CURRICULUM VITAE: **Jon Fewell Harrison**

EDUCATION:

1973-1975	University of Virginia: Biology
1976-1978	University of Toronto: Biology; B.Sc. May, 1978
1978	University of Pittsburgh, School of Medicine: Medicine
1982-1987	University of Colorado, Boulder: Environmental, Population and Organismal Biology; Ph.D. December, 1987 Thesis Advisor: Dr. Todd T. Gleeson

PROFESSIONAL EXPERIENCE:

1988-1990	Postdoctoral fellow, Dept. of Zoology, University of British Columbia Postdoctoral supervisor: Dr. John E. Phillips
Jan 1991-Aug 97	Assistant Professor, Dept. of Zoology, Arizona State University
Aug 1997-2002	Associate Professor, Dept. of Biology, Arizona State University
Aug 2002-present	Professor, School of Life Sciences, Arizona State University
July 2005-2009	Associate Director (Facilities), School of Life Sciences
July 2010-present	Director of Research Infrastructure and Facilities, Office of Knowledge Enterprise Development, ASU

MAJOR RESEARCH INTERESTS:

Ecological and evolutionary physiology, insect physiology, respiratory and nutritional physiology

MEMBERSHIPS IN SCIENTIFIC SOCIETIES:

American Association for Advancement of Science, American Physiological Society, Entomological Society of America, International Union for the Study of Social Insects, Organization for Tropical Studies, Society for Integrative and Comparative Biology

HONORS:

2010	ASU Parent's Professor of the Year: Special Recognition
2010	ASU Graduate Mentor of the Year
2009	Selected member of Faculty of 1000 in Biology (Physiological Ecology)
2005	Elected Fellow of the American Association for the Advancement of Science
2005	Nominated for "Last Lecture Series" for outstanding teaching by ASU students (Co-Curricular Programs)
2002	Nominated for Dean's Distinguished Teaching Award, College of Liberal Arts and Sciences, Arizona State University
1998	Nominated for Outstanding Advising Award, College of Liberal Arts and Sciences, Arizona State University
1997	Nominated for Outstanding Teaching Award, College of Liberal Arts and Sciences, Arizona State University
1990	The Scholander Award (Best paper by a young investigator) American Physiological Society, Orlando, FL
1989-90	Izaak Walton Killam Postdoctoral Fellowship
1988-89	National Science Foundation (NATO) Postdoctoral Fellowship

NATIONAL/INTERNATIONAL SCIENTIFIC OFFICES AND SERVICES:

Organizer: XXIV International Congress of Entomology Symposium on: “Mechanisms of regulation of growth rate, size and shape in insects” for 2012 meeting in Daegu, Korea.

Program Officer, Society for Integrative and Comparative Biology (2011-2014)

Workshop Organizer and Leader, Variable Atmosphere Laboratory (VAL) for Climate Change Research. NSF-funded workshops in Feb. 2008 and August 2009.

Leader, Collaborative Development Team, Advanced X-ray Imaging Facility, Argonne National Labs (2008-2010)

Chair, Organizing Committee, American Physiological Society Intersociety Meeting in Comparative and Evolutionary Physiology (2007-2010)

Associate Editor, Physiological and Biochemical Zoology, 2007-present

Chair, Scholander Award Selection Committee, American Physiological Society, 2006

Program Officer, Comparative and Evolutionary Physiology Section, American Physiological Society, 2006-2009

Organizing Committee, International Congress in Comparative Physiology (American Physiological Society), 2004-5

Co-Organizer (with Stefan Hetz and Timothy Bradley): International Congress in Entomology Symposium on: “O_2 uptake, H_2O loss, and oxygen radical production: finding the balance, Brisbane, Australia, 2004.

Co-Organizer (with Robert Sterner): Society for Integrative and Comparative Biology Cross-Society Symposium on: “Integrated Research Challenges: Biological Stoichiometry from Genes to Ecosystems:” for Toronto, 2003 meeting.

Panel Member, Integrative Animal Biology, National Science Foundation, 2005

Panel Member, Environmental and Evolutionary Physiology, National Science Foundation, 2000, 2005

Program Officer, Division of Comparative Physiology and Biochemistry, Society for Integrative and Comparative Biology (2000-2003)

Editorial Board, Physiological and Biochemical Zoology (1999-2007)

Best Student Paper Judge, Division of Comparative Physiology and Biochemistry, Society for Integrative and Comparative Biology, Chicago 2000 meeting

Scholander Award Competition Judge, Division of Comparative Physiology, American Physiological Society, San Diego meeting, 2000

Organizer: 21st International Entomological Congress Symposium on “Spiracular mechanisms: ultrastructure and physiology” (Brazil, 2000)

Co-Organizer (with John E. Phillips): Society for Integrative and Comparative Biology Symposium on "Responses of terrestrial invertebrates to variation in temperature and water availability: molecular, organismal, and evolutionary approaches" (Albuquerque, 1996)

"Guest-editor", Physiological Zoology volume 67 (1994) for symposium "Respiratory and ionic aspects of insect acid-base regulation"

Co-Organizer (with John E. Phillips): American Society of Zoologist Symposium on "Insect Acid-Base Regulation", (Vancouver, 1992)

Nominating Committee, Division of Comparative Physiology and Biochemistry, American Society of Zoologists, 1990-91

Reviewer for:
National Science Foundation, National Institute of Health, Israeli Academy of Sciences, South African Academy of Sciences, Acta Mechanica, Arthropod Structure and Development, Canadian Entomologist, Comparative Biochemistry and Physiology, Ecology, Evolution, Experientia, Functional Ecology, Geobiology,Heredity, Insectes Sociaux, Journal of Applied Physiology, Journal of Comparative Physiology, Journal of Experimental Biology, Journal of Experimental Zoology, Journal of Insect Behavior, Journal of Insect Physiology, Journal of Heredity, Insectes Sociaux, International Journal of Insect Morphology, Integrative and Comparative Biology, Nature, Naturwissenshaften, Physiological and Biochemical Zoology, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society of London, Respiration Physiology, Science

GRANTS AND AWARDS:

2011-2014 National Science Foundation IOS 1122157: Structural and functional scaling of the respiratory system of flying beetles. $625,308.

2011-2012 National Science Foundation IOS-1110796: Dissertation Research: Metabolic and behavioral integration in social insect colonies. James S. Waters and Jon F. Harrison. $14,078.

2010-2012 National Science Foundation OISE-1026182: International DDEP: Grasshopper migration in the Asian steppe: Investigating diet as a cue for developmental polyphenism. Arianne J. Cease, James J. Elser and Jon F. Harrison. $14,988.

2010-2014 National Science Foundation EFRI BSBA: Complex microsystem networks inspired by internal insect physiology (NSF 0938047, $1,992,607. Jake Socha (Virginia Tech, PI), ASU (Harrison) portion of budget: $390,510.

2009-2010 National Science Foundation IOS-0929344: Workshop: Variable Atmosphere Laboratory 2. $28,840.

2008-2010 NASA cooperative agreement: Improved prediction of Africanized honeybee abundance, distribution, and migration in the US and honeybee climate responses using satellite-derived land-cover type and phonological data. NASA NNX08AO88G: $87,737

2007-2008 National Science Foundation award: Workshop to Evaluate and Design a Variable Atmosphere Laboratory (VAL). NSF IOS: 0748882. $13,076.

2009-2011 National Science Foundation REU supplement to NSF EAR 0746352: $30,000.

2008-2011 National Science Foundation award: Atmospheric oxygen effects on the body size of fossil and modern insects. NSF EAR: 0746352. $500,000.

