PI; Jan Odegard and Moshe Vardi scientific leadership), $1,635,302 08/12/2010 – 08/11/2011

APLU, Accelerating Adoption of Adaptive Courseware at Public Research Universities-Executive Sponsor (project leads are Pauline Entin and Don Carter), $575,000.

GRANTS to be Resubmitted
National Science Foundation, NAU-BELONG- ADVACE Institutional Transformation. Co-PI (Maribeth Watwood, PI), $2,365,082. This submission was not funded, but we will resubmit in the next round.

ACADEMIC RECOGNITION:
NAU Commission on the Status of Women, 2016 Outstanding Achievement and Contribution. Award (on a team that received the award.)
Outstanding Administrator, 1998-1999, UCCSN Board of Regents
NSF Young Investigator Award. 1993-1998
William W. Wasserstrom Prize for excellence in graduate education in the College of Arts and Sciences, Syracuse University 1995-1996 Academic Year

PUBLICATIONS IN PRINT (over 6,300 citations; H-index of 44 [data from Google Scholar] as of August, 2016):

1. Murdoch, C.W., J.S. Coleman and R.J. Campana. 1983. Bark cracks associated with injection wounds in elm. *Journal of Arboriculture* 9: 61-64. (2 citations)

2. Coleman, J.S., C.W. Murdoch, R.J. Campana and W.H. Smith. 1985. Investigations on the decay resistance of elm wetwood. *Canadian Journal of Plant Pathology* 7: 151-154. (5 citations)

3. Coleman, J.S. 1986. Leaf development and leaf stress: increased susceptibility associated with sink-source transition. *Tree Physiology* 2: 289-299. (60 citations)

4. Coleman, J.S., C.G. Jones and W.H. Smith. 1987. The effect of ozone on cottonwood - leaf rust interactions: independence of abiotic stress, genotype and leaf ontogeny. *Canadian Journal of Botany* 65: 949-953. (33 citations)

5. Jones, C.G. and J.S. Coleman. 1988. Leaf disk size and insect preference: implications for assays and studies on induction of plant defense. *Entomologia Experimentalis et Applicata* 47: 167-172. (21 citations)

6. Jones, C.G. and J.S. Coleman. 1988. Plant stress and insect behavior: Cottonwood, ozone and the feeding and oviposition preference of a beetle. *Oecologia* 76: 51-56. (80 citations)

7. Coleman, J.S. and C.G. Jones. 1988. Plant stress and insect performance: Cottonwood, ozone and a leaf beetle. *Oecologia* 76: 57-61. (63 citations)

8. Coleman, J.S. and C.G. Jones. 1988. Acute ozone stress on eastern cottonwood (*Populus deltoides* Bartr.) and the pest potential of the aphid, *Chaitophorus populicola* Thomas (Homoptera:Aphididae). *Environmental Entomology* 17: 207- 212. (47 citations)

9. Coleman, J.S., C.G. Jones and W.H. Smith. 1988. Interactions between an acute ozone dose, eastern cottonwood, and *Marssonina* leaf spot: implications for pathogen community dynamics. *Canadian Journal of Botany* 66: 863-868. (22 citations)

10. Jones, C.G. and J.S. Coleman. 1989. Biochemical indicators of air pollution effects in trees: Unambiguous signals based on secondary metabolism and nitrogen in fast-growing species? In: National Research Council. *Biologic Markers of Air Pollution Stress and Damage in Forests*. National Academy Press, Washington, D.C. pp. 261-273. (18 citations)

11. Coleman, J.S., H.A. Mooney and J.N. Gorham. 1989. Effects of multiple stresses on radish growth and resource allocation. I. Responses of wild radish plants to a combination of SO_2 exposure and decreasing nitrate availability. *Oecologia* 81: 124-131. (22 citations)

12. Coleman, J.S., H.A. Mooney and W.E. Winner. 1990. Anthropogenic stress and natural selection: Variability in radish biomass accumulation increases with increasing SO_2 dose. *Canadian Journal of Botany* 68: 102-106. (13 citations)

13. Bazzaz, F.A., J.S. Coleman and S.R. Morse. 1990. The responses of seven major co-occurring trees of the northeastern United States to CO_2. *Canadian Journal of Forest Research* 20: 1479-1484. (178 citations)

14. Winner,W.E., J.S. Coleman, C. Gillepsie, H.A. Mooney and E.J. Pell. 1991. Consequences of evolving resistance to air pollutants. In: Taylor, G.E. Jr. and L. Pitelka (eds.). *Ecological Genetics and Air Pollution.* Springer-Verlag, Berlin. pp. 177-202. (21 citations)

15. Jones, C.G. and J.S. Coleman. 1991. Plant stress and insect herbivory: Toward an integrated perspective. In: H.A. Mooney, W.E. Winner and E.J. Pell (eds.) *Integrated Responses of Plants to Environmental Stress*. Academic Press, NY. pp. 249-282. (122 citations)

16. Coleman, J.S. and C.G. Jones. 1991. A phytocentric perspective of phytochemical induction by herbivores. In: D. Tallamy and M. Raupp (eds.). *Phytochemical Induction by Herbivores*. J. Wiley and Sons. pp. 3-45. (97 citations)

17. Coleman, J.S., L. Rochefort, F.A. Bazzaz, and F.I. Woodward. 1991. Effects of CO_2 on plant performance, plant nitrogen status, and the susceptibility of plants to an acute increase in temperature. *Plant, Cell and Environment* 14: 667-674. (67 citations)

18. Chu, C.C., J.S. Coleman and H.A. Mooney. 1992. Examining the controls on the partitioning of biomass between roots and shoots: effects of elevated levels of CO_2 on growth and resource use of California coastal wild radish. *Oecologia* 89: 580-587. (67 citations)

19. Ackerly, D.D., J.S. Coleman, S.R. Morse and F.A. Bazzaz. 1992. Combined effects of temperature and elevated CO_2 on morphogenetic processes in two annual plant species. *Ecology* 73: 1260-1269. (77 citations)

20. Coleman, J.S. and F.A. Bazzaz. 1992. Interacting effects of elevated CO_2 and temperature on growth and resource use of co-occurring annual plants. *Ecology* 73: 1244-1259. (165 citations)

21. Coleman, J.S., C.G. Jones, and V.A. Krischik. 1992. Phytocentric and exploiter perspectives of phytopathology. *Advances in Plant Pathology* 8: 149-195. (12 citations)

22. Jones, C.G., R.F. Hopper, J.S. Coleman, and V.A. Krischik. 1993. Plant vasculature controls the distribution of systemically induced defense against an herbivore. *Oecologia* 93: 452-456. (104 citations)

23. Coleman, J.S., K.D.M. McConnaughay, and F.A. Bazzaz. 1993. Elevated CO_2 and plant nitrogen-use: Is reduced tissue nitrogen concentration size-dependent? *Oecologia*.93: 195-200. (210 citations)

