STEPHEN P. ROBERTS, Ph.D.

Curriculum vitae

CONTACT INFORMATION:

210 Parker Hall
Missouri University of Science and Technology
Rolla, MO 65401

Telephone: (573) 341-4740 (office)
(573) 308-6582 (mobile)
Fax: (573) 341-6777
Email: robertsst@mst.edu

PERSONAL:

Date of Birth: 13 December 1967
Place of Birth: Ottawa, Illinois, USA

CURRENT POSITION:

2019-present **Interim Provost and Executive Vice Chancellor of Academic Affairs; Professor of Biology**, Missouri University of Science and Technology (S&T)

Primary Responsibilities

- Provide executive leadership for all aspects of academic, student, administrative, and financial functions in an academic affairs unit comprised of 8 units: Global Learning, Academic Support, Institutional Research and Data Management, Enrollment Management, Curtis Laws-Wilson Library, Center for Advancing Faculty Excellence, College of Engineering and Computing, and College of Arts, Sciences, and Business.
- Articulate, promote, and implement university visions for improving student learning, research, stakeholder engagement, collaboration, and the recruitment, retention, and advancement of diverse and talented students, staff, and faculty.
- Oversee the development, execution, and assessment of plans to reach institutional strategic goals in academic success, diversification, research and creative works, service, engagement, and physical facilities.
- Executive management of an operating budget with expenditures of $115M in FY20.
- Plan, develop, and maintain appropriate organizational, business, and management policies for efficient and effective use of institutional resources and advancement of the university.

Select Accomplishments

<u>Administrative Leadership - General</u>

- Significantly improved operational effectiveness of Provost's Office. Replaced all but one administrator and two administrative staff members in the office. I hold daily meetings with senior administrative assistants, weekly meetings with the entire team, and set clear and high expectations of customer service approach.

- Facilitated new leadership transitions in 6 out of the 8 units reporting to the Provost: Office of Academic Support, Office of Enrollment Management, Curtis Laws-Wilson Library, Institutional Research and Data Management, Center for Advancing Faculty Excellence, and College of Arts, Sciences, and Business.
- Created Office of Institutional Research and Data Management, and hired the university's Chief Data Officer and associated staff. The office was instrumental in compiling and submitting extremely high quality, thoroughly-vetted institutional data to USN&WR, and is providing excellent planning for a sophisticated data-analytics approach to improving student success, to be implemented in AY20-21.
- Worked with internal leaders and UM System to identify, understand, and address the reasons behind S&T's slide in USN&WR's ranking of national universities. The major factors behind S&T's sliding rankings are substandard 1st-2nd year retention rate, 6-year graduation rate (absolute and relative to predicted graduation rate), graduation rate of Pell students versus non-Pell students, and peer score.
- Significant reorganizations: (1) Dean of the Library now reports to the Provost instead of Vice Provost for Academic Support; (2) International graduate student recruiting moved from International and Cultural Affairs to Enrollment Management; (3) Currently moving domestic graduate student recruiting from Graduate Studies to Enrollment Management.
- Hired and worked with new Vice Provost of Enrollment Management to stabilize 1st-time freshmen enrollment following 3 straight years of decline by an average of 113 student per year. Freshmen enrollment was on track to *increase* from last year until the COVID19 crisis. Even so, our freshman class is only down by about 20 students (1.7%), when nationwide they are down as much as 40%.
- Worked with Enrollment Management, colleges, and academic departments to improve processes and effectiveness in recruiting international MS students, resulting in a doubling of applications and admissions for this student population. The resulting increase in enrollment is yet unknown due to COVID19's disruption of student visa processing.
- In response to decreased state appropriation and tuition revenue, secured 12 negotiated retirements and resignations of faculty, with a savings of annual general revenue expenditures totaling $1.8M.

<u>Student Learning and Success</u>

- Seated and charged the Retention and Graduation Performance Committee, which studied S&T's retention and graduation rates, and developed a report with recommended actions to improve sense of belonging, increase access to wellness resources, and support early identification and intervention for students at risk.
- Collaborated with Academic Support and Student Affairs to increase 1st-2nd year retention from 81% to 85% (~45 students), with summer outreach campaign to unregistered students, and year-long digital outreach campaign to students focusing on academics, finances, engagement, and wellness.
- Charged academic departments to develop and implement plans to improve student success in 17 key "barrier" courses (those with both high enrollments and DFW rates above 20%).
- Facilitated review and implementation of Chancellor's policy memoranda establishing guidelines for graduate assistant tuition and fee remission and graduate student enrollment status.
- Initiated in-depth study of the student success and the barriers to it for Black and other URM students. Working with key leaders from campus and the Chancellor's Alumni Committee on African American Recruitment and Retention to develop plan to improve

success for these students, who currently experience far lower levels of measurable access to and success within S&T's academic programs.

COVID19-related Activity

- Seated and charged the Academic Planning Committee to create a post-COVID19 strategy for S&T's academic structure, online education, undergraduate curriculum, professional graduate education, and enrollment management.
- COVID19 response: regular communication with all faculty; seating of the COVID19 Learning Transition Team (which coordinated S&T's COVID19 instructional strategy); co-hosted multiple open forums and town halls on S&T's COVID19 strategy; worked with leaders of all 8 units reporting to provost to develop their COVID19 strategies; participated in numerous UM System and Missouri DHEWD meetings to address COVID19 situation; worked closely with S&T Marketing and Communications to communicate COVID19 strategy to all stakeholders.
- Worked with Faculty Senate to implement temporary Satisfactory/Unsatisfactory grading policies due to COVID19 disruption of the Spring 2020 semester.

Faculty Scholarship and Professional Development

- Supported faculty efforts to create several new degree programs including Water Science and Engineering, Environmental Science, and Education.
- Worked with colleges, academic departments, and Faculty Senate to initiate creation of new academic departments and schools.
- Worked with University Advancement and academic departments to create endowed faculty positions.
- Worked with the Faculty Recruiting and Retention Council to conduct the COACHE survey in spring 2020 and prepare a grant proposal to the State of Missouri to create an on-campus childcare facility for students, staff, and faculty.
- Worked with colleges and departments to update and implement department-level faculty workload policies.
- Worked with Office of Sponsored Projects, Faculty Senate, and research faculty to revise Chancellor's Policy Memorandum III-25, so that faculty retained more control of fixed-price contract residuals.
- Worked with department chairs to establish criteria for satisfactory and excellent performance in teaching, research, and service for 5-year post-tenure faculty review.

PREVIOUS PROFESSIONAL APPOINTMENTS:

2014-19 **Vice Provost and Founding Dean of the College of Arts, Sciences, and Business; Professor of Biology**, S&T

Primary Responsibilities

- Provide executive leadership for all aspects of academic, student, administrative, and financial functions in a diverse college comprised of 14 administrative units housing 165 titled faculty and offering 14 baccalaureate degrees, 9 graduate degrees, 52 minors, and 27 emphasis areas to over 1,200 majors and 7,700 non-majors.
- Articulate, promote, and implement college and university visions for improving student learning, research, stakeholder engagement, collaboration, and the recruitment, retention, and advancement of diverse and talented students, staff, and faculty.

- Oversee the development, execution, and assessment of plans to reach college and institutional strategic goals in academic success, diversification, research and creative works, service, engagement, and physical facilities.
- Manage an annual operating budget with expenditures of $23M from general revenue, in addition to $7M in annual contracts, grants, indirect cost returns, and gifts.
- Plan, develop, and maintain appropriate organizational, business, and management policies for efficient and effective use of institutional resources and advancement of the college.
- Pursue fundraising and advancement with private, government, and industry partners to support transformational student experiences and innovative, high-impact faculty effort in research, teaching, service, and engagement.