GRANTS AND AWARDS (CONTINUED):

2006-2011	DARPA: Synthetic vertebral implant for cyborg insects (subcontract from Univ. of Michigan). DOD 3000654843 $295,133
2004-2009	National Science Foundation award: Atmospheric oxygen effects on insect body size and tracheal function. IBN 0419704. $633,725.
2003-2004	NSF REU (Research Experience for Undergraduates) supplement to IBN 0419704, $14,000
2002	Deutscher Akademischer Austausch Dient, $5,000 (Humboldt Universität)
2002-2004	NSF Doctoral Dissertation Improvement grant to Kendra Greenlee and JFH, IBN-0206678, Effects of body size and development on gas exchange, $9,951.
2001-2003	Beckman Scholars Program, $106,500, Beckman Foundation (this award funds undergraduate research in Biology and Chemistry & Biochemistry at ASU)
2001-2003	NSF Doctoral Dissertation Improvement Grant to Scott Kirkton and JFH, IBN-0104959 Mechanisms and significance of ontogenetic changes in respiratory function during insect locomotion, $10,000
2001-2005	National Science Foundation award: Genotypic and Phenotypic Variation in Foraging Behavior of African and European Honey Bees, IBN 0093410, $435,000, Co-PI: J.H. Fewell
2001	NSF REU (Research Experience for Undergraduates) Supplement to IBN 9985857, $10,000
2000-2004	National Science Foundation award: Body Size and Tracheal Function, IBN-9985857, $405,000
1999-2003	National Science Foundation IRCEB award: Biological Stoichiometry from Genes to Ecosystems, DEB-9977047, $2,842,162. ASU Co-PIs: J.J. Elser, W.F. Fagan.
1998-2000	National Science Foundation Award, Integrative Animal Biology panel: "Body size and tracheal function in insects", IBN 9728444, $150,000
1999	Arizona State University CLAS Travel Award. $900. Travel to International Union of Social Insects meeting, Adelaide, Australia
1998-1999	NSF REU (Research Experience for Undergraduates) Supplements to IBN 9728444, $20,000

GRANTS AND AWARDS (CONTINUED):

1994-1998	NSF REU (Research Experience for Undergraduates) Supplements to IBN 9317784, $35,325
1997 - 99	United States Dept of Agriculture Competitive Research Award "Mechanisms of Colony Growth and Reproduction in African and European Honey Bees" (97-35302-4395) Co-PI: Jennifer H. Fewell. $95,000
1996	to the Society for Integrative and Comparative Biology National Science Foundation Symposium funding: "Responses of terrestrial invertebrates to variation in temperature and water availability: molecular, organismal, and evolutionary approaches", Albuquerque, New Mexico, $5,985
1994-98	National Science Foundation Award, Integrative Animal Biology panel: Insect acid-base regulation (IBN 9317784) $304,000
1995-97	National Science Foundation Award, Dissertation Improvement Grant to Stephen P. Roberts and JFH, (IBN-9521543), $9,960
1991-94	National Science Foundation Award, Physiological Processes panel: Insect acid-base regulation (DCB-9020284) $180,519
1994	Arizona State University CLAS Travel Award. $500. Travel to International Union of Social Insects meeting, Paris, France
1992-1993	NSF REU (Research Experience for Undergraduates) Supplements to DCB-9020284, $8,000
1992	Arizona State University Faculty Grant-in-Aid Genetic variation in the metabolic capacity of African, European, and hybrid honey bees. ($5,350)
1992	to American Society of Zoologists (IBN 9204954) National Science Foundation Symposium Support Symposium: "Respiratory and Ionic Aspects of Acid-base Regulation in Insects, Vancouver, British Columbia" $6,000
1992	with N.B. Grimm, J.J. Elser, J.H. Fewell, S.G. Fisher, T.M. Markow, M.C. Moore, G. Walsberg: Analytical Laboratory for Research in Environmental Biology. National Science Foundation $170,000

INVITED LECTURES AND SYMPOSIA PRESENTATIONS:

2011 Invited speaker for International Hypoxia Symposium, Lake Louise, Canada.

Patton Lecture, Cornell University.

Dept. of Biology, Colorado State University

2010 Dept. of Biology, Univ. of California, Riverside

Dept. of Biology, Univ. of Montana, Missoula

Invited speaker for symposium entitled "Environmental Adaptations of Respiratory Systems", APS Intersociety Meeting, Westminister, CO.

2009 Invited speaker for symposium entitled "Insect evolution", SICB, Boston, MA.

Chinese Academy of Sciences, Beijing

Plenary Speaker, Western Physiological Ecology meeting, Bishop, CA.

Dept. of Engineering Science and Biomechanics, Virginia Polytechnical University

2008 Invited speaker for Argonne User's Week Science Symposium, Argonne National Laboratory.

Dept. of Ecology and Evolutionary Biology, Brown University, Providence, R.I.

Dept. of Entomology, University of Arizona State University

Dept. of Biology, University of New Mexico, Albuquerque, N.M.

Dept. of Biology, University of San Diego, San Diego, CA.

2007 Invited speaker for symposium entitled "Phanerozoic oxygen", Geological Society of American, Denver, CO.

2006 Invited speaker for the symposium entitled "Ecophysiology and conservation: the contribution of energetics", Society for Integrative and Comparative Biology, Orlando, FL

2005 Invited speaker for symposium entitled "Phanerozoic O_2: Animals, Plants and Fires", Earth Systems Processes 2, Calgary, Alberta

Dept. of Entomology, University of Arizona

INVITED LECTURES AND SYMPOSIA PRESENTATIONS (CONTINUED):

2004 Invited speaker for workshop entitled “Emerging Scientific Opportunities Using X-Ray Imaging”, The Abbey, Fontana, WI (Organized by Argonne National Laboratories)

Invited speaker for workshop on “Sociocomplexity and Genomics in Social Insects”, Wuerzburg, Germany

Invited speaker for symposium entitled “Oxygen, Water and Oxygen Radicals in Insects: Understanding the Balance”, International Congress of Entomology, Brisbane, Australia

2004 Invited speaker for symposium entitled: “Ontogeny of Physiological Regulatory Mechanisms”, Society for Integrative and Comparative Biology, New Orleans, LA

Dept. of Biology, Univ. of Nevada, Las Vegas

2003 Dept. of Biology, Univ. of Nebraska

Dept. of Biology, Univ. of North Texas

Dept. of Entomology, Univ. of Arizona

Invited speaker for symposium entitled “Physiological gas exchange: strategies for tracheal systems”, Sixth International Congress of Comparative Physiology and Biochemistry, Mt. Buller, Australia.

2002 Invited speaker for symposium entitled “Biological stoichiometry from genes to Ecosystems”, Society for Integrative and Comparative Biology, Toronto, Canada.

Comparative Developmental Physiology Workshop, Glen Rose, TX. Greenlee, K. and J.F. Harrison. Ontogeny of the hyoxia response in insects.

Dept. of Animal Physiology, Universitat Humboldt, Berlin

2001 Dept. Zoologie, Univ. of Würzburg

Plenary Presentation for Center for Insect Science Hexapodium

2001

Invited speaker for symposium entitled "Locomotion and energetics of animals", Society for Experimental Biology, Canturbury, U.K.

Dept. of Entomology, Univ. of California, Riverside

Invited speaker for symposium entitled "Teaching Physiology in the 21st Century, American Physiological Society, San Diego

INVITED LECTURES AND SYMPOSIA PRESENTATIONS (CONTINUED):

2000 Invited speaker for symposium entitled "Epithelial transport in insects", Society for Integrative and Comparative Biology

Invited speaker for symposium entitled “Insect Flight”, International Congress of Entomology, Iguazzu Falls, Brazil

Invited speaker for symposium entitled “Spiracular Mechanisms: Ultrastructure and Physiology”, International Congress of Entomology, Iguazzu Falls, Brazil

1999 Dept. of Life Sciences, Arizona State University, West

1998 Dept. of Entomology, University of Kansas

1998 Dept. of Ecology and Evolutionary Biology, University of Arizona

1997 Dept. of Entomology, Univ. of Arizona

Dept. of Biology, Penn State University

Dept. of Biology, Ohio University

1996 Arizona State University, Tempe, AZ

Dept. of Biology, University of New Mexico, Albuquerque

Dept. of Ecology and Evolutionary Biology, Univ. of California, Irvine

Invited symposium speaker for symposium entitled “Responses of terrestrial invertebrates to variation in temperature and water availability: molecular, organsismal and evolutionary approaches”, Society for Integrative and Comparative Biology, Albuquerque, N.M.

1995 The "Scholander Lecture". Comparative Section, American Physiological Society, Experimental BIology, Atlanta, GA.

1995 Invited speaker for symposium entitled "Comparative aspects of Control of Arterial Blood Gases: Ventilatory and Cardiovascular Perspectives". American Society of Zoologists, Washington, D.C

1994 USDA W-180 African Honeybee Conference, Tucson, AZ

1993 University of Montana, Missoula, MT.

1992 University of Arizona School of Medicine, Dept. of Physiology

INVITED LECTURES AND SYMPOSIA PRESENTATIONS (CONTINUED):

1992 Dartmouth College. Hanover, N.H.

Invited speaker for symposium entitled "Insect Acid-Base Regulation", American Society of Zoologists, Vancouver, B.C.