24. Coleman, J.S., K.D. M. McConnaughay and D.D. Ackerly. 1994. Interpreting phenotypic variation in plants. *Trends in Ecology and Evolution* 9: 187-191. (426 citations)

25. Jones, C.G., J.S. Coleman, and S. Findlay. 1994. Effects of ozone on interactions among plants, consumers, and decomposers. In R. Alscher (ed.). *Plant Responses to the Gaseous Environment*. Chapman and Hall, London. pp. 339-363. (10 citations)

26. Wilsey, B.J., S.J. McNaughton and J.S. Coleman. 1994. Will increases in atmospheric CO_2 affect regrowth following grazing in grasses from tropical grasslands? A test with *Sporobolus kentrophyllus*. *Oecologia* 99: 141-144. (29 citations)

27. Coleman, J.S. and A.S. Leonard. 1995. Why it matters where on a leaf a folivore feeds. *Oecologia* 101: 324-328. (28 citations)

28. Coleman, J.S., S.A. Heckathorn and R.L. Hallberg. 1995. Heat shock proteins and thermotolerance: Linking ecological and molecular perspectives. *Trends in Ecology and Evolution* 10: 305-306. (98 citations)

29. Coleman, J.S. and K.D.M McConnaughay. 1995. A non-functional interpretation of a classical optimal partitioning example. *Functional Ecology* 9: 951-954. (63 citations)

30. Hartvigsen, G., D.A. Wait, and J.S. Coleman. 1995. Tri-trophic interactions as influenced by resource availability: Predator effects on plant performance depend on resource level. *Oikos* 74: 463-468. (54 citations)

31. Gedroc, J.J., K.D.M. McConnaughay, and J.S. Coleman. 1996. Plasticity in root/shoot partitioning: optimal, ontogenetic, or both? *Functional Ecology* 10: 44-50. (336 citations)

32. Heckathorn, S.A., G.J. Polgreen, J.S. Coleman and R.L. Hallberg. 1996. Nitrogen availability alters the accumulation of stress-induced proteins in plants. *Oecologia* 105: 413-418. (74 citations)

33. Heckathorn, S.A., G.J. Polgreen, J.S. Coleman and R.L. Hallberg. 1996. Influence of nitrogen and development on the dynamics of rubisco and pepcase content in response to heat stress. *International Journal of Plant Sciences* 157: 546-553. (26 citations)

34. Coleman, J.S. and K. Schneider. 1996. Evidence suggesting that ABA may not regulate changes in growth and biomass partitioning in response to low soil resource availability. *Oecologia* 106: 273-278. (15 citations)

35. McConnaughay, K.D.M. and J.S. Coleman. 1996. A tale of two universities: A PUI (predominantly undergraduate institution)/research institution collaboration at work. *Council on Undergraduate Research Quarterly* (Dec. 1996); 68-70.

36. Heckathorn, S.A., J.S. Coleman and R.L. Hallberg. 1998. Recovery of net CO_2 assimilation after heat stress is correlated with recovery of levels of oxygen evolving-complex proteins in *Zea mays* L. *Photosynthetica*: 34: 13-20. (25 citations)

37. Wilsey, B.J., J.S. Coleman and S.J. McNaughton. 1997. Effects of defoliation and elevated CO_2 on grasses: a comparative ecosystem approach. *Ecological Applications*: 7: 844-853. (52 citations)

38. Mabry, C.M., M. Jasienski, J.S. Coleman and F.A. Bazzaz. 1997. Genotypic variation in *Polygonum pensylvanicum*: nutrient effects on plant growth and aphid infestation. *Canadian Journal of Botany* 75: 546-551. (7 citations)

39. Downs, C., S.A. Heckathorn, J.S. Coleman and J. Bryan. 1998. The methionine-rich low-molecular-weight chloroplast heat shock protein: evolutionary conservation and accumulation in relation to thermotolerance. *American Journal of Botany* 85: 175-183. (70 citations)

40. Heckathorn, S.A., C.A. Downs, T.D. Sharkey and J.S. Coleman. 1998. A small chloroplast heat-shock protein protects photosystem II during heat stress. *Plant Physiology* 116: 439-444. (278 citations)

41. Heckathorn, S.A., C.A. Downs and J.S. Coleman. 1998. Nuclear-encoded chloroplast proteins accumulate in the cytosol during severe heat stress. *International Journal of Plant Sciences*. 159: 39-45. (14 citations)

42. Heckathorn, S.A., S.J. McNaughton and J.S. Coleman. 1999. C_4 photosynthesis and herbivory. In: R. Sage and R. Monson (eds). *The biology of C_4 photosynthesis*. Academic Press. San Diego, pages 285-312. (38 citations)

43. McConnaughay, K.D.M. and J.S. Coleman. 1998. Can plants track changes in nutrient availability via changes in biomass partitioning? *Plant and Soil* 202: 201-209. (43 citations)

44. Wait, D.A., C.G. Jones, J.S. Coleman and M. Schaedle. 1998. Effects of nitrogen fertilization on leaf chemistry and beetle feeding are mediated by changes in leaf development. *Oikos*: 82: 502-514. (51 citations)

45. Hamilton, E.W. III, M.S. Giovannini, S.J. Moses, J.S. Coleman, and S.J. McNaughton. 1998. Biomass and mineral element responses of a Serengeti short grass species to nitrogen supply and defoliation: Compensation requires a critical [N]. *Oecologia* 116: 407-418. (75 citations)

46. Huxman, T.E., E.P. Hammerlynk, S.D. Smith, D.N. Jordan, S.F. Zitzer, R.S. Nowak, J.S. Coleman and J.R. Seemann. 1999. Photosynthetic down-regulation in *Larrea tridentata* exposed to elevated atmospheric CO_2: Interaction with drought under glasshouse and field (FACE) exposure. *Plant, Cell and Environment* 21: 1153-1161. (76 citations)

47. Downs, C.A., J.S. Coleman, and S.A. Heckathorn. 1999. The chloroplast 22-Ku heat-shock protein: A lumenal protein that associates with the oxygen evolving complex and protects photosystem II during heat stress. *Journal of Plant Physiology* 155: 477-487. (45 citations)

48. McConnaughay, K.D.M. and J.S. Coleman. 1999. Biomass allocation in plants: ontogeny or optimality? A test along three resource gradients. *Ecology* 80: 2581-2593. (455 citations)

49. Jordan, D.N., S.F. Zitzer, G.R. Hendrey, K.F. Lewin, R.S. Nowak, S.D. Smith, J.S. Coleman and J.R. Seemann. 1999. Biotic, abiotic and performance aspects of the Nevada Desert Free-Air CO_2 Enrichment (FACE) facility. *Global Change Biology* 5*:* 659-668. (101 citations)

49. Heckathorn, S.A., C.A. Downs, and J.S. Coleman. 1999. Small heat shock proteins protect electron transport in chloroplasts and mitochondria during stress. *American Zoologist* 39: 865-876. (43 citations)

50. Wells, S.G., J.S. Coleman, J.N. Crowley and K.W. Hunter. 1999. Cooperative efforts around Lake Tahoe (Correspondence, not peer-reviewed). *Nature* 402: 348.