Select Accomplishments

Administrative Leadership - General

- Founded a college that has earned a strong, positive reputation for collaboration, effectiveness, collegiality, inclusion, innovation, and overall success.
- Created the Department of Teacher Education that now serves approximately 100 undergraduate students enrolled in S&T's teacher education programs.
- Created and implemented various college policies/programs to support research, creative activity, sabbatical leaves, professional development, learning space renovation ("extreme classroom makeover"), design of new online summer courses, etc.
- Partnered with Office of the Vice Chancellor for Human Resources, Equity and Inclusion to support the strategic priority of hiring, retention, and advancement of diverse faculty and staff.
- Seated the Dean's Leadership Council and established the Dean's Leadership Fund. The Council is an advisory and advocacy body of professionals (mostly S&T alum) who aim to create opportunity for students and faculty through philanthropy and networking.
- Partnered with the Office of University Advancement to host meetings with 70 individual donors and 26 foundation/corporate partners in ten states and two countries. Major gifts within the college total over $5M in donations for teaching spaces, scholarships, and other investments vital to student success.
- Oversaw major renovations of four buildings, including a $20M comprehensive renovation of Schrenk Hall, which houses the Departments of Chemistry and Biological Sciences.

Student Learning and Success

- College implemented the First Year Research Experience (FYRE) program, which pairs first-year students with faculty research mentors, and provided each pair with $1,000 for expenses.
- Partnered with the Office of Enrollment Management and the Provost's Office to establish undergraduate scholarships for college majors, supporting the strategic priority of recruiting and retaining diverse students.
- Partnered with academic departments to create History B.S. and Industrial and Organizational Psychology M.S. programs, and planning of an Integrative Biosciences Ph.D. program.
- Created the Design, Language, and User Experience (DeLUX) Lab in collaboration with the departments of English and Technical Communication, Psychological Science, and Business and Information Technology.
- Created a new visual arts studio in the Department of Arts, Languages, and Philosophy.

- Partnered with Student Affairs to open two engaging and innovative theme-based residential communities, *Global Awareness* and *Entrepreneurship and Innovation*.
- Seated and funded the Undergraduate Student Leadership Council and the Graduate Student Leadership Council. The student councils have developed their own bylaws and have funds from the college to offer professional development opportunities for students, as well as a faculty recognition program.
- Created a Corporate Collaboration Seminar Series, led by representatives (usually S&T alumni) from our major corporate partners. The goal of seminar series is to provide students with case studies, forum discussions, and other presentations that expose them to a breadth of professional opportunities and improve their career-readiness.

Faculty Scholarship and Professional Development

- Facilitated the establishment of four research centers: (1) The Center for Biomedical Research; (2) The Center for Research in Energy and Environment; (3) The Center for Science, Technology, and Society; and (4) The Center for High Performance Computing.
- Collaborated with academic departments to effectively recruit, retain, and promote world class faculty. Since the formation of the college in 2014, the number of titled faculty grew from 133 to 165 (24%).
- Hired faculty-cohorts into the following S&T strategic research areas: “Smart Living”, “Science, Technology, and Society”, “Enabling Materials for Extreme Environments” and “Astrophysics”.
- Doubled the number of women serving as department chairs, which now comprise roughly half of the department chairs in the college.
- Approved and implemented equity/market-based salary increases for one-third of the faculty in the college.
- Partnered with the Office of International and Cultural Affairs to develop and implement the Global Scholar Initiative, which allowed faculty to develop study abroad courses scheduled for delivery during summer 2017 and summer 2018 in Nicaragua, Oman, Iceland, England, and Austria.
- Led the creation of the Ozark Biomedical Initiative, which is the collaborative research platform of the strategic master partnership between Phelps County Regional Medical Center and Missouri S&T.
- Partnered with the Missouri Department of Conservation to create the Missouri S&T Ozark Research Field Station, which officially came into existence in January 2017. The station was granted institutional membership in the Organization of Biological Field Stations, and received a master planning grant from NSF.

2009-14 **Professor and Chair**, Department of Biology, Central Michigan University (CMU)

Primary Responsibilities

- Provided leadership and guidance to 30 tenure-track faculty, 7 fixed-term faculty, 10 staff members and 70 graduate assistants.
- Ensured high-quality educational experiences to 900 undergraduates and 70 graduate students enrolled in Biology degree programs, and to 500 non-majors per year taking Biology courses to satisfy general education requirements.
- Managed annual department state/tuition-derived base budget of $4.5M for titled faculty, fixed-term instructors, staff, graduate assistantships, supplies and equipment.
- Reviewed and provided impartial recommendations on matters of faculty appointment, promotion, tenure, compensation and retention.

- Reviewed and evaluated department faculty in consultation with the Dean of the College of Science and Technology.
- Provided support for faculty efforts in research, scholarship, and creative activity.

Select Accomplishments

- Led record growth of the department: full-time ranked faculty increased by 36%, undergraduate majors by 105%, and graduate students by 40% from 2009 to 2014.
- Increased annual SCH for on-line biology courses by 20-fold, and total (on-line + on-campus) biology SCH by 10%.
- Doubled of the annual number of students graduating with a Biology B.S. degree.
- Increase in department external grant expenditures by 10-fold, and doubling of the per-faculty publication rate.
- Initiated a modernizing redesign of the Biology B.S. foundational curriculum.
- Oversaw an update and refinement of the Biomedical Sciences B.S. program, the department's largest major.
- Led a successful program review and program prioritization, yielding top-ranked academic programs and commitments of increased graduate assistantships, S&E funds, and new faculty lines.
- Elevated diversity in all facets of department academic mission, with special emphasis on diversifying participation in undergraduate research.
- Created study abroad opportunities in South Africa and the Galapagos Islands.
- Facilitated recognition of faculty and staff excellence, demonstrated by campus-leading numbers of awards for performance in teaching, research, and service.
- Partnered with the CMU Vice President of Government Relations, the CMU Board of Trustees, the Michigan State Budget Director, and the Michigan House Appropriations Education Subcommittee to build a $95M Bioscience Building (broke ground in 2014; completed in 2016).
- Collaborated with other CMU basic science units to create important interdisciplinary ventures such as the Institute for Great Lakes Research and the Earth and Ecosystem Science Ph.D. program.

2006-09 **Director of Core Laboratories** (Genomics, Bioinformatics, Cytometry, and Imaging), School of Life Sciences, University of Nevada-Las Vegas (UNLV)

Primary Responsibilities

- Provided leadership and guidance to two laboratory technicians and one staff scientist
- Ensured high-quality genomics, bioinformatics, cytometry and confocal microscopy services to researchers
- Managed annual university/grant-funded base budget of $300K for staff salaries, equipment and supplies
- Developed and managed fee structure for core lab services
- Reported user data and research outcomes to central university administration

2006-07 **Associate Director**, School of Life Sciences, UNLV

Primary Responsibilities

- Advised School of Life Sciences Director on matters of finances, personnel issues, course scheduling, space use, student concerns, etc.
- Represented School and College at recruiting events

- Organized Juanita Greer White Distinguished Lecture Series
- Organized course annual scheduling and teaching and classroom assignments

2005-09 **Associate Professor with tenure**, Department of Biological Sciences, UNLV

1999-2005 **Assistant Professor**, Department of Biological Sciences, UNLV

1998-99 **Postdoctoral Research Associate**, Department of Organismal Biology and Anatomy, The University of Chicago

1997-98 **Graduate Research Assistant**, Department of Biology, Arizona State University

1993-97 **Graduate Teaching Assistant**, Department of Biology, Arizona State University

1993 **Instructor**, Biology Department, Millikin University, Decatur, IL

1990-92 **Graduate Teaching Assistant**, Department of Biological Sciences, Illinois State University

1989 **Undergraduate Teaching Assistant**, Department of Biological Sciences, Illinois State University

EDUCATION:

1998 Ph.D., Arizona State University, Tempe: Biology

1992 M.S., Illinois State University, Normal: Biological Sciences

1990 B.S., Illinois State University, Normal: Biological Sciences

HONORS, AWARDS, AND RECOGNITIONS:

2018 Inducted to the Ottawa (IL) Township High School Educational Foundation Hall of Fame

2014 Antarctica Service Medal, National Science Foundation

2014 CMU Professor's Merit Award

2007 National Science Foundation "Highlights" recognition for aging research

2007 Distinguished Service Award, UNLV College of Sciences

2006 Herman E. Brockman Distinguished Alumni Seminar in Genetics, Department of Biological Sciences, Illinois State University

2004 Professor of the Year, UNLV Association of Pre-Health Professionals

2001-08 UNLV Faculty Merit Awards (6)