1991 Center for Insect Science. Tucson, AZ

1990 Arizona State University. Tempe, AZ

1990 San Diego State University. San Diego, CA

Cleveland State University. Cleveland, OH

1989 University of Utah. Salt Lake City, UT

University of North Carolina. Charlotte, N.C.

1988 University of British Columbia. Vancouver, B.C.

1987 Colorado State University. Fort Collins, CO.

1987 University of California, Irvine. Irvine, CA

University of British Columbia. Vancouver, B.C.
Wright State University School of Medicine. Dayton, OH.

MEETING PRESENTATIONS:

1984 Entomological Society of America. San Antonio, TX.
Harrison, J.M. Physiological parameters related to flight capacity in worker honeybees as a function of age.

American Society of Zoologists. Denver, CO.
Harrison, J.M. Physiological changes which increase flight capacity in the foraging caste of honeybees.

1985 Guild of Rocky Mountain Population Biologists. Ogden, UT.
Harrison, J.M. and M.D. Breed. Time dependent responses of *Paraponera clavata* workers to nectar sourcers.

Guild of Rocky Mountain Population Biologists. Ogden, UT.
Breed, M.D. and J.M. Harrison. Individual odor trails in the giant tropical ant.

American Society of Zoologists. Baltimore, MD.
Harrison, J.M. Temperature effects on hemolymph pH in locusts.

1986 Entomological Society of America. Reno, NV.
Harrison, J.M. Temperature effects on acid-base changes in *Melanoplus bivittatus*.

American Society of Zoologists. Nashville, TN.
Harrison, J.M. Hemolymph acid-base changes with temperature in *Melanoplus bivittatus*.

1987 American Society of Zoologists. Denver, CO.
Harrison, J.M. Respiratory and acid-base responses to hypercapnia in the American locust, Schistocerca nitens.

1988 Second International Congress of Comparative Physiology and Biochemistry. Baton Rouge, LA. Harrison, J.F. Lactate production and hemolymph acid-base status during hopping in grasshoppers.

1989 American Society of Zoologists. Boston, MA.
Harrison, J.F., T.T. Gleeson, and J.E. Phillips. Gas exchange in jumping grasshoppers.

1989 American Society of Zoologists. Boston, MA.
Wong, C.J.H., J.F. Harrison, and J.E. Phillips. Buffering and recovery from hemolymph acidosis in locusts.

American Society of Zoologists. Boston, MA.
Fewell, J.H., J.F. Harrison, T.M. Stiller, and M.D. Breed. Variable recruitment strategies in the giant tropical ant, *Paraponera clavat*a.

MEETING PRESENTATIONS, continued:

1990 Canadian Society of Zoologists. Burnaby, B.C.
Harrison, J.F., C.J.H. Wong, and J.E. Phillips. Buffering and recovery from hemolymph acid loads in locusts.

Canadian Society of Zoologists. Burnaby, B.C.
Stagg, A.P., J.F. Harrison, and J.E. Phillips. Role of the Malpighian tubules in recovery from acidosis in locusts.

American Physiological Society. Orlando, FL.
Harrison, J.F., A.P. Stagg, and J.E. Phillips. Ammonium, total urate, and titratible acid excretion in acid-loaded locusts.

1991 Physiological Ecology Conclave, Bishop, CA.
Harrison, J.F. Acid-base regulation in insects.

Entomological Society of America, Reno, NV.
Harrison, J.F. and J.E. Phillips. Acid and nitrogen excretion in locusts.

1992 Physiological Ecology Conclave, Bishop, CA.
Harrison, J.F. and H.G. Hall. Activity metabolism of African, European, and hybrid honey bees.

American Society of Zoologists. Vancouver, B.C.
Harrison, J.F. and H.G. Hall. Temperature, size, and metabolic influences on the metabolic capacity of African, European, and hybrid honeybees.

1993 American Society of Zoologists. Los Angeles, CA.
Krolikowski, K.A., S.L. Gulinson, and J.F. Harrison. Hemolymph acid-base status and the control of ventilation in grasshoppers.

American Society of Zoologists. Los Angeles, CA.
Harrison, J.F. and J.H. Fewell. High Q_{10}'s for feeding and gut passage in a stenothermic grasshopper.

1994 XXII International Meeting of International Union for the Study of Social Insects. Paris, France. Harrison, J.F., D. Nielsen, and R.E. Page.

American Physiological Society Intersociety Meeting. San Diego, CA.
Harrison, J.F., P. Waclawski, S. Gulinson, and K. Krolikowski. Control of ventilation in locusts.

MEETING PRESENTATIONS, continued:

1994 American Physiological Society Intersociety Meeting. San Diego, CA.
Weinsten, R., J.F. Harrison, and R.J. Full. Intracellular pH recovers rapidly in ghost crabs following exhaustion.

American Society of Zoologists, St. Louis, MO.
Roberts, S.P., N.F. Hadley and J.F. Harrison. Water loss and metabolic rate during flight in the bees *Centris pallida* and *Apis mellifera*.
(*Best student poster award, Division of Comparative Physiology and Biochemistry)

American Society of Zoologists, St. Louis, MO.
Harrison, J.F., D.I. Nielson, and R.E. Page. Thermal and MDH phenotype effects on the flight metabolism of honey bees.

American Society of Zoologists, St. Louis, MO.
Gulinson, S.L. and J.F. Harrison. Control of resting ventilation in grasshoppers.

American Society of Zoologists, St. Louis, MO.
Krolikowski, K.A. and J.F. Harrison. Feedback-independent elevation of post-exercise ventilation rate in grasshoppers.

1995 Entomological Society of America, Las Vegas, NV.
Harrison, J.F. Tracheal gas levels, hemolymph pH, and the control of ventilation in grasshoppers.

1996 Physiological Ecology Conclave, Bishop, CA.
Harrison, J.F. Oxygen-sensitive flight metabolism in a dragonfly: implications for the evolution of maximal insect body size.

Society for Integrative and Comparative Biology, Albuquerque, N.M.
Harrison, J.F, K. Greenlee and K. Krolikowski. Mechanisms for variation in gas exchange of grasshoppers.

Society for Integrative and Comparative Biology, Albuquerque, N.M.
Liao, U.I.S., X. Lui, and J.F. Harrison. Renal regulation of acid-base status in the American locust, *Schistocerca americana*.

Society for Integrative and Comparative Biology, Albuquerque, N.M.
Feuerbacher, E.N., J.H. Fewell and J.F. Harrison. Metabolic costs of pollen and nectar load carriage. American Zoologist.

MEETING PRESENTATIONS, continued:

1997 Experimental Biology, New Orleans, LA
Roberts, S.P., J.F. Harrison and R. Dudley. Mass scaling of kinematics and power during normal and maximal hovering flight performance in the bee Xylocopa varipuncta.

Experimental Biology, New Orleans, LA
Feuerbacher, E., J.H. Fewell and J.F. Harrison. Flight metabolism and kinematics of pollen and nectar load carriage in honey bees.

Experimental Biology, New Orleans, LA
Greenlee, K. and J.F. Harrison. How do grasshoppers maintain metabolic rates with reduced oxygen availability?

Experimental Biology, New Orleans, LA
Harrison, J.F., U.I.S. Liao, X. Lui and S.P. Roberts. Localization and quantification of sites of acid-base regulation in the grasshopper.

1998 Experimental Biology, San Francisco
Harrison, J.F, K. Greenlee and J.R.B. Lighton. Safety margins and the hypoxia sensitivity of insects.

Entomological Society of America, Las Vegas, NV.
Harrison, J.F. and U.I. S. Liao-Troth. Measuring fluid and solid flows in locusts: implications for digestive function and pH regulation.

Entomological Society of America, Las Vegas, NV.
Frazier, M.R. and J.F. Harrison. Dietary acid-base loading in grasshoppers.

Entomological Society of America, Las Vegas, NV.
McCoy, L.M., J.H. Fewell and J.F. Harrison. Behavioral and physiological differences between African and European honey bee workers.