51. Cheng, W., D. Sims, Y. Luo, D. Johnson, T. Ball, and J.S. Coleman. 2000. Demonstration of complete carbon budgeting in plant-soil mesocosms under elevated CO_2: Locally missing carbon? *Global Change Biology* 6: 99-110. (28 citations)

52. Luo, Y., D. Hui, W. Cheng, J.S. Coleman, D.W. Johnson and D.A. Sims. 2000. Canopy quantum yield in a mesocosm study. *Agricultural and Forest Meteorology* 100: 35-48. (52 citations)

53. Hammerlynk, E.P., T.E. Huxman, S.D. Smith, R.S. Nowak, S. Redar, M.E. Loik, D.N. Jordan, D.A., S.F. Zitzer, J.S. Coleman and J.R. Seemann. 2000. Photosynthetic responses in contrasting Mojave Desert shrub species to increased CO_2 concentration at the Nevada Desert FACE facility. *Journal of Arid Environments* 44: 425-436. (40 citations)

54. Taub, D., J.R. Seemann, and J.S. Coleman. 2000, Growth at elevated CO_2 protects photosynthesis from damage by high temperature. *Plant, Cell and Environment* 23: 649-656. (131 citations)

55. Pataki, D.E., T.E. Huxman, D.N Jordan, S.F. Zitzer, J.S. Coleman, S.D. Smith, R.S. Nowak and J.R. Seemann. 2000. Water use of Mojave Desert shrubs under elevated CO_2. *Global Change Biology* 6: 889-898. (47 citations)

56. Preczewski, P., S.A. Heckathorn, C.A. Downs and J.S. Coleman. 2000. Photosynthetic thermotolerance is quantitatively and positively correlated with the production of specific heat shock protein among nine genotypes of tomato. *Photosynthetica* 38: 127-134. (44 citations)

57. Ackerly, D.D., S.A. Dudley, S.E. Sultan, J. Schmitt, J.S. Coleman, R. Linder, D.R. Sandquist, M.A. Geber, A.S. Evans, T.E. Dawson and M.J. Lechowicz. 2000. The evolution of plant ecophysiological traits: Recent advances and future directions. *BioScience* 50: 979-995. (374 citations)

58. Smith, S.D., T.E. Huxman, S. F. Zitzer, T.N. Charlet, D.C. Housman, J. S. Coleman, L. K. Fenstermaker, J.R. Seemann, and R.S. Nowak. 2000 Elevated CO_2 increases productivity and invasive species success in an arid ecosystem. *Nature* 408: 79-82. (513 citations)

59. Bernacchi, C.J., J.S. Coleman, F.A. Bazzaz and K.D. M. McConnaughay. 2000. Biomass allocation in old-field annual species grown in elevated CO_2 environments: no evidence for optimal partitioning. *Global Change Biology* 6: 855-863. (44 citations)

60. Cheng, W., D.S. Sims, Y. Luo, J.S. Coleman and D.W. Johnson. 2000. Photosynthesis, respiration and net primary production of sunflower stands in ambient and elevated atmospheric CO_2 concentrations: an invariant NPP:GPP ratio? *Global Change Biology 6*: 931-942. (48 citations)

61. Hamilton, E.W. III and J.S. Coleman. 2001. Heat-shock proteins are induced in unstressed leaves of *Nicotiana attenuata* when distant leaves are stressed. *American Journal of Botany* 88: 950-955. (27 citations)

62. Hui, D., D.A. Sims, D.W. Johnson, W. Cheng, J.S. Coleman and Y. Luo. 2001. Canopy water and water use efficiencies at elevated CO_2. *Global Change Biology 7*: 75-92. (59 citations)

63. Hamilton III, E.W., S.J. McNaughton and J.S. Coleman. 2001. Soil Na stress: Molecular, physiological and growth responses in four Serengeti C_4 grasses. *American Journal of Botany* 88: 1258-1265. (21 citations)

64. Nowak, R.S., D.N. Jordan, L.A. DeFalco, C.S. Wilcox, J.S. Coleman, J.R. Seemann, and S.D. Smith. 2001. Effects of Elevated Atmospheric CO_2 on Leaf Conductance and Temperature for Three Desert Perennials at the Nevada Desert FACE Facility. *New Phytologist* 150: 449-458. (36 citations)

65. DeLucia, E.H., J.S. Coleman, T.E. Dawson, and R.B. Jackson. 2001. Plant physiological ecology: linking the organism to scales above and below (meeting report). *New Phytologist* 149: 9-16. (7 citations)

66. Wait, D.A., J.S. Coleman and C.G. Jones. 2002. *Chrysomela scripta*, *Plagiodera versicolora* (Coleoptera: Chrysomelidia), and *Trichoplusia ni* (Lepodoptera: Noctuidae) track specific leaf developmental stages. *Environmental Entomology* 31: 836-843. (12 citations)

67. Johnson, D.W., J. A. Benesch, M. S. Gustin, D. S. Schorran, S. E. Lindberg, J. S. Coleman. 2003. Experimental evidence against diffusion control of Hg evasion from soils. *Science of the Total Environment* 304: 175-184. (46 citations)

68. Ericksen, J.A., M.S. Gustin, D.S. Schorran, D.W. Johnson, S.E. Lindberg and J.S. Coleman. 2003. Accumulation of atmospheric mercury by forest foliage. *Atmospheric Environment* 37: 1613-1622. (232 citations)

69. Obrist, D., P.S.J. Verburg, M.H. Young, J.S. Coleman, D.E. Schorran, J.A. Arnone III. 2003. Quantifying the effects of phenology on ecosystem evapotranspiration in planted grassland mesocosms using EcoCELL technology. *Agricultural and Forest Meteorology* 118: pp. 173-183. (28 citations)

70. Weatherly, H.E., S.F. Zitzer, J.S. Coleman, and J.A. Arnone. 2003. In situ litter decomposition and litter quality in a Mojave Desert ecosystem: effects of elevated

atmospheric CO2 and interannual climate variability. *Global Change Biology* 9: 1223-1233. (44 citations)

71. Verburg, P.S.J., J.A. Arnone III, D. Obrist, D.W. Johnson, D. Lerourx-Swarthout, D.E. Schorran, Y. Luo, R.D. Evans, and J.S. Coleman. 2004. Net ecosystem carbon exchange in two experimental grassland ecosystems. *Global Change Biology* 10: 498-508. (73 citations)

72. Nowak, R.S., S.F. Zitzer, D. Babcock, V. Smith-Longozo, T.N. Charlet, J.S. Coleman, J.R. Seemann and S.D. Smith. 2004. Elevated atmospheric CO_2 does not conserve soil moisture in the Mojave Desert. *Ecology* 85: 93-99. (58 citations)

73. Gustin, M.S., J.A. Ericksen, D.E. Schorran, D.W. Johnson, S.E. Lindberg, J.S. Coleman. 2004. Application of controlled mesocosms for understanding mercury air-soil-plant exchange. *Environmental Science and Technology* 38: 6044-6050. (51 citations)

74. Coleman, J.S. 2005. Undergraduate research participation as an essential component of a research university: A perspective of a chief research officer. *Council of Undergraduate Research Quarterly*: June, 2005: 154-155.