1998 Outstanding Graduate of the Graduate College, Arizona State University

1997 Procter and Gamble Professional Opportunity Award for Meritorious Research, The American Physiological Society, New Orleans, LA

1996 Scholander Award (Distinguished Research by a Young Investigator), The American Physiological Society, Washington, DC

1996 Environmental and Exercise Physiology Young Investigator Award, The American Physiological Society, Washington, DC

1995 Best Student Paper Award, Division of Comparative Physiology and Biochemistry, American Society of Zoologists, St. Louis, MO

1990 Graduated *magna cum laude*: Illinois State University

RESEARCH INTERESTS:

Projects: Comparative and integrative physiology: insect flight aerodynamics and energetics; stress tolerance; learning and memory; aging and senescence; locomotion biomechanics

Professional Societies: Society for Integrative and Comparative Biology (lifetime member), American Physiological Society, Entomological Society of America

FUNDING:

<u>Funded Federal/Extramural Grants</u>

2007-11 National Science Foundation IOS-0725030, "An Experimental Test of Senescence and Aging Mechanisms in a Free-living Organism", (S. P. Roberts [co-PI]; M. M. Elekonich [PI]), $697,822

2007-09 National Institutes of Health FAR055033A "The effect of oxidative stress on muscle damage and functional senescence". National Research Service Award Postdoctoral Fellowship to Dr. Jason Williams (S. P. Roberts and M. M. Elekonich [co-mentors]), $98,000

2006-08 National Institutes of Health R21-RR022885 (Exploratory/Developmental) "Cryopreservation of the Model Organism *Drosophila melanogaster*". PI: Dr. Brent Sinclair (postdoctoral researcher in my lab at the time of award). Co-PIs: S.P. Roberts, A.G. Gibbs, V. Kostal. $406,375

2005-08 National Science Foundation Experimental Program to Stimulate Competitive Research (EPSCoR) Infrastructure Grant EPS-0447416, "Cognitive Information Processing" (PI: S. Louis; co-PI's: S.P. Roberts and 5 others), $3,147,000. Part of Nevada statewide proposal "Research for Nevada's growth – targeting research with uniqueness and excellence III (RING-TRUE II)." $15,000,000 (lead: D. Lindle)

2005-06 National Science Foundation IBN-0517635, “Ecology of heat-shock protein expression in honey bees: effects of age, behavior, and tissue heterothermia” (S. P. Roberts [co-PI]; M. M. Elekonich [PI]), $150,000

2002-05 National Science Foundation IBN-0213921, “Influence of Sensory Input and Environmental Stress on Brain Development, Behavior and Genomic Activity in *Drosophila*” (S. P. Roberts [co-PI]; J. S. deBelle [PI]), $304,655

2002-05 National Science Foundation Experimental Program to Stimulate Competitive Research (EPSCoR) Infrastructure Grant EPS-0132556, “Integrative Approaches to Abiotic Stress” (equal co-PI’s: S. P. Roberts, C. Reiber and J. Cushman), $3,318,000. Part of Nevada statewide proposal “Research for Nevada’s growth – targeting research with uniqueness and excellence II (RING-TRUE II).” $15,000,000 (lead: J. Coleman)

2000-03 National Science Foundation IBN-9986158/IBN-9986163: “Collaborative Research: Ecological and Evolutionary Physiology of the Stress Response and Stress Proteins” $488,965 (Collaborator: M. E. Feder, University of Chicago)

1995-97 National Science Foundation Doctoral Dissertation Improvement Grant IBN-9521543, “Thermoregulation during Flight and its Functional Consequences in the Honey Bee *Apis mellifera*” $9,960

Funded State/Local/Intramural Grants

2020-21 Missouri Department of Social Services Children’s Division Grant, “Little Miners Child Care Center at Missouri University of Science and Technology”, $2,710,252 (S. P. Roberts [PI]; K. M. Northcut [co-PI])

2005-09 National Institute of Health Idea Network of Biomedical Research Excellence (INBRE) Subaward “Life Science Core Laboratories Personnel and Operations” $1,283,500

1999-08 UNLV Barrick/Faculty Senate Travel Awards (4), $2,600

2007 President’s Research Award “It’s not the Age, it’s the Mileage: Influences of Activity on Aging, Longevity and Muscle Function” $50,000 (co-PI)

2005 National Science Foundation Nevada EPSCoR Development Grant in Advanced Computing in Environmental Sciences, “Aerodynamic Mechanisms of Force Production in Hovering Insects: New Insights into Design Principles for Micro-Aerial Vehicles” $17,500

2004 UNLV Stimulation/Implementation/Transition/Enhancement (SITE) Award, “Genetic and Physiological Adaptation to High Altitude in Andean Birds” $4,500

2004 UNLV Planning Initiative Award, “Scientific Instrumentation for a New Forensic Sciences Degree Concentration at UNLV” (Primary author: S. P. Roberts; Secondary authors: C. Reiber, J. Thompson, J. Ward) $30,000

2004 National Institute of Health Nevada Biomedical Research Infrastructure Network (BRIN) Core Use Incentive Grant, “Effect of Environmental Stress and Heat-Shock Protein Expression on Brain Development, Function and Gene Expression in *Drosophila melanogaster*” (co-authors: S. P. Roberts and J. S. de Belle), $6,300

2003 National Institute of Health Nevada Biomedical Research Infrastructure Network (BRIN) Core Use Incentive Grant, “Influence of Sensory Input and Environmental Stress on Brain Development, Behavior and Genomic Activity in *Drosophila*” (co-authors: S. P. Roberts and J. S. de Belle), $6,300

2002 State of Nevada Applied Research Initiative Grant, “Africanized Honey Bee Abatement in Southern Nevada” $20,000

2002 National Science Foundation Nevada EPSCoR Biotechnology Teaching Equipment Award, “Molecular Biology Training for UNLV Undergraduates” $12,000

2001 National Science Foundation Nevada EPSCoR Seed Grant in Environmental Biology, “Genetic vs. Environmental Determinism: Influence of Sensory Input and Environmental Stress on Brain Development, Behavior and Genomic Activity in Drosophila” (co-authors: J. S. de Belle and S. P. Roberts), $20,000

2001 National Science Foundation Nevada EPSCoR Start-up Award, $30,000

2001 UNLV SITE Award, “*Drosophila* Medium Preparation Facility” $2,500

2001 UNLV Planning Initiative Award, “Microscopes for Biology Education” (Primary author: S. P. Roberts; Secondary author: C. Reiber) $30,000

2000 UNLV SITE Award, “Ecological and evolutionary physiology of the stress response and stress proteins” $5,000

2000 UNLV New Investigator Award, “Ecological and Evolutionary Physiology of the Stress Response and Stress Proteins” $5,000

2000 UNLV Department of Biological Sciences Aquatic Biology Research Grant, “Thermal Ecology and Developmental Sensitivity in Container-Breeding Mosquitoes” $3,500

1993-98 Arizona State University Graduate Fellowship (1), Scholarships (2) and Travel Awards (2), $23,965

PUBLICATIONS:
Author key:
*** undergraduate student**
† graduate student
§ postdoc

Books and Book Chapters

1. Harrison, J. F., H. A. Woods and **S. P. Roberts**. 2012. *Ecological and Environmental Physiology of Insects.* Oxford University Press Inc. New York. 378 pp. ISBN 978-0-19-922594-1. Reviewed by Behmer, S.T. 2012. *Ecology* 93(12): 2772-2773, and Davidowitz, G. 2013. *The Quarterly Review of Biology* 88(1): 50.

2. Williams§, J. B., **S. P. Roberts** and M. M. Elekonich. 2008. Heat Shock Proteins and Their Role in Generating, Maintaining and Even Preventing Alternative Insect Phenotypes. In *Phenotypic Plasticity in Insects: Mechanisms and Consequences.* D. W. Whitman and T. N. Ananthakrishnan, Editors. Science Publishers, Inc. Plymouth, UK.