13th International Congress of the International Union for the Study of Social Insects, Adelaide, Australia.
Harrison, J.F., S. Roberts, E. Feuerbacher, J. Fewell, and K. Greenlee.
Environmental and genetic effects on the cost of foraging in honey bees: implications for foraging models.

MEETING PRESENTATIONS, continued:

1999 Society for Integrative and Comparative Biology, Denver, CO
Greenlee, K.J., J.F. Harrison, and J.H. Fewell. Ontogeny of resting and flight metabolic rates in African and European honey bees.

Experimental Biology, Washington, D.C.
Espinosa, KA. and J.F. Harrison. Renal modulation of acid-base excretion in response to diet in the American locust.

Experimental Biology, Washington, D.C.
Lafreniere, J.J., J.F. Harrison and K.J. Greenlee. Ontogenetic development of gas exchange capacities of the primary trachea of the American locust.

Experimental Biology, Washington, D.C.
Kirkton, S.D. and J.F. Harrison. Oxygen sensitivity of jumping performance in the grasshopper *Schistocerca Americana*

Animal Behavior Society, Bucknell University, PA.
Fewell, J.H. and J.F. Harrison. Behavioral and Physiological variation between African and European honey bees.

2000 Society for Integrative and Comparative Biology, Atlanta, GA
Woods, H.A. and J.F. Harrison. Comparison of acclimatory and evolutionary changes in water balance physiology of larval *Manduca sexta*.

Society for Integrative and Comparative Biology, Atlanta, GA
Harrison, J.F., J.J. Lafrenie, K.J. Greenlee. Body size effects on gas exchange capacities of primary trachea of the American locust.

Center for Insect Science Poster Hexapodium, Tucson, AZ
Woods, A.H. and Harrison, J.F. Gene flow, acclimation, and the evolution of water balance physiology in North American *Manduca sexta*.

Experimental Biology, San Diego, CA
Kirkton, S. D., Petrie, N. and Harrison, J. F. Effects of body size on the oxygen sensitivity of grasshopper jumping.

Experimental Biology, San Diego, CA
Greenlee, K. J. and Harrison, J. F. Developmental effects on gas exchange in the American locust, *Schistocerca americana*.

XXI International Congress of Entomology, Foz do Iguassu, Brazil
Frazier, M. R., Harrison, J. F. and Woods, H. A. Interaction of oxygen tension and temperature on insect development.

MEETING PRESENTATIONS, continued:

2000 XXI International Congress of Entomology, Foz do Iguassu, Brazil
Kirkton, S. D. and Harrison, J. F. Effects of ontogeny of the oxygen sensitivity of jumping performance in the American locust, *Schistocerca americana*.

XXI International Congress of Entomology, Foz do Iguassu, Brazil
Greenlee, K.J. and Harrison J.F. Respiratory changes throughout ontogeny in the American locust, *Schistocerca americana*.

XXI International Congress of Entomology, Foz do Iguassu, Brazil
McCoy, L. M., Fewell, J. H. and Harrison, J. F. Genetic mechanisms contributing to differences in colony growth rates between African and European honey bees.

Physiological Ecology Meeting, Bishop, CA.
Perkins, M. C., H. A. Woods and J. F. Harrison. Effects of phosphorus on growth in larval *Manduca sexta*.

Entomological Society of America, Montreal, Canada.
Perkins, M. C., H. A. Woods and J. F. Harrison. Effects of dietary phosphorus on growth of larval *Manduca sexta*on on both an artificial and natural diet.

Pacific Branch of the Entomological Society of America, Costa Mesa, CA.
Perkins, M. C., H. A. Woods and J. F. Harrison. Effects of dietary phosphorus on growth of larval *Manduca sexta*.

2001 Society for Integrative and Comparative Biology, Chicago, IL
Kirkton, S. D. and Harrison, J. F. Effects of allometric growth on oxygen sensitivity and jumping performance in the American locust.

Society for Integrative and Comparative Biology, Chicago, IL
Greenlee, K. J., Harrison, J. F., and Egbert, K. How does the respiratory response to hypoxia change throughout ontogeny in a grasshopper and a caterpillar?

Center for Insect Science Poster Hexapodium, Tucson, AZ
Hartung, D., Kirkton, S.D. and Harrison, J.F. Developmental variation in the ultrastructure of the jumping muscle from the American locust.

Meeting Presentations, continued

2002 Society for Integrative and Comparative Biology, Anaheim, CA.
Woods, H.A., Hobbie, S.E., Makino, W., Cotner, J., Harrison, J.F. and Elser, J.J. Temperature shifts cause systematic changes in biochemical composition of poikilothermic organisms.

Society for Integrative and Comparative Biology, Anaheim, CA.
Roberts, S.P., Frazier, M.R., Kirkton, S.D. and Harrison, J.F. Temperature sensitivity of Drosophila flight and flight performance.

Society for Integrative and Comparative Biology, Anaheim, CA.
Harrison, J.F., LaFreniere, J., Hartung, D.A., Greenlee, K. and Kirkton, S.D. Ontogeny effects on the diffusive and convective conductance of abdominal and leg trachea in *Schistocerca americana* gasshoppers.

Society for Integrative and Comparative Biology, Anaheim, CA.
Kirkton, S.D. and J.F. Harrison. Effects of body size changes on jumping performance in the American locust.

Experimental Biology, New Orleans, LA.
Greenlee, K. and J.F. Harrison. Ontogeny of the hyoxia response in insects.

Experimental Biology, New Orleans, LA
Kirkton, S.D. and J.F. Harrison. Effects of body size change on jumping performance in the American locust.

Experimental Biology, New Orleans, LA
Hartung, D.K. and J.F. Harrison. Developmental variation in the jumping leg of the American locust.

The Power of Comparative Physiology: Evolution, Integration and Applied, San Diego, CA
Harrison, J.F., Okoroh, E., Feurbacher, E., Fewell, J.H. and Roberts, S.P. Effects of load type and air temperature on the energetics of load carriage in the honeybee, *Apis mellifera*

The Power of Comparative Physiology: Evolution, Integration and Applied, San Diego, CA. Greenlee, K. and J.F.Harrison. Variation in oxygen sensitivity in insects of different size and age.

The Power of Comparative Physiology: Evolution, Integration and Applied, San Diego, CA. Kirkton, S.D., Harrison, J.F., Timmins, G. and Nsika, J. Oxygen delivery problems may reduce jumping performance in larger locusts.

Society for Integrative and Comparative Biology, Toronto, Ontario.
Kirkton, S.D. and J.F. Harrison. Developmental and interspecific body size effects on grasshopper jumping performance.

Meeting Presentations, continued

2003 Sixth International Congress of Comparative Physiology and Biochemistry, Mt. Buller, Australia. Greenlee, K., J.F. Harrison and K. Egbert. Developmental changes in safety margins for gas exchange in caterpillars and grasshoppers.

Sixth International Congress of Comparative Physiology and Biochemistry, Mt. Buller, Australia. Kirkton, S.D. and J.F. Harrison. Do larger grasshoppers have more problems with oxygen delivery during jumping?

German International Union for the Study of Social Insects. Weidenmuller, A., J. Fewell and J.Harrison. Energetic costs of thermoregulatory behavior in bumblebees: linking individual differences in metabolic rates to division of labor?

Physiological Ecology Meeting, Bishop, CA.
Greenlee, K. and J. Harrison. Ontogeny of gas exchange in insects.

Physiological Ecology Meeting, Bishop, CA.
Kirkton, S.D. and J. Harrison. Jumping to conclusions: body size and oxygen delivery in grasshoppers.

Physiological Ecology Meeting, Bishop, CA.
Fay, M. and J. Harrison. Effects of dietary phosphorous on grasshopper growth and behavior.

Physiological Ecology Meeting, Bishop, CA.
La Moure, D., J. Henry and J. Harrison. Do higher atmospheric oxygen levels allow for evolution of larger flies?

Physiological Ecology Meeting, Bishop, CA.
Rascón, B. and J. Harrison. The effect of oxygen on the metabolic capacity of *Schistocerca americana* during flight.

2004 Society for Integrative and Comparative Biology, New Orleans, LA. Henry, J.R. and Harrison, J.F. Plastic and evolved responses of tracheal dimensions to varying atmospheric oxygen content in Drosophila melanogaster.