75. Gould, G.G., C.G. Jones, P. Rifleman, A. Perez, and J.S. Coleman. 2007. Variation in Eastern Cottonwood (*Populus deltoides* Bartr.) phloem sap content and toughness due to leaf Development may affect feeding site Selection behavior of the aphid, *Chaitophorous populicola* Thomas (Homoptera: Aphididae). *Environmental Entomology* 35: 1212:1225. (19 citations)

76. Bernacchi, C.J., J.N. Thompson, J.S. Coleman, K.D.M. McConnaughay. 2007. Allometric Analysis Reveals Relatively Little Variation in Nitrogen vs. Biomass Accrual in Four Plant Species Exposed to Varying Light, Nutrients, Water, and CO_2. *Plant, Cell and Environment* 30: 1216:1222. (14 citations)

77. Barua, D., S.A. Heckathorn, J.S. Coleman. 2008. Variation in heat-shock proteins and photosynthetic thermotolerance among natural populations of *Chenopodium album* L. from contrasting thermal environments: implications for plant responses to global warming. *Journal of Integrative Plant Biology*: 50: 1440-1451. (25 citations)

78. Arnone, J.A. III, P.S.J. Verburg, D.W. Johnson, J.D. Larsen, R.L. Jasoni, A.J. Lucchesi, C.M. Batts, C. von Nagy, W.G. Coulombe, D.E. Schorran, P.E. Buck, B.H. Braswell, J.S. Coleman, R.A. Sherry, L.L. Wallace, Y. Luo and D.S. Schimel. 2008. Prolonged suppression of ecosystem carbon dioxide uptake after an anomalously warm year. *Nature* 455:383-386. (98 citations)

PUBLISHED ABSTRACTS AND PRESENTATIONS AT SCIENTIFIC MEETINGS:

1. Murdoch, C.W., J.S. Coleman and R.J. Campana. 1982. Bark cracks associated with injection wounds in elms. *Phytopathology* 72: 259.

2. Hoch, J.G., R.J. Campana, J.S. Coleman and C.W. Murdoch. 1982. Stem cankers mimic Dutch elm disease symptoms in Maine. *Phytopathology* 72: 262.

3. Coleman, J.S., R.J. Campana and C.W. Murdoch. 1982. Inhibition of decay in bacterial-stained wood of American elm (*Ulmus americana* L.). *Phytopathology* 72: 958-959.

4. Coleman, J.S., C.W. Murdoch, R.J. Campana and W.H. Smith. 1984. Investigations on the decay resistance of elm wetwood. *Phytopathology* 74: 869-870.

5. Coleman, J.S., C.G. Jones and W.H. Smith. 1985. The effect of ozone on two cottonwood pest interactions. 17th Annual Air Pollution Workshop. Raleigh, NC. April 15-17, 1985.

6. Coleman, J.S. 1985. Leaf sink-source transition and susceptibility to biotic and abiotic stress agents: an ecological perspective of physiological concepts. IUFRO International Symposium on Whole-Plant Physiology. Knoxville, TN. October 6-11, 1985.

7. Jones, C.G. and J.S. Coleman. 1986. The effect of ozone on the interaction of eastern cottonwood with a leaf chewing beetle and a pathogenic rust. Entomological Society of America, Hollywood, FL.

8. Jones, C.G. and J.S. Coleman. 1986. Effects of ambient ozone stress on cottonwood resistance to its insect and pathogen community. *Bulletin of the Ecological Society of America* 67: 116.

9. Coleman, J.S. and C.G. Jones. 1988. A phytocentric perspective of phytochemical induction by herbivores. Meeting of the International Entomological Society, Vancouver, British Columbia, Canada. July 3 - July 7.

10. Coleman, J.S. and C.G. Jones. 1988. Leaf sink-source transition and susceptibility to insects and pathogens: some ecological perspectives. *Bulletin of the Ecological Society of America* 69: 103.

11. Jones, C.G. and J.S. Coleman. 1989. An integrated approach to studying plant-herbivore interactions: the effect of ozone on cottonwood resistance to a leaf beetle. International Society of Chemical Ecology. Sweden, August 7-11, 1989.

12. Morse, S.R., J.S. Coleman and F.A. Bazzaz. 1989. Combined effects of CO_2 and temperature on germination and survivorship of two plant species with different photosynthetic pathways when grown in monocultures. *Bulletin of the Ecological Society of America* 70: 210.

13. Coleman, J.S., S. R. Morse and F.A. Bazzaz. 1989. Combined effects of CO_2 and temperature on growth and resource allocation of two sympatric plant species with different photosynthetic pathways. *Bulletin of the Ecological Society of America* 70: 64.

14. Coleman, J.S. and F.A. Bazzaz. 1991. Using plant growth analysis to determine plant nitrogen use efficiency under differing availabilities of carbon and nitrogen. *Bulletin of the Ecological Society of America* 72: 91-92.

15. Hartvigsen, G., D.A. Wait, and J.S. Coleman. 1992. Cottonwood, herbivorous mites and predatory mites: the effect of plant nutrient supply on three-trophic level interactions. *Bulletin of the Ecological Society of America* 73: 100.

16. Coleman, J.S. and C.G. Jones. 1992. Leaf ontogeny and plant phenology as regulators of plant-herbivore interactions. Gordon Research Conference on Plant-Herbivore Interactions. February, 1992.

17. Wait, D.A., C.G. Jones and J.S. Coleman. 1993. Fertilization and herbivore feeding: the relationship between leaf ontogeny and leaf biochemical composition. *Bulletin of the Ecological Society of America* 74: 474.

18. Coleman, J.S. and D.A. Wait. 1993. Leaf ontogeny and herbivore preference: do herbivores care about leaf chronological age, developmental stage, or position on the stem. *Bulletin of the Ecological Society of America* 74: 197.

19. Wait, D.A., C.G. Jones and J.S. Coleman. 1994. Nutrient supply, leaf nitrogen, and phenol glycoside composition in cottonwood: How they interact to affect beetle feeding? 11th Annual Meeting of the International Society of Chemical Ecology, Syracuse, NY. June 4-8, 1994.