Scientific Journal Articles

1. Margotta†, J. W., **S. P. Roberts** and M. M. Elekonich. 2018. Effects of flight activity and age on oxidative stress in the honey bee *Apis mellifera*. *Journal of Experimental Biology*. 221: jeb183228

2. Wang†, X., A. Amei, J. S. DeBelle and **S. P. Roberts**. 2018. Environmental effects on *Drosophila* brain development and learning. *Journal of Experimental Biology*. 221: jeb169375

3. Vance†, J., D. L. Altshuler, M. H. Dickinson and **S. P. Roberts**. 2014. Hovering flight in the honey bee *Apis mellifera*: Kinematic mechanisms for varying aerodynamic forces. *Physiological Biochemistry and Zoology* 87: 870-881. See also Neil Savage. 2015. Aerodynamics: vortices and robobees. *Nature*. 521: S64–S65.

4. Vance†, J. T., and **S. P. Roberts**. 2014. The effects of artificial wing wear on the flight capacity of the honey bee *Apis mellifera*. *Journal of Insect Physiology* 65: 27-36.

5. Lane†, S. J., W. A. Frankino, M. E. Elekonich and **S. P. Roberts**. 2014. The effects of age and lifetime flight behavior on flight capacity in *Drosophila melanogaster*. *Journal of Experimental Biology* 217: 1437-1443. Featured article. See also Kathryn Knight. 2014. Inside JEB: Inactivity exacerbates flies' senescence. *Journal of Experimental Biology* 217: 1420.

6. Margotta†, J. W., G. E. Mancinelli*, A. A. Benito*, A. Ammons§, **S. P. Roberts** and M. M. Elekonich. 2013. Effects of flight on gene expression and aging in the honey bee brain and flight muscle. *Insects* 3(4): 9-30.

7. Sinclair, B. J., A. G. Gibbs, W. K. Lee, A. Rajamohan§, **S. P. Roberts** and J. Socha. 2009. Synchrotron x-ray visualization of ice formation in insects during lethal and non-lethal freezing. *PLoS One* 4(12): e8259

8. Vance†, J. T., J. B. Williams§, M. M. Elekonich and **S. P. Roberts**. 2009. The effects of age and behavioral development on honey bee (*Apis mellifera*) flight performance. *The Journal of Experimental Biology* 212: 2604-2611. Featured article. See also Kathryn Knight. 2009. Inside JEB: Light foragers hover better than heavy nurses. *Journal of Experimental Biology* 212: iii

9. Stark, L. R., D. N. McLetchie and **S. P. Roberts**. 2009. Gender Differences and a new adult eukaryotic record for upper thermal tolerance in the desert moss *Syntrichia caninervi. The Journal of Thermal Biology* 34: 131-137.

10. Frazier†, M. R., J. F. Harrison, S. D. Kirkton and **S. P. Roberts**. 2008. Cold rearing improves cold-flight performance in *Drosophila* via changes in wing morphology. *The Journal of Experimental Biology* 211: 2116-2122.

11. Williams§, J. B., **S. P. Roberts,** and M. M. Elekonich. 2008. Age and natural metabolically-intensive behavior affect oxidative stress and antioxidant mechanisms. *Experimental Gerontology* 43: 538-549.

12. Sinclair§, B. J., A. G. Gibbs and **S. P. Roberts**. 2007. Gene transcription during exposure to and recovery from cold and desiccation stress in *Drosophila melanogaster*. *Insect Molecular Biology* 16: 435-443.

13. Wang†, X., D. S. Green, **S. P. Roberts** and J. S. de Belle. 2007. Thermal disruption of mushroom body development and odor learning in *Drosophila melanogaster*. *PLoS ONE* 2(11): e1125.

14. Sinclair§, B. J., S. Nelson*, T. L. Nilson*, **S. P. Roberts** and A. G. Gibbs. 2007. The effect of selection for desiccation resistance on cold tolerance of *Drosophila melanogaster. Physiological Entomology* 32: 322-327.

15. Nilson*, T. L., B. J. Sinclair§ and **S. P. Roberts**. 2006. The effects of carbon dioxide anesthesia and anoxia on rapid cold-hardening and chill coma recovery in *Drosophila melanogaster*. *Journal of Insect Physiology* 52: 1027-1033.

16. **Roberts, S. P.** and M. M. Elekonich. 2005. Muscle biochemistry and the ontogeny of flight capacity during behavioral development in the honey bee *Apis mellifera*. *The Journal of Experimental Biology* 208: 4193-4198.

17. **Roberts, S. P**. 2005. Effects of flight behavior on body temperature and kinematics during inter-male mate competition in the solitary desert bee *Centris pallida*. *Physiological Entomology* 30: 151-157.

18. Altshuler§, D. L., W. B. Dickson§, J. T. Vance†, **S. P. Roberts** and M. H. Dickinson. 2005. Short amplitude, high frequency wing strokes determine the aerodynamics of honeybee flight. *Proceedings of the National Academy of Science* 102: 18213-18218. Featured in the Wildlife section (page 30) of the August 2008 issue of *National Geographic*. See also Neil Savage. 2015. Aerodynamics: vortices and robobees. *Nature*. 521: S64–S65.

19. Sinclair§, B. J. and **S. P. Roberts**. 2005. Acclimation, shock and hardening in the cold. *The Journal of Thermal Biology* 30: 557-562.

20. Elekonich, M. M. and **S. P. Roberts**. 2005. Honey bees as a model for understanding mechanisms of life history transitions. *Comparative Biochemistry and Physiology* A141: 362-371.

21. Reiber, C. L. and **S. P. Roberts**. 2005. Ontogeny of physiological regulatory mechanisms: fitting into the environment. *Comparative Biochemistry and Physiology* A141: 359-361.

22. Guadagnoli[†], J. A., A. M. Braun[§], **S. P. Roberts** and C. L. Reiber. 2005. Environment influences hemoglobin subunit structure in the branchiopod crustacean *Triops longicaudatus*. *The Journal of Experimental Biology* 208:3543-3551.

23. **Roberts, S. P.**, J. F. Harrison and R. Dudley. 2004. Allometry of kinematics and energetics in carpenter bees (*Xylocopa varipuncta)* hovering in variable-density gases. *The Journal of Experimental Biology* 207: 993-1004.

24. Williams[§], K. D., A. B. Helin[*], J. Posluszny[*], **S. P. Roberts** and M. E. Feder. 2003. Effect of heat shock, pretreatment, and *hsp70* copy number on wing development in *Drosophila melanogaster*. *Molecular Ecology* 12: 1165-1177.

25. **Roberts, S. P.**, M. E. Feder and J. H. Marden. 2003. Dropping like flies: Environmentally-induced impairment and protection of locomotor performance in adult *Drosophila melanogaster*. *Physiological and Biochemical Zoology* 75:615-621.

26. Feuerbacher[*], E. N., J. F. Harrison, J. H. Fewell, **S. P. Roberts** and E. F. Smith[†]. 2003. Loading effects on flight metabolic rate and mechanical power output in the honey bee, *Apis mellifera. The Journal of Experimental Biology* 206: 1855-1865.

27. Krebs, R. A., **S. P. Roberts**, B. R. Bettencourt[†] and M. E. Feder. 2001. Evolution of thermotolerance and Hsp70 expression in *Drosophila melanogaster* in the absence of stress. *Journal of Evolutionary Biology* 14: 75-82.

28. **Roberts, S. P.**, and M. E. Feder. 2000. Changing fitness consequences of *hsp70* copy number in transgenic *Drosophila* larvae undergoing natural thermal stress. *Functional Ecology* 14: 353-357.

29. Feder, M. E., **S. P. Roberts**, and A. C. Bordelon[*]. 2000. Molecular thermal telemetry of free-ranging adult *Drosophila melanogaster*. *Oecologia* 123: 460-465.

30. Harrison, J. F., and **S. P. Roberts**. 2000. Flight respiration and energetics. *Annual Review of Physiology* 62: 179-205.

31. **Roberts[§], S. P.**, and M. E. Feder. 1999. Natural hyperthermia and expression of the heat-shock protein Hsp70 affect developmental abnormalities in *Drosophila melanogaster*. *Oecologia* 121: 323-329.

32. **Roberts[†], S. P.**, and J. F. Harrison. 1999. Mechanisms of thermal stability during flight in the honey bee *Apis mellifera*. *The Journal of Experimental Biology* 202: 1523-1533.