Society for Integrative and Comparative Biology, New Orleans, LA. Lee, W.K., Harrison, J.F., Greenlee, K., Betz, O. and Westneat, M. Biomechanics of insect respiration and feeding using synchrotron x-ray imaging.

2005 Society for Integrative and Comparative Biology, San Diego, CA. Kirkton, S.D and J.F. Harrison. Within instar development reduces locomotory performance but not oxygen delivery to the jumping muscle in the American locust

Society for Integrative and Comparative Biology, San Diego, CA. Lease, H.M.; Wolf, B.O. and Harrison, J. F.; Ontogeny of Tracheal Volume in Schistocerca Americana

Meeting Presentations, continued

2005 Society for Integrative and Comparative Biology, San Diego, CA. Rascón, B, and Harrison, J.F. Atmospheric oxygen effects on metabolic rate and behavior of tethered flying locusts

Society for Integrative and Comparative Biology, San Diego, CA. Greenlee, K.J., Harrison, J.F., Henry, J.R., Westneat, M., Kirkton, S.D. and Lee, W.-K. An analysis of grasshopper tracheal morphology across instars using synchrotron x-ray imaging.

2006 Society for Integrative and Comparative Biology, Orlando, FL. Grayson, D.L., J.F. Harrison and J.H. Fewell. 2005. Foraging effort and metabolism in European and African honey bees. Integrative and Comparative Biology

Society for Integrative and Comparative Biology, Orlando, FL. Rascón, B. J.R. Henry, J.F. Harrison, K. Fezzaa, W-K Lee, J.J. Socha. Peering inside the insect thorax: an examination of thoracic autoventilation in live insects using synchrotron x-rays.

Society for Integrative and Comparative Biology, Orlando, FL. Kaiser, A., C.M. Klok, J. Socha, W.-K Lee, K. Fezzaa, M.C. Quinlan and J.F. Harrison. Structure, function, and allometry of the tracheal system of darkling beetles (Tenebrionidae).

Society for Integrative and Comparative Biology, Orlando, FL. Socha, J.J., J.F. Harrison, W.-K. Lee and M.W. Westneat. Tubes squeeze and air flows out: correlated patterns of CO_2 emission and tracheal compression in the beetle *Patynus decentis*.

Society for Integrative and Comparative Biology, Orlando, FL. Klok, C.J., A. Kaiser, B. McKinley, B. Rascón, J. Henry, W.K. Lee, J. Socha and J.F. Harrison. Plastic and evolutionary responses of body size and tracheal dimensions to atmospheric oxygen concentration in fruitflies.

Experimental Biology Meeting, San Francisco, CA. Blatch, S. and J.F. Harrison. Physiological consequences of a methylation diet in the fruitfly, *Drosophila melanogaster*.

Experimental Biology Meeting, San Francisco, CA. Harrison, J.F., K. Greenlee, J. Henry, S. Kirkton, M. Westneat, J. Socha and W.K. Lee. Hyper-development of the tracheal system in larger insects.

Experimental Biology Meeting, Moscone Convention Center, San Francisco, CA. Rascón B., Henry J.R., Harrison J.F., Fezzaa K., Lee W-K., Socha J.J. Peering inside the insect thorax: an examination of thoracic autoventilation in live insects using synchrotron x-rays.

Meeting presentations, continued

2006 NSF Division of Human Resource Development Joint Annual Meeting, Washington D.C. Rascón B., Henry J.R., Harrison J.F., Fezzaa K., Lee W-K., Socha J.J. Peering inside the insect thorax: an examination of thoracic autoventilation in live insects using synchrotron x-rays.

FASEB Folic Acid and Vitamin B-12 Conference, Palm Springs, CA, Blatch, S. and J.F. Harrison. Physiological consequences of a methylation diet in the fruitfly, *Drosophila melanogaster*.

International Union for the Study of Social Insects, Washiington, D.C. Grayson, D., J.F. Harrison and J.H. Fewell. Size alone does not account for differences in metabolic rates between Africanized and European honey bees.

Comparative Physiology 2006: Integrating Diversity (American Physiological Society Intersocietal Meeting, Virginia Beach, VA. Kaiser, A., Klok, C.J., Socha, J.J., Lee, W.K., Quinlan, M.C., Harrison, J.F. No giants today: tracheal oxygen supply to the leg limits beetle size.

Comparative Physiology 2006: Integrating Diversity (American Physiological Society Intersocietal Meeting, Virginia Beach, VA. Klok, C.J., A. Kaiser, W.K. Lee, J. Sochae and J.F. Harrison. Physiological constraints of atmospheric oxygen levels on insect size.

Comparative Physiology 2006: Integrating Diversity (American Physiological Society Intersocietal Meeting, Virginia Beach, VA. Blatch, S. and J.F. Harrison. Physiological consequences of methylation diets and folic acid in the fruitfly, *Drosophila melanogaster*.

Comparative Physiology 2006: Integrating Diversity (American Physiological Society Intersocietal Meeting, Virginia Beach, VA. Harrison, J.F., C.J. Klok and B. McKinley. Both larval and pupal hypoxia affect adult size in the fruitfly.

1st International Congress for Respiratory Biology, Bonn, Germany. Klok, C.J. A. Kaiser, W.K. Lee, J. Socha and J.F. Harrison. Physiological constraints of atmospheric oxygen levels on insect body size, tracheal structure and function.

2007

Society for Integrative and Comparative Biology (SICB) Annual Meeting, Phoenix Convention Center, Phoenix, AZ. Rascón B. and Harrison J.F. Death by oxygen.

Society for Integrative and Comparative Biology, Phoenix, AZ. Blatch, S.A. and J. Harrison. 2007. Oral Presentation Folic Acid Physiology in *Drosophila melanogaster*.

Meeting presentations, continued

2007

Society for Integrative and Comparative Biology, Phoenix, AZ**.** Farzin, M., S.A. Blatch and J.F. Harrison. Effects of atmospheric hypoxia on cell size in adult *Drosophila melanogaster*.

Society for Integrative and Comparative Biology, Phoenix, AZ**.** Albert, T.W., N. Pierce, C.J. Klok and J.F. Harrison. Normoxic *Drosophila* larvae like it deeper.

Society for Integrative and Comparative Biology, Phoenix, AZ**.** Klok, C.J., A. Kaiser, W.K. Lee, J.J. Socha and J.F. Harrison. Single- and multi-generational effects of atmospheric oxygen level on body size and tracheal dimensions in *Drosophila melanogaster.*

Society for Integrative and Comparative Biology, Phoenix, AZ**.** Henry, J. R. and J.F. Harrison. Does body size affect the safety margin for oxygen delivery in flying dragonflies?

Society for Integrative and Comparative Biology, Phoenix, AZ. Grayson, D.L., J.H. Fewell and J.F. Harrison. Why do Africanized honey bees have higher metabolic capacities than Europeans?

Entomological Society of America, San Diego, CA. Klok, C.J. and J.F. Harrison.

Experimental Biology. Washington, D.C. Effects of multi-generational exposure to varied atmospheric oxygen levels on body size and tracheal dimensions of fruitflies. Jon F. Harrison[1], C Jaco Klok[1], Alexander Kaiser[2], Wah-Keat Lee[3], Jake Socha[3].

Experimental Biology. Washington, D.C. Morphological and biochemical jumping adaptations in smaller grasshoppers. S. D. Kirkton and Jon F. Harrison

Geological Society of America. Denver, CO. Variable responses of insect size to atmospheric oxygen level across species and populations. Jon F. Harrison

2008

Society for Integrative and Comparative Biology. San Antonio, TX. The effects of varying oxygen levels on size, growth, and development rate in the tobacco hornworm. Cease, A., T. Albert, J. VandenBrooks, G. Davidowitz and J. Harrison.

Experimental Biology. San Diego, CA. Moderate hypoxia extends lifespan in adult but not juvenile exposure in the fruitfly, *Drosophila melanogaster*. B. Rascón and J.F. Harrison.

International Congress of Entomology. Durban, South Africa. Does atmospheric oxygen limit insect size? Effects of oxygen on insect growth and tracheal morphology. J.F. Harrison and C.J. Klok.

Meeting presentations, continued

2008 International Congress of Entomology. Durban, South Africa. Critical oxygen responses in *Drosophila melanogaster* reared in hypoxia or hyperoxia. C.J. Klok and J.F. Harrison.