20. Polgreen, G.J., J.S. Coleman and R.L. Hallberg. 1994. Plant nutrient availability and thermotolerance: Linking molecular and ecological approaches. *Bulletin of the Ecological Society of America* 75: 182-183.

21. Heckathorn, S.A., G.J. Polgreen, J.S. Coleman and R.L. Hallberg. 1994. Effect of induced variation in heat shock proteins on photosynthesis: Linking molecular and whole-plant processes. *Plant Physiology Supplement*.

22. Heckathorn, S.A., G.J. Polgreen, J.S. Coleman and R.L. Hallberg. 1995. Effect of induced variation in hsp accumulation on photosynthesis: Evidence that hsps limit damage to the oxygen evolving complex proteins and photosystem II function during heat stress at the cost of soluble enzymes involved in CO2 fixation. 1995 Gordon Research Conference on Temperature Stress in Plants. Oxnard, CA, January 29 - February 2, 1995.

23. Wait, D.A., C.G. Jones and J.S. Coleman. 1995. Manipulation of leaf development and chemistry with novel use of fertilization: Leaf development determines shere beetles feed and leaf chemistry determines how much they consume. 1995 Gordon Research Conference on Plant-Herbivore Interactions. Oxnard, CA, February 5 - February 9, 1995.

24. Wilsey, B.J, J.S. Coleman and S.J. McNaughton. 1995. Effects of elevated CO_2 on plant-grazer interactions: the importance of urine-hits and simulated grazing on the response of

C3 grass from Yellowstone National Park. *Bulletin of the Ecological Society of America* 76: 285.

25. Wait, D.A., J.S. Coleman, and C.G. Jones. 1995. Net effects of herbivory on plant performance measured under dynamic nutrient supply in the field. *Bulletin of the Ecological Society of America* 76: 276.

26. McConnaughay, K.D.M. and J.S. Coleman. 1995. Allocational plasticity in old-field annuals: optimal partitioning or ontogenetic drift? *Bulletin of the Ecological Society of America* 76: 174-175.

27. Coleman, J.S. and K.D.M. McConnaughay. 1996. Ontogenetic constraints to allocational plasticity in old-field annuals. *Bulletin of the Ecological Society of America*.

28. McConnaughay, K.D.M. and J.S. Coleman. 1996. Plasticity in reproductive allocation patterns in old-field annuals. *Bulletin of the Ecological Society of America*.

29. Hamilton, E.W., S.A. Heckathorn, C.A. Downs, T.E. Schwarz, J.S. Coleman and R.L. Hallberg. 1996. Heat shock proteins are produced by field-grown naturally occurring plants in the summer in the temperate northeast United States. *Bulletin of the Ecological Society of America*.

30. Heckathorn, S.A., J.S. Coleman, and R.L. Hallberg. 1996. Evidence for photosynthetic trade-offs associated with heat-shock protein production in plants. *Bulletin of the Ecological Society of America*.

31. Wait, D.A., J.S. Coleman and C.G. Jones. 1996. Plant responses to defoliation and damage depend on the trajectory of their relative growth rate. *Bulletin of the Ecological Society of America*.

32. McConnaughay, K.D.M. and J.S. Coleman. 1997. Plasticity in the use of nitrogen in biomass production for three old-field annuals along gradients of light, water and nutrients. *Bulletin of the Ecological Society of America*.

33. Coleman, J.S. 1998. Studies of adaptive variation of heat shock proteins in plants. 49th Annual Meeting of the American Institute of Biological Sciences, Baltimore, MD. *Bulletin of the Ecological Society of America*.

34. Hui, D., Y. Luo, W. Cheng, J.S. Coleman, D.W. Johnson and D.A. Sims. 1998. Quantum yield, canopy development, and carbon flux in a mesocosm study. 49th Annual Meeting of the American Institute of Biological Sciences, Baltimore, MD. *Bulletin of the Ecological Society of America*.

35. Hamilton, E. W. III, J.S. Coleman, and S.J. McNaughton, 1998. Variation in physiological and biochemical responses to soil Na: Adaptations in four C4 grasses from the Serengeti

short-grass plains. 49th Annual Meeting of the American Institute of Biological Sciences, Baltimore, MD. *Bulletin of the Ecological Society of America*.

36. Cheng, W., J.T. Ball, J.S. Coleman, D.W. Johnson, W. Liu, Y. Luo, D. Schorran, D.A. Sims and E. Sotoodeh. 1998. An integrative study of shoot and root respiration under elevated CO_2. Annual Meeting of the American Institute of Biological Sciences, Baltimore, MD. *Bulletin of the Ecological Society of America*.

37. Pataki, D.E., T.E. Huxman, D.N Jordan, S.F. Zitzer, J.S. Coleman, S.D. Smith, R.S. Nowak and J.R. Seemann. 1998. Water use of Mojave Desert shrubs under elevated CO_2. American Geophysical Union, December, 1998.

38. Coleman, J.S., D.N. Jordan, R.S. Nowak, J.R. Seemann and S.D. Smith. 1999. The Nevada Global Environmental Change program (NevGEC). Mojave Desert Science Symposium, Las Vegas, NV, February, 1999.

39. Cheng, W., D.A. Sims, Y. Luo, J.S. Coleman and D.W. Johnson. 1999. Sunflower canopy photosynthesis and respiration under elevated CO_2: Percent increase means what? Annual Meeting of the Ecological Society of America, Spokane, WA. *Bulletin of the Ecological Society of America.*

40. Hui, D., Y. Luo, W. Cheng, J.S. Coleman, D.W. Johnson and D.A. Sima. 1999. Effects of elevated CO_2 on canopy radiation and water use efficiencies. Annual Meeting of the Ecological Society of America, Spokane, WA. *Bulletin of the Ecological Society of America.*

41. Taub, D.R., J.R. Seemann and J.S. Coleman. 1999. Growth at elevated CO_2 increases photosynthetic tolerance at high temperature. Annual Meeting of the Ecological Society of America, Spokane, WA. *Bulletin of the Ecological Society of America*.

42. Houseman, D., S. F. Zitzer, J.S. Coleman, R. S. Nowak and J.R. Seemann. 1999. Survival and growth characteristics of naturally recruited seedlings of Mojave Desert shrubs *Larrea tridentata* and *Ambrosia dumosa* exposed to elevated atmospheric CO_2 (FACE) during a wet year. Annual Meeting of the Ecological Society of America, Spokane, WA. *Bulletin of the Ecological Society of America.*

43. Taub, D.B., J.R. Seemann and J.S. Coleman. 2000. Effect of growth at low atmospheric CO_2 on plant photosynthetic tolerance of high temperatures. Annual Meeting of the Ecological Society of America, Snowbird, UT. *Bulletin of the Ecological Society of America*.