33. **Roberts†, S. P.**, J. F. Harrison and N. F. Hadley. 1998. Mechanisms of thermal balance in flying *Centris pallida* (Hymenoptera: Anthophoridae). *The Journal of Experimental Biology* 201: 2321-2331.

34. **Roberts†, S. P.**, and J. F. Harrison. 1998. Mechanisms of thermoregulation in flying bees. *American Zoologist* 38: 492-502.

35. Harrison, J. F., J. H. Fewell, **S. P. Roberts†** and H. G. Hall. 1997. Reply to Heinrich, Esch, Stevenson and Woods. *Science* 276: 1016-1017.

36. Joos, B., J. R. B. Lighton, J. F. Harrison, R. K. Suarez and **S. P. Roberts†**. 1997. Effects of ambient oxygen tension on flight performance, metabolism, and water loss of the honey bee. *Physiological Zoology* 70: 167-174.

37. Suarez, R. K., J. R. B. Lighton, B. Joos, **S. P. Roberts†** and J. F. Harrison. 1996. Energy metabolism, enzymatic flux capacities and metabolic flux rates in flying honey bees. *Proceedings of the National Academy of Science* 93: 12616-12620.

38. Harrison, J. F., J. H. Fewell, **S. P. Roberts†** and H. G. Hall. 1996. Achievement of thermal stability by varying metabolic heat production in flying honey bees. *Science* 274: 88-90.

39. **Roberts†, S. P.**, M. C. Quinlan† and N. F. Hadley. 1994. Interactive effects of humidity and temperature on water loss in the lubber grasshopper *Romalea guttata*. *Comparative Biochemistry and Physiology* A109: 627-631.

Popular Articles

Scott, E. C. *et al*., (Scott plus 284 authors with the given name of Steve, or an iteration of Steve). 2004. The morphology of Steve. *Annals of Improbable Research* 10:24-29. This article is a promotional effort to support "Project Steve" of The National Center for Science Education, which aims to increase the awareness of evolutionary biology as important in K-12 curricula.

ABSTRACTS:

(those of work that has been subsequently published as full articles are not repeated here)

1. **Roberts, S. P.**, A. Mahon and K. Halanych. 2016. Biomechanics of Locomotion in Antarctic Sea Spiders (Pycnogonida). FASEB Journal 30(1):1229.8

2. Brewer†, M. L. and **S. P. Roberts**. 2006. High-speed video analysis of flight maneuvers in dipterans. *Integrative and Comparative Biology* 46:E16.

3. **Roberts, S. P.**, H. R. Crudgington§ and R. R. Snook. 2006. Experimental manipulation of sexual selection and the evolution of locomotor performance in *Drosophila pseudoobscura*. *Integrative and Comparative Biology* 46:E119.

4. Brewer†, M. L., Z. A. Cheviron†, R. T. Brumfield and **S. P. Roberts**. 2005. Altitudinal variation of wing shape in the Andean passerine *Zonotrichia capensis*. *Integrative and Comparative Biology* 45:970

INVITED LECTURES AND MAJOR SYMPOSIA PRESENTATIONS:

2015 Department of Biological Sciences, Missouri University of Science and Technology

2014 Department of Biology, Central Michigan University
College of Arts, Science and Business, Missouri University of Science and Technology

2011 Department of Biology, Eastern Michigan University

2010 Department of Biology, Western Ontario University
Central Michigan University Biological Station

2009 School of Life Sciences, Arizona State University
Department of Biology, Central Michigan University

2008 Department of Entomology, Texas A&M University
Department of Biology, University of Houston
Department of Biology, Eastern Illinois University
Department of Biological Sciences, Michigan Technological University
Department of Biological Sciences, Western Michigan University
College of Agriculture Cooperative Extension, University of Nevada-Reno

2006 Department of Biological Sciences, Illinois State University

2004 Department of Biological Sciences, University of North Carolina-Wilmington
Department of Biological Sciences, UNLV (2)
Society for Integrative and Comparative Biology Symposium, "Ontogeny of physiological regulatory mechanisms: Fitting into the environment" New Orleans, LA

2003 Department of Animal and Plant Sciences, University of Sheffield, UK
Division of Biology, Kansas State University (2)

2002 Department of Entomology, University of Illinois
Department of Entomology, University of Arizona
Department of Kinesiology, UNLV
Nevada NSF EPSCoR Symposium on Genomic Study of Abiotic Stress Adaptation, Lake Tahoe, NV

1998 Department of Biological Sciences, UNLV
Natural History Seminar Series, Department of Ecology and Evolution, The University of Chicago
Engineering Foundation Conference, "Mechanics of plants, animals and their environments: Integrative perspectives." Santa Barbara, CA

1996 Society for Integrative and Comparative Biology Symposium, “Responses of terrestrial invertebrates to variation in temperature and water availability: Molecular, organismal and evolutionary approaches.” Albuquerque, NM
Center for Insect Science HexaPodium, Tucson, AZ

1993 Department of Biology, Millikin University, Decatur, IL

SELECTED PRESENTATIONS AT NATIONAL/INTERNATIONAL CONFERENCES (Since 2000):

2019 Gateway Conference on Philanthropy 2019, St. Louis, MO “Building an advisory group from the ground up”

2016 American Physiological Society, Experimental Biology 2016, San Diego, CA “Biomechanics of Locomotion in Antarctic Sea Spiders (Pycnogonida)”

Society for Integrative and Comparative Biology, Portland, OR “Biomechanics of locomotion in Antarctic sea spiders (Pycnogonida)”

2014 Society for Integrative and Comparative Biology, Austin, TX “Understanding how honey bee flight and senescence are connected through oxidative stress”

Society for Integrative and Comparative Biology, Austin, TX “The effects of age and lifetime flight behavior on flight capacity in *Drosophila melanogaster*”

American Physiological Society, Experimental Biology 2014, San Diego, CA “Effects of age and lifetime flight behavior on senescence and reproduction in *Drosophila*”

American Physiological Society, Experimental Biology 2014, San Diego, CA “Understanding how honey bee flight and senescence are connected through oxidative stress”

2012 Society for Integrative and Comparative Biology, Charleston, SC “The aging and senescence of *Drosophila* from different behavioral regimes”

American Physiological Society, Experimental Biology 2012, San Diego, CA “Effects of age and lifetime behavioral patterns on locomotion in *Drosophila*”

Entomological Society of America, Knoxville, TN “The effect of age and lifetime flight behavior on reproduction in *Drosophila melanogaster*”

Entomological Society of America, Knoxville, TN “The effect of age and lifetime flight behavior on dipteran flight muscle ultrastructure”

Entomological Society of America, Knoxville, TN “The effect of age and lifetime flight behavior on flight capacity in *Drosophila melanogaster*”

2010 Society for Integrative and Comparative Biology, Seattle, WA “Environmental effects on *Drosophila* brain development and learning”

Society for Integrative and Comparative Biology, Seattle, WA “The cellular cost of metabolic behavior for aging and life histories”

2009 Society for Integrative and Comparative Biology, Boston, MA **“**Effects of age and behavioral development on the flight capacity of honey bees”

2008 Entomological Society of America, Reno, NV “Aerodynamic mechanisms of flight maneuverability in syrphid flies”

American Physiological Society Exercise Physiology Meeting, Hilton Head, SC “Oxidative Stress and antioxidant mechanisms at the transition to an aerobically intensive lifestyle in honey bees”

2007 Entomological Society of America, San Diego, CA “Sexual selection and the evolution of physiological performance in *Drosophila*”

Society for Integrative and Comparative Biology, Phoenix, AZ **“**Evolution of locomotor capacity in *Drosophila pseudoobscura* lines selected for monogamy and enhanced promiscuity”

Physiological Ecology Conclave, Bishop, CA. “Stress-induced disruption of brain development, learning and memory in *Drosophila*”

2006 American Physiological Society Conference, Virginia Beach, VA “Effects of behavioral development, temperature and tissue type on the activity of 70kD heat-shock proteins and their encoding genes in honey bees”

5th International Symposium on Molecular Insect Science, Tucson, AZ “Extraordinary thermotolerance and Hsp70 induction temperatures in the honey bee *Apis mellifera*”