International Congress in African for Comparative Physiology and Biochemistry. Massai Mara, Kenya. Diffusion and convection in the American locust, *Schistocerca americana*. J.F. Harrison.

Gordon-Kenan Research Conference on the Metabolic Basis to Ecology, Biddeford, MA. Allometric scaling of metabolic rate with colony size in *Pogonomyrmex californicus*. J.S. Waters, C.T. Holbrook and J.F. Harrison.

2009

Society for Integrative and Comparative Biology. Boston, MA. High density and high nitrogen: A dual stressor for grasshoppers? Cease, A., S. Hao, J. Elser, L. Kang and J. Harrison.

Society for Integrative and Comparative Biology. Boston, MA. Phenotypic placticity of body size in response to atmospheric oxygen in *Drosophila melanogaster*. Hubb, A.J., C.J. Klok and J.F. Harrison.

Society for Integrative and Comparative Biology. Boston, MA. Parabolic Effects of Atmospheric Oxygen on Body Size, Development Time, and Growth Rate in *Zophobas morio*, the Giant Mealworm. Ford, C.F., J. VandenBrooks and J.F. Harrison.

Society for Integrative and Comparative Biology. Boston, MA. Tracheal systems and the evolution of insects. J.M. VandenBrooks, A. Kaiser and J.F. Harrison.

Society for Integrative and Comparative Biology. Boston, MA. Critical periods for oxygen effects on adult size in Drosophila melanogaster. E.C. Heinrich and J.F. Harrison.

Society for Integrative and Comparative Biology. Boston, MA. The scaling of critical P_{O2} in Coleoptera. Lease, H.M., C.J. Klok, A. Kaiser and J.F. Harrison.

Society for Integrative and Comparative Biology. Boston, MA. Allometric scaling of whole colony metabolic rate in *Pogonomyrmex californicus*. Waters, J.S., C.T. Holbrook, J.H. Fewell and J.F. Harrison

Experimental Biology, San Diego, CA. Gasping grasshoppers prefer hypobaric hypoxia. J.F. Harrison and A. Bruce.

Beckman Scholars Summer Research Symposium. Irvine, CA. Key factors in the hypoxic response of *Drosophila melanogaster*. Heinrich, E.C. and J.F. Harrison.

Western Physiological Ecology Meeting. Bishop, CA. How does hypoxia decrease the adult size of *Drosophila melanogaster?* Heinrich, E.C. and J.F. Harrison.

Meeting presentations, continued

2009 Western Physiological Ecology Meeting. Bishop, CA. Allometric scaling of whole colony metabolic rate in *Pogonomyrmex californicus*. J.S. Waters, C.T. Holbrook, J.H. Fewell and J.F. Harrison

2010 Society for Integrative and Comparative Biology. Seattle, WA. Mechanisms of hypoxia effects on body size of Drosophila melanogaster. E. Heinrich, C.J. Klok, J.F. Harrisoon, M. Farzin and B. McKinley.

Society for Integrative and Comparative Biology. Seattle, WA. Effects of atmospheric oxygen on body size, development time, growth rate and tracheal systems in *Blatella germanica*, the German cockroach. E.E. Munoz, J.M. Vandenbrooks, J.A. Hale and J.F. Harrison.

Society for Integrative and Comparative Biology. Seattle, WA. Atmospheric oxygen influences on the size of modern and fossil insects. J.M. Vandenbrooks and J.F. Harrison.

Society for Integrative and Comparative Biology. Seattle, WA. A proposal for a National Variable Atmosphere Laboratory (VAL) for climate change research. J.F. Harrison and J.M. Vandenbrooks.

Society for Integrative and Comparative Biology. Seattle, WA. Geometric characterization and phenotypic plasticity in the tracheal networks supplying insect flight muscle. J.S. Waters and J.F. Harrison.

American Physiological Society Intersociety Meeting. Westminister, CO. The mechanisms of oxygen effects on the fruit fly Drosophila melanogaster. E. Heinrich and J.F. Harrison.

American Physiological Society Intersociety Meeting. Westminister, CO.A proposed national facility for the study of global climate change – the Variable Atmosphere Laboratory (VAL). J. VandenBrooks and J.F. Harrison.

American Physiological Society Intersociety Meeting. Westminister, CO. A new tool or insect flight metabolic rate studies: electrostimulation of flight in goliath beetles. C.J. Klok, A. Kaiser, J.F. Harrison, H. Sato and M.M. Maharbiz.

American Physiological Society Intersociety Meeting. Westminister, CO. Scaling of metabolism, growth and network organization in colonies of the seed harvester ant, Pogonomyrmex californicus. J. Waters and J.F. Harrison.

American Physiological Society Intersociety Meeting. Westminister, CO. Atmospheric oxygen level and the evolution of insect size. J. Vandenbrooks, A. Kaiser and J.F. Harrison.

Meeting presentations, continued

2010 American Physiological Society Intersociety Meeting. Westminister, CO. The effect of Paleozoic oxygen levels on the development of the tracheal system in *Blatella germanica*, the German cockroach. E. Munoz, J. Wee, J. VandenBrooks and J.F. Harrison.

2011 Society for Integrative and Comparative Biology, Salt Lake City, Utah. Anatomy of the tracheole system supplying *Drosophila* flight muscle. Waters, J.S; Heinrich, S.M.*; Harrison, J.F.

Society for Integrative and Comparative Biology, Salt Lake City, Utah. The effect of hypoxia and hyperoxia on dragonfly development: a link between Paleozoic oxygen levels and insect gigantism. Weed, M.D.*; Munoz, E.E.; Harrison, J.F.; Vandenbrooks, J.M.

Society for Integrative and Comparative Biology, Salt Lake City, Utah. Locusts prefer nitrogen-poor plants in overgrazed pastures. Cease, A,*; Elser, J.; Hao, S.; Kang, L.; Harrison, J.F.

Society for Integrative and Comparative Biology, Salt Lake City, Utah. Metabolic and behavioral integration in social insect colonies. Waters, J.S.*; Fewell, J.H.; Harrison, J.F.

Society for Integrative and Comparative Biology, Salt Lake City, Utah. HIF-mediated growth suppression in *Drosophila melanogaster* reared in moderate hypoxia. Harrison, J.F.*; Ramsey, K.A.; Dohwenrend, S.; Heinrich, S; Farzin, M.; Greenlee, K.J.

Society for Integrative and Comparative Biology, Salt Lake City, Utah. The Role of Atmospheric Oxygen in the Evolution of Insect Body Size. Vandenbrooks, J.M.*; Munoz, E.E.; Weed, M.D.; Harrison, J.F.

Society for Integrative and Comparative Biology, Salt Lake City, Utah. Interspecific allometry of cockroach tracheal systems and the impact of oxygen on their tracheal development. Munoz, E.E.*; Weed, M.; Harrison, J.F.; Vandenbrooks, J.M.

2012 Society for Integrative and Comparative Biology, Charleston, S.C. The use of SR-μCT for 3D visualization of insect tracheal systems. Miller, L.*; Waters, J.S.; Harrison, J.F.; Vandenbrooks, J.M.; Yager, D.D.; Xiao, X.; De Carlo, F.; Socha, J.J.

Society for Integrative and Comparative Biology, Charleston, S.C.Developmental and fossil evidence that changes in atmospheric oxygen drove historical patterns in insect body size. Vandenbrooks, J.M. *; Munoz, E.E.; Weed, M.D; Harrison, J.F.

Society for Integrative and Comparative Biology, Charleston, S.C.Effects of rearing oxygen level on the anatomy of the adult tracheal system in *Drosophila.* Harrison, J.F.*; Waters, J.S.; Heinrich, S.M.; Socha, J.J.