44. Zitzer, S., J.S. Coleman, R. Nowak, J.R. Seemann, and S. Smith. 2000. Litter accumulation beneath Mojave Desert shrubs exposed to predicted 21st century atmospheric CO_2 levels using Free Air CO_2 Enrichment (FACE). Annual Meeting of the Ecological Society of America, Snowbird, UT. *Bulletin of the Ecological Society of America*.

45. Coleman, J.S., R. B. Jackson and T.E. Dawson (organizers). 2000. Plant physiological ecology: Linking the organism to scales above and below. Symposium, Annual Meeting of the Ecological Society of America, Snowbird, UT. *Bulletin of the Ecological Society of America.*

46. Nowak, R.S., D.N. Jordan, L.A. DeFalco, J.S. Coleman, J.R. Seemann, and S.D. Smith. 2000. Effects of elevated atmospheric CO_2 on leaf conductance and temperature for three desert perennials at the Nevada Desert FACE facility. International FACE meeting, Japan.

47. Nowak, R.S., J.R. Seemann, J.S. Coleman, and S.D. Smith. 2000. Responses of vegetation to elevated atmospheric CO_2: The Nevada Desert FACE facility. International FACE meeting, Japan.

48. Frescholtz, T.F., Gustin, M.S., Schorran, D.E., The role of vegetation in mercury cycling at mercury enriched mine sites, American Geophysical Union Meeting, San Francisco, CA, Dec. 2001.

49. Gustin, M., Sexauer, Benesch, J. A., Schorran, D.E., Johnson, D.A.,, Lindberg, S.A., Coleman, J. Assessing the effect of plants on mercury emissions from substrate, poster presented at the 6th International Conference on Hg as Global Pollutant, Minamata, Japan, October 2001.

50. Benesch, J. A., Gustin, M.A., Schorran, D.E., Coleman, J., Johnson, D.A., Lindberg, S.E., Determining the role of plants in the biogeochemical cycling of mercury on an ecosystem level, paper to be presented at the 6th International Conference on Hg as Global Pollutant, Minamata, Japan, October 2001.

51. Johnson, D.W., Benesch, J.A., Gustin, M.S., Schorran, D.E., Coleman, J., Lindberg, S.E., Soil gaseous Hg concentrations: Evidence against diffusive control of flux paper to be presented at the 6th International Conference on Hg as Global Pollutant, Minamata, Japan, October 2001.

52. Gustin, M.S., J. Benesch, J. Frescholtz, D. Schorran, D. Johnson, S. Lindberg, and J. Coleman. 2002. Forests as sources of new mercury to ecosystems. American Society of Limnology and Oceanography, Victoria, BC.

53. Babcock, D.H., S.F. Zitzer, D.C. Houseman, L.K. Fenstermaker, R.S. Nowak, S.D. Smith and J.S. Coleman. Influence of microsite and elevated CO_2 (FACE) on recruitment, survival and growth of desert shrubs. Ecological Society of America Meeting, Tucson, AZ, August, 2002.

54. Verburg, P.S., J.A. Arnone, R.D. Evans, D. Leroux-Swarthout, D. Obrist, D.W. Johnson, Y. Luo and J.S. Coleman. The potential of short-rotation cropping systems to sequester C. Ecological Society of America Meeting, Tucson, AZ, August, 2002.

55. Thompson, J., C. Bernacchi, J.S. Coleman and K.D.M. McConnaughay. 2002. C/N Ratios in Four Species of Plants Exposed to Varying Light, Nutrients, Water, and CO_2. Ecological Society of America Meeting, Tucson, AZ, August, 2002.

COURSES TAUGHT

Readings in Population Biology: The cost of plant defense. (Fall, 1990; Spring 1995)
Plant Physiology (Fall, 1991; Fall 1992; Fall 1993; Fall 1994; Fall 1996)
Physiology Laboratory (Fall 1993; Fall 1994)
Freshman Forum (Fall 1993; Fall 1994; Fall 1996)
Undergraduate Seminar in Population Biology (Fall, 1991)

Undergraduate Independent Research and Study in Population Biology (Fall 1991; Spring 1992; Fall 1992; Spring 1993; Fall 1993; Spring 1994; Fall 1994, Spring 1995; Fall 1996)
Topics in Population Biology: Plant-Herbivore Interactions (Spring, 1991)
Species Interactions (Spring 1993; Spring 1994, Spring 1995)
Capstone Seminar in Environmental Sciences (Spring 1997)
Global Change Biology (Spring, 2012) (I was only a participant in this class - but attended and interacted with students in almost all of the classes and gave a lecture- the class was taught by Christopher Gough)
Risk-takers and job creators (Spring 2013) - I co-taught this course with the Associate Dean for Research. The course introduces students to alumni or community members with backgrounds in liberal arts and sciences, who have created their own companies.
Biology Capstone Course- Comparing Salt Marsh and Desert Ecosystems in their Response to Climate Change - (Fall, 2014- co-taught with Don Young)

GRADUATE STUDENTS IN MY LABORATORY:

Lori Brisbin (completed M.S. 1991)
Gretchen Polgreen (completed M.S., 12/94; winner of University Prize for most outstanding M.S. thesis)
D. Alexander Wait (Ph.D.; completed 2/97)
Brian J. Wilsey (Ph.D.; co-advisor with Dr. Samuel J. McNaughton; completed August, 1995; winner of Guerevtich Award for best Ph.D. thesis in Biology Department; Assistant Professor Iowa State University)
Sherri Gross (Ph.D. candidate; co-advisor with Dr. Larry Wolf; completed May 2000)
Jenifer Sabol (M.S. candidate, left for Dental School)
Craig Downs (M.S - completed 1997)
Deepak Barua (Ph.D. candidate; completed degree under Scott Heckathorn; May 2003)
Georgianna Gould (Ph.D; co-advised with Larry Wolf; completed 2001)
Bill Hamilton (Ph.D., completed, 1999; co-advised with Sam McNaughton)

GRADUATE COMMITTEES:

Doug Frank (completed 1991)
Fran Lissemore (completed 1993)
Kevin Williams (completed 1993)
Gregg Hartvigsen (completed 1995)
Yuying Hsu (completed 1997)
Brenda Price Latham (completed 1997)
Ben Tracy (completed 1996)
Mahesh Sankaran (completed May 2001)
Travis Huxman (completed January 2000)
Dani Obrist (completed December 2002)
Amy Dona (completed May, 2005)
Katie Becklin (expected completion date in 2009)
Cynthia Scheuermann (M.S., expected completion in 2016)