2005 Entomological Society of America, Ft. Lauderdale, FL “High speed kinematic analysis of honey bee flight in variable-density atmospheres: mechanisms of force production and limits of aerodynamic performance”

The First International Symposium on the Environmental Physiology of Ectotherms and Plants, Roskilde, Denmark “Hyperthermia and the expression of heat-shock proteins in free-living insects”

Society for Integrative and Comparative Biology, San Diego, CA “Stress-induced disruption of brain development, learning and memory in *Drosophila*”

2004 Annual meeting of the North American Section of the International Union for the Study of Social Insects, Camp Tontozona, AZ “Limits to maximal flight performance in *Apis mellifera*”

Annual meeting of the North American Section of the International Union for the Study of Social Insects, Camp Tontozona, AZ "Hsp70 expression and induction varies with behavior and tissue type in the honey bee"

International Behavioral Neuroscience Society, Key West, FL "Stress-induced disruption of brain development and behavior in *Drosophila melanogaster*"

2003 Gordon Research Conference: Ecological and Evolutionary Functional Genomics, New London, NH. "Growing up on the wrong side of the tree: Developmental and functional consequences of thermal stress and Hsp70 expression in *Drosophila*"

American Physiological Society, Experimental Biology 2003, San Diego, CA. "Stress-induced disruption of brain development in *Drosophila melanogaster*"

2002 Entomological Society of America, Ft. Lauderdale, FL "When bad things happen to good flies: Environmentally-induced impairment and protection of locomotor performance in adult *Drosophila melanogaster*"

American Physiological Society, The Power of Comparative Physiology: Evolution, Integration and Application, San Diego, CA "Temperature-dependent plasticity of aerodynamic design in *Drosophila*: Implications for kinematics and free-flight ability"

Annual *Drosophila* Research Conference of The Genetics Society of America, San Diego, CA "Anatomical and behavioral consequences of stress-induced disruption of *Drosophila* mushroom body development"

Society for Integrative and Comparative Biology, Anaheim, CA **"**Temperature sensitivity of aerodynamic design and flight performance in *Drosophila melanogaster*."

2001 Society for Comparative and Integrative Biology, Chicago, IL. "Developmental and fitness consequences of natural thermal stress and *hsp70* copy number in *Drosophila melanogaster*."

2000 Physiological Ecology Conclave, Bishop, CA. "Natural heat stress and the heat-shock protein Hsp70 affect developmental stability and survivorship in *Drosophila melanogaster*."

American Physiological Society, Experimental Biology 2000, San Diego, CA. "Natural hyperthermia and expression of Hsp70 affect larval survivorship and the incidence of developmental abnormalities in *Drosophila melanogaster*."

COVERAGE OF RESEARCH IN POPULAR MEDIA:

Honey Bee Flight: *National Geographic*, *Scientific American*, *New Scientist*, *Science Daily*, *San Francisco Chronicle*, *Los Angeles Times*, *The Guardian* (UK), Fox News, LiveScience.com, World-Science.net, PBS, MSNBC.com

Honey Bee Aging and Senescence: *Science Daily*, *Science Today*, Biologynews.net, Newswise.com, eSciencenews.com

Insect Thermal Biology: *Science Daily*, *Exchange Magazine*, eSciencenews.com

SERVICE:

Profession:

2014 **Co-organizer**, American Physiological Society Featured Topic Symposium, "Comparative Physiology of Aging and Senescence", San Diego, CA
2010 **Chair**, Regulation of Development Session, Society for Integrative and Comparative Biology, Seattle, WA
2009 **Chair**, Animal Locomotion – Flight Session, Society for Integrative and Comparative Biology, Boston, MA
2005 **Moderator**, Physiological Mechanisms Student Competition Session, Entomological Society of America, Ft. Lauderdale, FL
2005 **Chair**, Behavioral Mechanisms Session, Society for Integrative and Comparative Biology, San Diego, CA
2004 **Co-organizer**, Society for Integrative and Comparative Biology Symposium, "Ontogeny of physiological regulatory mechanisms: Fitting into the environment" New Orleans, LA
2003 **Co-organizer**, National Science Foundation Nevada EPSCoR Symposium "Integrative Approaches to Abiotic Stress" Las Vegas, NV
2002 **Judge**, Best Student Talk Competition, Society for Integrative and Comparative Biology Annual Meeting, Anaheim, CA

Reviewer for Federal Granting Agencies and Private Foundations:
-National Science Foundation (Ecological and Evolutionary Physiology, Structural Systems Cluster *ad hoc*; Doctoral Dissertation Improvement Grant panel)
-National Institutes of Health Minority Biomedical Research Support Program (*ad hoc*)
-National Research Foundation of South Africa (*ad hoc*)
-Earthwatch Institute (*ad hoc*)
-National Geographic Society (*ad hoc*)
-US Army Research Office (*ad hoc*)

Reviewer for Journals:

American Naturalist
Annals of the Entomological Society of America
Behavioral Ecology and Sociobiology
Biology Letters
BMC Ecology
Canadian Entomologist
Canadian Journal of Zoology
Comparative Biochemistry and Physiology
Ecological Monographs
Environmental Entomology
Entomologia Experimentalis et Applicata
Evolutionary Applications
Evolutionary Ecology
Functional Ecology
Genetica
Genome
Integrative and Comparative Biology
Insect Molecular Biology
Insectes Sociaux
Journal of Comparative Physiology
Journal of Experimental Biology
Journal of Insect Behavior
Journal of Insect Physiology
Naturwissenschaften
Physiological and Biochemical Zoology
Proceedings of the National Academy of Science
Proteome Science
Physiological Entomology

Zoology-Analysis of Complex Systems

Dissertation Thesis Examiner:
John Terblanche, University of Stellenbosch (Advisor: Steven Chown)

Reviewer for Reappointment/Tenure/Promotion:
Department of Zoology and Physiology, University of Wyoming
Department of Biological Sciences, North Dakota State University
Department of Zoology, University of Otago, New Zealand
School of Biological Sciences, Illinois State University
Department of Biology, College of Southern Nevada
Biology Department, University of North Florida
Biology Department, College of William and Mary, VA

External Reviewer of Academic Program
Department of Biology, University of Vermont

System:

2019-present	**Member**, University of Missouri System Council of Provosts
2018	**Member**, Missouri S&T Chancellor Search Committee
2018	**Member**, University of Missouri System Council of Leaders for Administrative Reform
2018	**Member**, University of Missouri System Strategic Plan Review Committee
2016	**Member**, University of Missouri System Diversity, Equity & Inclusion (DEI) Task Force
2005-09	**Member**, Nevada NSF EPSCoR Cognitive Information Processing Steering Committee
2002-06	**Member**, Nevada NSF EPSCoR Integrative Biology Steering Committee
2004	**Member**, NSF Nevada EPSCoR Summer Fellowship Review Committee
2002-04	**Member**, NIH Nevada BRIN Summer Fellowship Review Committee
2002	**Member**, NIH Nevada BRIN Core Use Grant Review Committee
2002	**Representative** of Nevada System of Higher Education (NSHE), Quality in Undergraduate Education (QUE) National Meeting, Baltimore, MD
2000	**Representative** of NSHE, QUE National Meeting, Atlanta, GA

University:

2018	**Member**, Missouri S&T Space Committee
2017-present	**Member**, Missouri S&T Chancellor's Cabinet
2017-present	**Member**, Missouri S&T Internationalization Committee
2017-18	**Co-chair**, Missouri S&T Vice Chancellor for Research and Dean of Graduate Studies Search Committee
2017	**Member**, Missouri S&T Fiscal Sustainability Task Force
2016-present	**Member**, Chancellor's Policy Council
2015-present	**Member**, Missouri S&T Faculty Achievement Awards Committee
2015-present	**Chair**, Missouri S&T/Phelps County Regional Medical Ozark Biomedical Initiative Executive Board
2016	**Member**, Deans Resource Task Force
2015	**Member**, Missouri S&T Campus Sexual Assault Prevention and Strategic Curriculum Committee
2014	**Member**, Missouri S&T Special Task Force for Special Assistant to the Provost
2014	**Member**, Missouri S&T Scholarship Advisory Board