TEACHING:
Dept. of Biology, Arizona State University:

1991, Spring and Summer	Zoology 202, Human Anatomy and Physiology
1992, Spring and Summer	Zoology 202, Human Anatomy and Physiology
1992, Fall	Zoology 560, Comparative Physiology Zoology 494, Advanced Human Anatomy and Physiology
1993, Spring	Zoology 202, Human Anatomy and Physiology Zoology 494, Advanced Human Anatomy and Physiology
1993, Fall	Zoology 202, Human Anatomy and Physiology Zoology 494, Advanced Human Anatomy and Physiology Seminar: Zoology 591, Elements in Individuals and Ecosystems
1994, Spring	Zoology 202, Human Anatomy and Physiology Zoology 494, Advanced Human Anatomy and Physiology
1994, Fall	Zoology 560, Comparative Physiology
1995, Fall	Zoology 360, General Physiology Seminar: Zoology 591, General Principles and Current Topics in Insect Physiology
1996, Fall	Zoology 202, Human Anatomy and Physiology Zoology 494, Advanced Human Anatomy and Physiology
1997, Spring	Zoology 560, Comparative Physiology approximate enrollment: 12
1997, Fall	Zoology 202, Human Anatomy and Physiology approximate enrollment: 150, supervised 3 TAs Zoology 494, Advanced Human Anatomy and Physiology Zoology 591, Seminar in Organismal Biology (with J. Fewell)
1998, Spring	Zoology 598, Comparative and Environmental Physiology (co-taught with G. Walsberg);approximate enrollment: 10 Zoology 591, Seminar in Animal Design and Function
1998, Fall	Biology 360, Basic Physiology approximate enrollment: 120, supervised 4 TAs Zoology 591, Seminar in Animal Design and Function

TEACHING (CONTINUED):

1999, Spring	Biology 182, General Biology (co-taught with J. Fewell) approximate enrollment: 250, supervised 6 TAs Zoology 591, Seminar in Animal Design and Function
1999, Fall	Bio 360, Animal Physiology approximate enrollment: 120, supervised 4 TAs Bio 591: Seminar in Biochemical Adaptation (co-taught with J. Hazel) Bio 591: Seminar in Animal Design and Function
2000, Spring	Bio 182, General Biology (co-taught with Dr. Fewell) approximate enrollment: 250, supervised 5 TAs Bio 598, Cellular and Organismal Responses to Stress (with Drs. Orchinik and Deviche) approximate enrollment: 12
2000, Fall	Bio 201, Human Anatomy & Physiology (with R. Satterlie) approximate enrollment: 150, supervised 3 TAs
200l, Spring	Bio 181, General Biology (with J. Wilson-Rawls) approximate enrollment: 380, supervised 8 TAs
2001, Fall	Bio 360, Animal Physiology (with M. Moore) approximate enrollment: 70, supervised 4 TAs Bio 591: Seminar in Comparative Animal Physiology enrollment: 6
2002, Spring	Bio 360, Animal Physiology approximate enrollment: 112 Bio 494: Writing Seminar for Beckman Fellows (enrollment = 6)
2003, Spring	Bio 188, General Biology (with J. Wilson-Rawls) approximate enrollment: 350 (supervised 8 TAs)
2003, Fall	Bio 560 Comparative Physiology, enrollment: 13
2004, Spring	Bio 360, Animal Physiology: approximate enrollment: 160 Bio 361, Animal Physiology lab enrollment 32 (supervised 2 TA's)
2004, Fall	Bio 591, Oxygen Radicals and Oxidative Stress: enrollment: 7
2005, Spring	Bio 360, Animal Physiology: approximate enrollment: 100 Bio 361, Animal Physiology Lab: enrollment: 64 (4 TA's) Bio 591, Seminar in Insect Physiology: approximate enrollment: 9

TEACHING (CONTINUED):

2006, Spring	Bio 591, Seminar in Ecological and Evolutionary Physiology of Insects: enrollment: 8
2006, Fall	Bio 560, Comparative Animal Physiology: enrollment 8
2007, Fall	Bio 360, Animal Physiology: enrollment 170 Bio 361, Animal Physiol. lab, enrollment 32 (supervised 2 TA's)
2008, Fall	Bio 202, Human Anatomy and Physiology, enrollment 280 (supervised 7 TA's). Bio 591: Seminar in Environmental Life Sciences (20 students)
2010, Fall	Bio 461, Comparative Animal Physiology (34 students)
2011, Fall	Bio 189, Life Science Career Paths (17 students, six weeks)

DEPARTMENTAL and UNIVERSITY SERVICES

1991	Co-Chair, Seminar Committee
1992-93	Advisory Committee (elected) Graduate Committee Organizer: Physiology Discussion Group, Spring 1992
1993-1994	Advisory Committee (elected) Graduate Committee
1994-1995	Advisory Committee (elected) Graduate Committee Search Committee, Integrative Biologist (affirmative action officer)
1995-1996	Advisory Committee (elected) Graduate Committee Search Committee, Theoretical Ecologist (affirmative action officer)
1996-1997	Advisory Committee (elected) Graduate Committee
1997-1998	Chair, Search Committee, Environmental or Evolutionary Physiologist Advisory Committee (elected)
1998-99	Personnel Committee (elected) Exercise Science Executive Committee wrote Beckman Foundation grant for undergraduate research (grant declined)
1999-2000	Advisory Committee (elected) Exercise Science Executive Committee Insect Science Center Executive Committee Chair, Biology Department Seminar Committee wrote Beckman Foundation grant for undergraduate research
2000-2001	Advisory Committee (elected) Graduate Committee Exercise Science Executive Committee Insect Science Center Executive Committee Wrote Beckman Foundation grant for undergraduate research Chair, Beckman Scholar Steering Committee

DEPARTMENTAL and UNIVERSITY SERVICES, continued

2001-2002	Chair, Search Committee for Director of Interdisciplinary Ph.D. Program in Exercise Science Exercise Science Executive Committee Insect Science Center Executive Committee Chair, Beckman Scholar Steering Committee Life Sciences Reorganization Committee
2002-2003	sabbatical Exercise Science Executive Committee Insect Science Center Executive Committee Chair, Search Committee for Anatomy and Physiology Lab Coordinator
2003-2004	Insect Science Center Executive Committee Initiative Programs Committee Member, elected Evolutionary and Systems Biology committee member SOLS Director Search Committee member, elected, affirmative action officer Physiology lecturer search committee member, affirmative action officer
2004-2005	Insect Science Center Executive Committee Initiative Programs Committee Member, elected Chair, Honey Bee Reproductive Physiology Search Committee ISTB-1 Ad Hoc Building Committee OISB Hiring Proposal Proposal Ad-Hoc Committee
2005-2006	Associate Director for Facilities, School of Life Sciences Safety Committee (ex-officio) AP Personnel committee Physiology Curriculum Committee Insect Science Center Executive Committee
2006-2007	Associate Director for Facilities, School of Life Sciences Safety Committee (chair during fall, 2006, member in spring 07) Chair, Graduate Programs Associate Director Search Committee Insect Science Center Executive Committee
2007-2008	Associate Director for Facilities, School of Life Sciences Safety committee (member) Insect Science Center Executive Committee
2008-2009	Associate Director for Facilities, School of Life Sciences Safety committee (member, supervisor) Insect Science Center Executive Committee Organizing Committee, Environmental Life Sciences Ph.D. program

DEPARTMENTAL and UNIVERSITY SERVICES, continued

2009-2010	Sabbatical
2010-2011	Director of Research Facilities and Infrastructure, Office of Knowledge Enterprise Development, ASU (50% appointment)
2011-2012	Director of Research Facilities and Infrastructure, Office of Knowledge Enterprise Development, ASU (75% appointment)

MENTORING

Current Postdoctoral Fellows: Vivian Callier (Ph.D. 2011, Duke University); C. Jaco Klok (Ph.D., 1999, University of Pretoria); John Vanden Brooks (Ph.D. 2006, Yale University)

Past Postdoctoral Fellows: 1998-2001, H. Arthur Woods (Ph.D, 1998, Univ. of Washington, currently Assistant Professor with a NSF CAREER award at Univ. of Montana, Missoula); summer 1997, Patricia Ashby, Ph.D. 1987, Univ. of New Mexico, currently Associate Professor, Scottsdale Community College

Matriculated Graduate Students:
Joanna Henry (M.Sc. August 2011, currently lab coordinator, School of Life Sciences, ASU)
Sydella Blatch (Ph.D. May 2008, NSF Predoctoral Award, PDF at NIH, Bethesda; currently Assistant Professor, Stevenson University)
Kendra Greenlee (Ph.D. May 2004, NSF Doctoral Dissertation Improvement Grant, EPA Star Award, currently Assistant. Professor, North Dakota State, Fargo with a NSF Career Award)
Manoush Farzin (M.Sc. 2010, currently lab coordinator, School of Life Sciences, ASU)
Melanie Frazier (M.Sc. 2000, currently E.P.A. scientist)
Scott Kirkton (Ph.D. May 2004, NSF Doctoral Dissertation Improvement Grant, Best Student Paper, Society for Experimental Biology 2002, Best Student Paper, SICB 2003; NIH PDF at Scripps Research Institute, San Diego, currently Assistant Professor, Union College)
Marc Perkins (M.Sc. 2001, currently Associate Professor, Orange County Community College)
Brenda Rascón (M.Sc. Dec. 2007, currently in Ph.D. program, Univ. Norway)
Steven Roberts (Ph.D. May, 1998, Outstanding Graduate of the College of Liberal Arts and Sciences, currently Chair and Professor, Central Michigan University, Mt. Pleasant).