UNDERGRADUATES CONDUCTING INDEPENDENT RESEARCH IN MY LABORATORY (OR WITH ME):
Gunnar Kleemann (honors; honors thesis completed 1995)
Karin Schneider (completed 1995)
Michele Giovannini (honors; completed 1994; recipient of Lundgren Award)
Lori Clark (honors; completed 1994; recipient of SU scholar and Lundgren Award)
A. Soren Leonard (completed 1994)
Tara Houndt (honors; completed 1993))
Richard Lee (completed 1993)
Bill Hamilton (completed 1992)
Paul Pryczewski (completed 1997)
Sean Metivier (completed 1997)
Jessica Rabenold (2002-2007; worked with Candi Galen, Mannie Liscum and me)

UNDERGRADUATE HONORS THESIS READER (OTHER THAN ADVISEES):
Gina Zuniga (1995: recipient of Lundgren Award for most outstanding Biology student)
Stephanie Moses (1994; co-recipient of Lundgren Award; recipient of SU Scholar)

POSTDOCTORAL ASSOCIATES IN MY LABORATORY:
Scott Heckathorn, Ph.D. Univ. of Illinois, 1994; (1994-1997)
Steve Boese, Ph.D. University of Western Ontario, 1991. (1995-1996)
Daniel "Max" Taub, Ph.D. SUNY-Stony Brook 1997 (1998–2000)
Diane Pataki, Ph.D., Duke University, 1998, (1998–1999)
Elke Naumberg, Ph.D., Duke University, 2000. (shared with Stan Smith, UNLV; April 2000 – June 2002)

PROFESSIONAL SERVICE:
Board Member, Maymont Foundation (http://www.maymont.org/) 2013-2015
AAAS Review, State of Maine EPSCoR Program, April 2013
Chair, External Advisory Board member to Nevada's NSF EPSCoR Research Infrastructure Improvement Grant, 2008-2013.
Chair, State of Arkansas NSF EPSCoR External Advisory Committee, September 2007-September 2014
AAAS reviewer, State of Kentucky EPSCoR program. 2012
Board of Advisors, Ocean Energy Institute, February, 2010 –2011
Member, External Review Committee of the Biology Department, Georgetown University, May, 2010
Reviewer for Notre Dame University's internal research program. Fall, 2009
Member, Committee of Visitors for National Science Foundation EPSCoR program, August, 2009
Chair, Technology Development Subcommittee, Energy Collaborative, Greater Houston Partnership. January 2009 – December 2009
AAAS reviewer for Nebraska NSF EPSCoR project seletion. 2009
Board member, Houston Advanced Research Center (HARC) 2008-2011

Board member, Alliance for Nanohealth, 2008-2011
Board member, Gulf Coast Consortium, 2008-2011
Commissioner, University of Rhode Island Commission for Research and Innovation, September, 2007-2008 (member of statewide implementation team September 2008-2011)
Board member, National Space Biomedical Research Institute, September, 2007 – 2011
Board member, SURA (Southern Universities Research Alliance), September, 2007-2011
Member, Economic Development committee, Greater Houston Parthernship, January 2008 – 2011.
National Science Foundation reverse site visitor, NSF EPSCoR, October, 2006
Invited workshop participant (1 of 25) NSF EPSCoR 2020 Workshop: Defining a Strategic Plan for the Experimental Program to Stimulate Competitive Research, June, 2006.
AAAS Panel to review Kansas EPSCoR programs, May, 2006 and October, 2006
Reviewer for Vermont EPSCoR program's submission of RII proposal, Fall, 2006
Reviewer for South Carolina EPSCoR RII preproposals, November, 2006
Reviewer for Rhode Island EPSCoR program. September, 2005
AAAS Panel to review Kansas EPSCoR programs. May, 2005; November, 2006
Invitee – NSF Workshop on the future of Science, Mathematics, Engineering and Technology Education. April, 2005
Program Committee member, AAU Senior Research Officers, 2005 - present
Panel Member, EPSCOR RII awards, September 2004
Board Member, Missouri Innovation Center, May 2003 – September, 2007
Panel Member, NSF Frontiers in Biological Research, December, 2002
Elected Board Member, Association of Ecosystem Research Centers, 2002-2007
Chairman, Nevada Inventor of the Year Selection Committee, 2001
Chairman, Rudolf Gunnerman Silver State Technology Award Selection Committee, 2000, 2001,2002
Member of UCCSN Computer Vision Program Advisory Board 2000 - 2003
Elected Board Member of the Coalition of EPSCoR States– October 2000 – 2003
Board Member, International Arid Lands Consortium Board of Directors, July, 2000 – May, 2001
Board Member, Nevada Technology Council, 1998 - 2003
Nevada State EPSCoR Committee – 1998 - 2003
Co-lead organizer (Martin Feder played major role) in SICB symposium on linking plant and animal approaches to ecological and evolutionary physiology
Lead organizer for ESA symposium: Plant Physiological Ecology: Linking the Organism to Scales Above and Below- August 2000
NSF Biocomplexity Panel – June, 2000
National Science Foundation Working Group for NEON. January, 2000
DOE Review of Biosphere II - 2000
AAAS review committee for University of Idaho Biology Deparmtent, May, 1999
Organized workshop on Evolutionary Responses to Global Change for NSF-EPSCoR and DOE-TCP held in Reno, NV, 5/23/99 – 5/26/99
President of the Physiological Ecology Section of the Ecological Society of America (1/99- 1/01)
Member of the Governing Advisory Board of the Ecological Society of America (1/99 –1/01)
Editorial Board for journals *Ecology* and *Ecological Monographs*. (10/96 –10/99)
Editorial Board for *International Journal of Plant Sciences* (11/97- 6/08)
Member of Honorary Membership Committee, Ecological Society of America (1998-2001)

Member of the Membership Committee of the Ecological Society of America (1990-1994)
Program Officer, NSF Panel of Ecological and Evolutionary Physiology (1995-1996)
Panel Member NSF CRUI Preproposals (1996)
Panel Member NSF Science and Technology Center Preproposals (1998)
Panel Member NSF IGERT Preproposal competition (1999)
Panel member for USDA, National Research Initiative, Competitive Grants Program, 1994
Entomology/Nematology Panel
Panel member for NSF, Ecological and Evolutionary Physiology, 1995, 1997, 1998

Reviewer for the following journals:
Oecologia
Oikos
Ecology
Forest Science
Canadian Journal of Forest Research
New Zealand Journal of Botany
Bulletin of the Torrey Botanical Garden
Entomolgia applicata et experimentalis
Environnemental Entomology
Plant, Cell and Environment
Functional Ecology
Ecological Applications
American Journal of Botany
Global Change Biology
Journal of Ecology
International Journal of Plant Sciences
Annals of Botany
New Phytologist
National Science Foundation (ecology, ecosystem, population biology, and ecological and evolutionary physiology panels) grant reviews
National Science and Engineering Research Council of Canada, reviewer
United States Department of Agriculture Competitive Grants Program, grant reviews
Mid-Western Regional Center for Global Change, Grant Reviewer
Chile FONDAP competition, 1999
AAAS Research Competitiveness Program, 1999
Tenure and promotion reviewer for several universities
Reviewer for inside grants of the City College of New York
Reviewer for the National Research Council
Reviewer for Wellcome Trust proposals
Participation in Project Advance and Frontiers of Science
Participation in New York State Summer Program for Science and Mathematics (1994, 1995)