2014 **Member**, Missouri S&T Strategic Sustainability Committee
2014 **Member**, Missouri S&T Vice Provost of Academic Affairs Rapid Action Task Force
2013-14 **Member**, CMU Vivarium Advisory Committee to the Office of Research and Sponsored Projects
2009-14 **Member**, CMU Faculty Advisory Committee of the Office of Research and Sponsored Projects
2011-12 **Member**, CMU Bioscience Building Programming Committee
2010 **Member**, CMU Research Profile Committee
2010 **Member**, CMU Founding Dean of Medicine Search Committee
2009, 2013 **Faculty Marshal**, CMU Fall Commencement Ceremony
2009 **Member**, UNLV Science and Engineering Building Steering Committee
2004 **Representative** of UNLV, National Science Foundation IGERT Workshop, Alexandria, VA
2003-04 **Member**, Forensic Science Degree Program Organizing Committee
2003 **Member**, UNLV New Investigator Award Review Committee
2000-02 **Member**, UNLV Admissions Committee

College:
2014 **Member**, CMU Brooks Hall Space Planning Committee
2014 **Member**, CMU School of Engineering Strategic Planning Committee
2013-14 **Member**, CMU Bioscience Building Research Sub-committee
2012 **Member**, CMU College of Medicine Human Reproduction and Development Course Design Committee
2012 **Member**, Earth Science Council, CMU College of Science and Technology
2010 **Member**, CMU College of Science and Technology Residential College Advisory Board
2008 **Member**, UNLV College of Sciences Faculty Awards Committee
2006-08 **Member**, UNLV College of Sciences Curriculum Committee
2006 **Presenter**, UNLV Scholar Day (recruitment forum)
1999-05 **Member**, Pre-professional Advisory Committee, UNLV College of Sciences
2004 **Member**, UNLV Undergraduate Services Director Search Committee
2003-04 **Member**, Pre-professional Advisory Council to the UNLV Dean of Sciences
2000-03 **Chair**, Pre-professional Advisory Committee, UNLV College of Sciences
2002 **Interviewer**, UNLV Dental School Admissions
2001 **Member**, UNLV College of Sciences Undergraduate Advising Director Search Committee
2000-01 **Representative** of College of Sciences, UNLV Recruitment Forums at various Las Vegas high schools

Department/School:
2014 **Member**, CMU Department of Biology Graduate Committee
2009-14 **Member**, CMU Department of Biology Reappointment, Tenure and Promotion Committee
2009-14 **Member**, CMU Department of Biology Executive Committee
2009-13 **Representative** of the CMU Department of Biology at “CMU & You Day”
2007-09 **Member**, UNLV School of Life Sciences Space Committee
2006-09 **Director**, UNLV School of Life Sciences Core Laboratories
1999-09 **Coordinator**, BIO 189/190 introductory course sequence, UNLV School of Life Sciences
2006-07 **Associate Director**, UNLV School of Life Sciences

2006-07 **Undergraduate Coordinator**, UNLV School of Life Sciences
2006-07 **Chair**, Biomechanics Search Committee, UNLV School of Life Sciences
2003-06 **Director**, UNLV Genomics Center
2002-06 **Co-director**, UNLV Drosophila Kitchen
2001-06 **Member**, Personnel Committee, UNLV Department of Biological Sciences
2004-05 **Chair,** UNLV Biology Education Specialist Search Committee
2004 **Member**, UNLV School of Life Sciences Organization Committee
2004 **Member**, UNLV Laboratory Coordinator Search Committee
2003-04 **Chair**, UNLV Integrative Physiologist Search Committee
2002-03 **Member**, Curriculum Committee, UNLV Department of Biological Sciences
2002 **Organizer**, UNLV Juanita Greer White Distinguished Lecture
2002-03 **Member**, UNLV Integrative Physiologist Search Committee
2001-02 **Member**, UNLV Cell Physiologist Search Committee
2001 **Co-organizer**, UNLV Juanita Greer White Distinguished Lecture
2000-01 **Member**, UNLV Cell Biologist Search Committee
2000-01 **Member**, UNLV Graduate Student Diagnostic Examination Committee

Public:

2018 **Presenter**, "Birding and other wildlife encounters in the jungles, deserts, and polar regions", Ozark Audubon Chapter, Rolla, MO
2015 **Presenter**, "Evolution of a Biologist" Licking High School, Licking, MO
2015 **Consultant**, St Louis Science Center, Pollination biology
2014 **Presenter**, Missouri S&T Common Call Campus Ministry, "An evolutionary biologist's interpretation of "Darwin's Dilemma""
2013-14 **Advisor**, Science Olympiad, Sacred Heart Academy, Mt Pleasant, MI
2014 **Interviewee**, The Saginaw News, Saginaw, MI, Insect winter survival
2012 **Interviewee**, WMHW, Mt Pleasant MI, CMU Bioscience Building
2012 **Consultant**, Sherman Township Marshal's Office, Isabella County, MI
2011 **Consultant**, Bos and Glazier, Trial Attorneys, Grand Rapids, MI
2010 **Interviewee**, *Bay City Times*, Bay City, MI, Ichneumonid wasps
2009 **Member**, Nevada State Insect Selection Committee
2008 **Consultant**, Insect collection and curation, Bureau of Land Management, Las Vegas, NV
2008 **Consultant**, Biotechnology Lab, Career and Technology Academy, Clark County School District, Las Vegas, NV
2004-09 **Presenter**, "Amazing Insect Defenses", "How Do Animals Fly?", "Incredible Eggs", "Age of Dinosaurs", Neil C. Twitchell Elementary School, Henderson, NV
2002-09 **Member**, Advisory Committee, Las Vegas Springs Preserve, Las Vegas, NV
2008 **Consultant**, Southern Nevada Health District, Zoonotic Diseases
2008 **Presenter**, "Insects in Flight" Las Vegas Master Gardeners
2003, 2008 **Judge**, Southern Nevada Regional Science and Engineering Fair
2003 **Arbitrator**, UNLV Science Bowl
2003 **Presenter**, "Science as a Process and Profession" Career Day, Foothills High School, Henderson, NV
2003 **Presenter**, UNLV Early Childhood Education Center
2002 **Presenter**, Smithsonian Institute O. Orkin Traveling Insect Safari, Las Vegas, NV
2001 **Presenter**, "Science as a Process and Profession" Ottawa High School, Ottawa, IL
2000 **Presenter**, UNLV Science Bowl
2000 **Presenter**, UNLV Science and Technology Day
1996-97 **Consultant**, Desert Botanical Garden, Phoenix, AZ

1996-97 **Advisor**, Science Literacy, Illinois Elementary School District #141, Ottawa, IL
1995-98 **Judge**, Broadmor Elementary School Science Fair, Tempe, AZ
1988-89 **Consultant**, Miller Zoological Park, Bloomington, IL

TEACHING:

Department of Biological Sciences, S&T

2020, Fall	BIO 3001	Ecophysiology (lecture [co-taught with 1 other instructor], 15)

Department of Biology, CMU

2014, Spring	BIO 490	Undergraduate Seminar, “Cardiopulmonary Disease” and “Renal Disease” (x2, seminar, 40)
2013, Fall	BIO 392	Mammalian Physiology (lecture, 168)
2013, Summer	BIO 305	General Entomology (lecture and lab, 6)
2013, Spring	BIO 490	Undergraduate Seminar, “Medical Entomology” (seminar, 19)
2012, Fall	BIO 305	General Entomology (lecture and lab, 16)
2012, Spring	BIO 110	Concepts of Biology (lecture, 124)
2011, Fall	BIO 110H	Concepts of Biology – Honors (lecture and lab, 48)
2011, Spring	BIO 110	Concepts of Biology (lecture, 121)
2010, Fall	BIO 110	Concepts of Biology (lecture, 127)
2010, Spring	BIO 105	Quantitative Biology (lecture, 56)