Current Graduate Students: Arianne Cease, James Waters

Graduate Committee Service: student in the Dept. of Biology, Arizona State University unless otherwise indicated):

Past:
Kirk Anderson, Patricia Ashby (Univ. of New Mexico), Susan Bertram, Chris Breitmeyer, Michael Bizeau, Michael Black, Rebecca Clark, Michael Crowley (Exercise Science), Dean R. Dobberfuhl, Jennifer Edmonds, G. Ian Gallicano, Martin Gerrits, Tamar Helmy, Ty Hoffman, Carter Holbrook, Richard Howlett (Exercise Science), Kate Ihle, Matt Jackman (Exercise Science), Glennis Julian, Michael Kennedy, Rosemary Knapp, Eva Lacy, Neil Mackay, Devin Martin, Susan McKinley, Justin Merry, Este Miranda, Lee McCoy, Nathan Morehouse, John Olson (Utah State Univ.), Dale Pasino, Randi Papke, John Robertson, Michael Quinlan, Darleen Sandoval (Exercise Science), Zachary Stahlschmidt, Randy Tracy, Tina Traustidottir (Exercise Science), James Watts, Todd Weaver, Todd McWhorter (Univ. of Arizona), Adrienne Williams (Univ. of California, Irvine), Blair Wolf, Mark Wooden, Mathew Wright, Kasey Yturralde, John Zehmer

Current:
Jake Brashears, Josh Gibson, Chris Goforth (Univ. Arizona), Dina Grayson, Sarah Kuzmiak, Christian Wright

MENTORING, continued
Undergraduate Researchers Supervised (current status):

Past:
Todd Albert (currently staff at ASU)
Aaron Bruce (M.D., Midwestern University)
Greg Burnett (M.D. program, Univ. of Arizona)
TimaSue Cantu (Gates Scholar, currently in nursing school)
Patricia Coulter (unknown)
Margaret Creswell (Ph.D., Univ. Texas, Austin, Biology),
Seth Dobrin (Ph.D., A.S.U., Microbiology),
Saundra Dohwenrend (Barrett honor's thesis, currently lab technician Univ. Washington)
Kristina Egbert (unknown)
Jennifer Esman (unknown)
Kyra Espinosa (B.Sc., Bioengineering, A.S.U.)
Erica Feuerbacher (currently in Ph.D. program, Cornell Univ.),
Colleen Ford (B.Sc., working as high school biology teacher)
Melanie Frazier (Ph.D., University of Washington, EPA postdoc)
James Gerace (M.D., DePaul Univ. Medical School),
Nicholas Gonzalez (M.D., Univ. Wisconsin Medical School),
John Gransee (B.A. in Psychology from ASU, currently a counselor)
Kendra Greenlee (currently Assistant Professor, North Dakota State)
Joy Gur-Lavi (M.D., Emory Univ. Medical School),
Olivera Grubisha (unknown)
Scotti Gulinson (DVM, Univ. Calif. Veterinary School, Davis),
Steve Hammet (M.D., Univ. of Arizona)
DeeAnn Hartung, 2000-2002, (Ph.D., 2009, Univ. of California, Santa Barbara, currently biologist Univ. Colorado, Denver)
Erica Heinrich (Ph.D. program, Univ. California, Irvine)
Joanna Henry (lab coordinator at ASU)
Nicole Holden (currently in Ph.D. program at Univ. British Columbia)
Alexander Hubb (B.Sc., currently lab technician at Washington Univ.)
Alexander Keyel Ph.D. student at Tufts University)
Sakina Kino (B.Sc., Biochemistry degree at ASU, unknown)
Katie Krolikowski (Ph.D., Harvard Univ., Biology, Asst. Professor, Contra Costa College),
Jesse LaFrenier (architect)
Dillon LaMoure unknown)
Kyle Meyer (unknown)
Ben McKinley (currently in medical school, Univ. Minnesota)
Elyse Munoz, (currently in Ph.D. program in biology at Penn State)
Uio Sara Liao (currently software consultant),
Xu Lui (Ph.D., Purdue Univ., Biochemistry),
Danielle Niren (working as a biochemist)
Ekwutosi Ohuro (M.D., Tufts University)
Rekha Nair (unknown)
Christina Nebeker (unknown)
Jared Nsika (currently in M.D./Ph.D. program at U.C., San Diego)

MENTORING (continued)
Past Undergraduate Researchers
Nicholas Pierce (technician at Sun Health)
Andrew Rael (biotechnology technician)
Katrina Ramsey (Barrett honor's thesis, currently in Pharmacy School, Midwestern Univ.)
Brenda Rascon (currently in Ph.D. program at Univ. Norway)
Jennifer Stewart (Ph.D., Colorado State Univ., Immunotoxicologist, SNBL),
Michael Weed (currently working as volunteer in the lab)
Eric Wilkinson (M.D., Stanford Medical School)

Current Undergraduates in Lab:
Taylor Biddulph, Stephanie Heinrich, Adam House, Saman Jirjies, Ami Joshi, Elana Niren, Choognam Onoe, Teja Peela

ACADEMIC DEVELOPMENT

Summer 1993	Hughes Teaching Strategies Workshop (1 month)
Spring 1994	"Fast Plants" teaching workshop by Paul Williams (1 day)
Summer 2002	General Biology Workshop (1 week)
Sept 2009	Project Science Management workshop

PUBLIC SERVICE, OUTREACH

1993	Interview, NBC radio
1995	Interview, Channel 12, Phoenix
1995	Inerview, Tribune Newspapers
1991-1996	Judge, Broadmoor Science Fair
1995-1996	Monthly science demonstrations, Waggonner Elementary School
1996	Interview, CNN (Bailey Barash)
1996	Interview, BBC World News Service (Ruth Linton), phone interview broadcast world-wide on "Programme Science", Oct. 4 and 5
1996	Interview, German News Service (Gisela Ostwald)
1996	Interview, Washington Post (Kurt Supple)
1996	Interview, New Scientist Magazine (Ben Crystal)
1996	Interview, Tribune Newspapers
1997	Channel 3 Halloween interview re edible insects
1998	ASU Insight and ASU Research articles re giant insects http://researchmag.asu.edu/stories/bugs.html http://researchmag.asu.edu/stories/test.html
1999	Featured on KAET (Channel 8): ASU Research
2000	Interviewed for Raven & Johnson's Biology "Real People Doing Real Science" feature
2001	Interviewed by Annie Bates, BBC
2002	Interviewed by John Doyle, British channel 6
2002	Monthly science demonstrations, Waggoner Elementary
2002	Biology career day: Kyrene Middle School
2002	Desert Botanical Gardens Presentation: "Hoppin' Hoppers"
2003	Several science demonstrations, Waggoner Elementary
2004	New York Times interview: front page article regarding giant insects
2005	Larry Hanlon, Discovery Magazine (http://dsc.discovery.com/news/briefs/20050815/megainsect.html) Science News Dec. 17, 2005 by Sid Perkins: http://www.findarticles.com/p/articles/mi_m1200/is_25_168/ai_n16029291
2006	Dagmar Röhrlich, German Public Radio: Deutschlandfunk
2006	Multiple science demonstrations at Waggoner Elementary School Living on Earth Radio Interview (http://www.loe.org/shows/segments.htm?programID=06-P13-00042&segmentID=8) American Physiological Society News Release http://www.the-aps.org/press/conference/vabeach/11.htm Coverage by PHYSORG.COM 16:51, Oct. 2006 http://www.physorg.com/news79804314.html Coverage by EurekaAlert.com: http://www.eurekalert.org/pub_releases/2006-10/aps-gim100706.php Inside JEB: http://jeb.biologists.org/cgi/reprint/207/3/387

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