UNIVERSITY SERVICE:
Chair, Provost's Academic Leadership Council, NAU, Fall 2015-
Co-Chair, NAU Student Enrollment Management and Retention Committee, NAU, Fall 2015-
Member, Chief Information Officer Search Committee, NAU, Fall 2015

Member, Strategic Planning and Budget Committee, NAU, Fall 2015-
Chair, VCU Task Force on Administrative and Professional Faculty, Fall 2014
Member. VCU's President's Task Force for the Innovative Recruitment for Central Virginia HS Students, Fall, 2014-
Member, VCU University Budget Advisory Committee, Fall 2014-
Chair, Search Committee, VCU Chief Human Resources Officer, Fall 2014
Co-Chair, Search committee for Dean of VCU Honors College, Fall/Spring 2013-2014
Chair, Search committee, Senior Associate Vice President for Campaign Leadership and Constituency Relations, Spring 2014.
Member Search Committee, Vice President for Finance and Administration, Spring 2013
Member Search Committee, Senior Vice Provost for Strategic Initiatives and Operation, Spring 2013
Member, SACS reaccreditation QEP Steering Committee, Spring 2013- present
Member, VCU University Council and UC academic affairs subcommittee, 2011-present
Member, VCU Innovation task force, 2011-present
Member, VCU Interdisciplinary Research task force, 2012-2014
Chair, VCU Monroe Park Campus Research Committee 2011-2012
Co-Chair Dean of Engineering Search Committee, VCU 9/2011-6/2012
Rice-Baylor College of Medicine Steering Committee for Merger with the Baylor College of Medicine, 2008-present
Chair, Subcommittee on Academic Matters, joint Rice-Baylor College of Medicine Steering Committee, June 2009 – present.
Rice Research Advisory Group, 2007-present.
Rice Graduate Council, ex-officio member, 2007-present.
Search Committee member for Dean of Rice's Weiss School of Natural Sciences, 2007-2008
Rice Shared Equipment Authority, ex-officio member, 2007-present
Strategy and Planning group member, 2007-present
Rice Crisis Management Team member, 2007-present
Rice University Graduate Council (ex-officio)- 2007-present
Collaborative Research Center, steering committee member, 2007-present
Collaborative Research Center, core team member, 2007-present
Co-Chair, MU Strategic Planning Committee focused on 10 year environmental scan. 2006-2007
Member, Campaign Steering Committee for MU's $1,000,000,000 fundraising campaign. 2005-2007
MU Promotion and Tenure Committee. December, 2005 – 2007.
Search Committee, MU Vice Provost for Graduate School. December, 2005- May 2006
Co-Chair, Council of Economic Development, MU. April, 2005 –2007
Chair, Strategic Planning and Resource Allocation Subcommittee on pursuit of quality, innovation, incentives, risks and rewards. September, 2004 – 2007
Member, Research Alliance of Missouri, 2004- 2007
MU Life Sciences Task Force, 2003-2007
MU Research Reactor Advisory Committee, 2003-2007
Strategic Planning and Resource Allocation Committee, MU, 2003- 2007(Chair of subcommittee on the pursuit of quality, innovation, incentives, risks and rewards)
Search Committee, Plant Evolutionary Biologist, MU 2003-2004

Search Committee Chair, Vice President for Business and Government Relations, DRI, 2003
Chancellors Technology Task Force, 2002-
Technology Strategy for Nevada, Task Force. 2001 – 2003
Nevada Entrepreneurial Team for National Governors Association Entrepreneurial Academy. October 16, 2000 – 2003
Search Committee Chair, Vice President for Academic Affairs, DRI, 2002
Search Committee, Vice Chancellor Academic Affairs, University and Community and College of Nevada 2001
Search Committee, Vice President for Research and Dean of the Graduate School, University of Nevada, Reno, 2000
Chair, Technology Advisory Committee and Board Member, Nevada Technology Council, 1999-2003
Participation in EPSCoR coalition for Nevada – led the effort to obtain a letter from Governors of 10 EPSCoR states supporting an increase in the NSF EPSCoR budget
DRI representative to Oak Ridge Associated Universities. Review coordinator for junior faculty awards. 1999 – 2003
Representative to the Tech Alliance of Nevada. 1999-2000
Ex-Officio member of the Board of the Dandini Research Park 1999-2003
Presentation to Nevada Legislature on the role of science in economic diversification. March, 2000
Nevada Economic Development – Science, Engineering and Technology invited participant1998-2000
Member of Western Industrial Nevada, DRI
Advisor to DRI fundraising foundation
Chaired two Search Committees and participated in 5 others in 1999-2000, DRI
Lake Mead Water Quality Forum Representative, DRI – 1999-2000
University and Community College System of Nevada Research Affairs Council, 1999-
Institute Advisory Committee for Presidential Search, DRI, 1998
Institute Grievance Committee, DRI, 1998
QSC Executive Director Search Committee, DRI, 1998
Nevada State EPSCoR Committee, 1998
DRI institutional strategic planning committee, 1999
Nevada Technology Council, 1999-present
Nevada Development Authority, member of Technology subcommittee, 1999-present
Several presentations on the relationship between EPSCoR and economic development 1998-present
Chair DRI Search Committee for leaders of new interdisciplinary programs, 1999-present
Institute Advisory Committee for Presidential Search, DRI, 1998
Institute Grievance Committee, DRI, 1998
Co-Advisor (with E. Maine) to Undergraduate Biology Club, Syracuse University (1994, 1995)
1994 Orlin Prize Selection Committee, Syracuse University
Chairperson of theses defense for a candidate from Environmental Engineering and another from Chemistry, Syracuse University
Co-leader of the Earth Science-Biology Environmental Sciences Curriculum development, Syracuse University

Martin Luther King Jr. Celebration Committee, Syracuse University (Chair of Awards Sub-Committee, 1994-1995; 1996-1997; member 1992-1994))
College of Arts and Sciences Committee on Student Life, Syracuse University (1994-1995)
Department of Biology Graduate Recruitment Committee, Syracuse University(Chair, 1994-1995; member prior to that date)
Department of Biology, Chair Search Committee, Syracuse University 1996
Department of Biology, Population Biology search committee, Syracuse University 1995-1996
Department of Biology Undergraduate Committee, Syracuse University
Recruiting phone calls for College of Arts and Sciences, Syracuse University (1992 & 1993)
Participation in Fall Fridays and Spring weekends sponsored by the Admissions Office, Syracuse University (1992, 1993, 1994)
Keynote speaker during College of Arts and Sciences Science Recruiting Days, 1992
Summer phone advising, Syracuse University (1995)