School of Life Sciences, UNLV

2009, Summer	BIO 189	Foundations in Biology (lecture, 97)
2009, Spring	BIO 437	Entomology (lecture, 16)
2008, Fall	BIO 447/647	Comparative Animal Physiology (lecture, 20)
2008, Summer	BIO 189	Foundations in Biology (lecture, 101)
2008, Spring	BIO 189	Foundations in Biology (lecture, 250)
2007, Fall	BIO 494	Biology Seminar Colloquium (seminar, 14)
2007, Summer	BIO 189	Foundations in Biology (lecture, 105)
2007, Spring	BIO 437	Entomology (lecture, 25)
	BIO 492	Independent Undergraduate Research

2006, Fall	BIO 447/647	Comparative Animal Physiology (lecture, 18)
2006, Summer	BIO 189	Foundations in Biology (lecture, 89)
2006, Spring	BIO 440/640	Mammalian Physiology (lecture, 95)
	BIO 492	Independent Undergraduate Research
	BIO 786	Bioenergetics (lecture, 12)
2005, Fall	BIO 189	Foundations in Biology (lecture, 220)
	BIO 492	Independent Undergraduate Research
2005, Summer	BIO 189	Foundations in Biology (lecture, 111)
2005, Spring	BIO 440	Mammalian Physiology (lecture, 85)
	BIO 496/796	Graduate Seminar “Physiology of Starvation” (seminar, 10)
	BIO 492	Independent Undergraduate Research
2004, Fall	BIO 447/647	Comparative Animal Physiology (lecture, 15)
2004, Summer	BIO 189	Foundations in Biology (lecture, 103)
2004, Spring	BIO 748	Environmental Physiology (lecture [co-taught with 5 other instructors], 9)
	BIO 496	Undergraduate Seminar, “Forensic Entomology” (seminar, 17)
2003, Fall	BIO 189	Foundations in Biology (lecture, 310)
	BIO 492	Independent Undergraduate Research
2003, Summer	BIO 209	Introduction to Cell Biology (lecture, 100)
2003, Spring	BIO 437	Entomology (lecture and lab, 29)
	BIO 492	Independent Undergraduate Research
2002, Fall	BIO 190	Principles of Modern Biology I (lecture, 36)
	BIO 492	Independent Undergraduate Research
2002, Summer	BIO 190	Principles of Modern Biology I (lecture, 94)
2002, Spring	BIO 492	Independent Undergraduate Research
	BIO 796	Graduate Seminar, “Comparative Biomechanics and Energetics of Animal Locomotion” (seminar, 5)
2001, Fall	BIO 492	Independent Undergraduate Research
2001, Summer	BIO 190	Principles of Modern Biology I (lecture, 113)
2001, Spring	BIO 190	Principles of Modern Biology I (lecture, 212)
	BIO 492	Independent Undergraduate Research
	BIO 796	Graduate Seminar “Inducible Responses” (seminar, 7)

2000, Fall	BIO 190	Principles of Modern Biology I (x2, lecture, 424)
	BIO 492	Independent Undergraduate Research
2000, Summer	BIO 190	Principles of Modern Biology I (lecture, 107)
2000, Spring	BIO 492	Independent Undergraduate Research
	BIO 748	Environmental Physiology (lecture, 4)
1999, Fall	BIO 190	Principles of Modern Biology I (lecture, 212)

Department of Biology, Millikin University

1993, Spring	BIO 102	Topics in Biology (lecture, 26)
	BIO 324	Ornithology (lecture and lab, 24)

TRAINEES:

Postdoctoral Researchers:

Dr. Andrew Ammons (Life Sciences, UNLV, 2008-2009; co-mentored with M. Elekonich; now Professor at Goshen College, Goshen, IN)
Dr. Jennifer Head (Nevada Genomics Center, Biological Sciences, UNLV, 2006-2009; co-mentored with C. Reiber; now permaculture designer at Northern Flicker Designs)
Dr. Jason Williams (Life Sciences, UNLV, 2005-2009; co-mentored with M. Elekonich; now Associate Professor at Southern Illinois University-Edwardsville)
Dr. Brent Sinclair (Life Sciences, UNLV, 2004-2006; now Professor of Biology at The University of Western Ontario)
Dr. Cheryl Vanier* (Nevada Genomics Center, Biological Sciences, UNLV, 2004-2005; co-mentored with C. Reiber; now independent statistical and experimental design consultant)
Dr. Alyssa Braun* (Nevada Genomics Center, Biological Sciences, UNLV, 2002-2004; co-mentored with C. Reiber; now Chair of Biological Science at Dominican University, River Forest, IL)

Graduate Students Directed:

Emily Martinez*[3] (M.S., Biology, CMU, now a Physician Assistant in Elmira, MI)
Georgina Mancinelli*‡ (M.S., Biology, CMU, now a postdoc at University of Illinois Chicago)
Stephen Lane[2] (M.S., Biology, CMU, 2013; now lecturer at Loyola University of Maryland)
Michael Brewer[6] (Ph.D., Biological Sciences, UNLV, 2013; co-mentored with A. Gibbs; now Assistant Professor at San Diego Mesa College)
Jason Vance[7] (Ph.D., Biological Sciences, UNLV, 2009; now Associate Professor at College of Charleston, SC)
Xia Wang* (Ph.D., Biological Sciences, UNLV, 2010; co-mentored with S. de Belle; now Staff Scientist at Touro University Nevada)

Other Graduate Student Committee Memberships:

Heather Himes* (M.S., Biology, CMU, 2015)
Daniel Gardner (M.S., Biology, CMU, 2015)
Paul Young (M.S., Biology, CMU, 2015)
Drew Russey (Ph.D., Biology and Biochemistry, University of Houston, 2014)
Teresa Mika* (Ph.D., Biological Sciences, UNLV, 2013)
Christine Serway* (Ph.D., Biological Sciences, UNLV, 2010)
Candice Rausch* (M.S., Biological Sciences, UNLV, 2008)

Brian Dunkelberger (Ph.D., Biological Sciences, UNLV, 2008)
Carren Knehr* (M.S., Biological Sciences, UNLV, 2006)
Jutta Guadagnoli* (Ph.D., Biological Sciences, UNLV, 2006)
Michelle Bleuze* (M.S., Anthropology, UNLV, 2005)
Jason Vance (M.S., Kinesiology, UNLV, 2003)
* (M.F.A., Department of Art, UNLV, 2003)
Aaron Payette (M.S., Biological Sciences, UNLV, 2003)
Stacey Harper* (Ph.D., Biological Sciences, UNLV, 2003)
Jennell Miller* (Ph.D., Biological Sciences, UNLV, 2002)
Chad Newell (M.S., Biological Sciences, UNLV, 2001)

Undergraduate Students:

CMU:

Laura Sandoe*	Danielle Kopke*[4]

UNLV:

Melissa Moynihan*	Doug Chenin	Rose Trinh*
Lorenzo Nichols‡	Abdul (Wally) Nuristani	Myra Thompson*‡
Shannon Bean*	Elisa Hotz*	Christian Davis
Georgina Callaway*	Terri Nilson*[5]	Brian Beard
Justin Terry	Sean Nelson	

*Female ‡Under-represented minority

1. 2014-16 Recipient of CMU Provost's Graduate Research Assistantship

2. 2012 Winner of Best Student Paper Award, Physiology and Biochemistry Section, Annual Meeting of the Entomological Society of America, Knoxville, TN

3. 2012 Winner of the Best Student Presentation at the Annual Meeting of the Michigan Microscopy and Microanalysis Society.

4. 2012 Recipient of the CMU Scholarship for Excellence in Confocal Microscopy

5. 2005 Recipient of National Institute of Health Undergraduate Fellowship (summer, $5,500)

6. 2005 Recipient of Nevada NSF EPSCoR Advanced Computing Graduate Fellowship (1 semester, $7,500); 2007 Recipient of Nevada NASA EPSCoR Graduate Assistantship (1 semester, $7,500)

7. 2004/2005 Recipient of Nevada NSF EPSCoR Graduate Fellowship (2 semesters, $15,000); 2005/2006 and 2006/2007 Recipient of Nevada NASA EPSCoR Nevada Space Grant Graduate Fellowship (4 semesters, $47,500); 2007 Winner of Best Student Paper Award, Physiology and Biochemistry, Annual Meeting of the Entomological Society of America, San Diego, CA