MARISA O. KING, PH.D.

PROFESSIONAL SUMMARY

Proven record of driving student engagement through enhanced teaching techniques and learning objectives. Dedicated promoter of Inclusion, Diversity, and Equity measures across both faculty and student activities. Champion of Biology students' collaborations with public and private sector organizations.

EDUCATION

Ph.D., Zoology (Animal Physiology), May 2010; *Washington State University, Pullman, WA.*

Bachelor of Science, Zoology, May 2003; *University of California at Santa Barbara, Santa Barbara, CA.*

Associate of Science, May 2001; *San Diego Community College District, San Diego, CA.*

PROFESSIONAL EXPERIENCE

Professional Teaching Experience

Career Instructor- Clark Honors College at the University of Oregon, Eugene, OR, September 2024-present

Academic Coach – Lane Community College, Eugene, OR, April 2024-September 2024.

- Academic support for biology and A&P students.

Biology Instructor – The Princeton Review, Ney York City, NY, December 2022-September 2024.

- Online STEM instruction for K-12, undergraduate, graduate, and professionals.

Assistant Professor – Grand View University, Des Moines, IA, August 2016-August 2022

- Lecture and lab professor of five reoccurring courses.
- Developed a cross-functional lecture on Reproductive and Developmental Biology, where a co-teaching platform was used to enhance learning opportunities.
- Champion of student engagement in scholastic, athletic, and outreach activities.
- Functional lead of multiple faculty teams, including academic dishonesty, IDE, and remote learning.
- Spearheaded multiple activities on remote learning, including the use of HyFlex programs.
- Academic Advisor for more than 16 students every semester.
- Mentor for undergraduate research projects, including examining physiological change in soccer players over the course of a match.
- Faculty advisor to the Biology Club.

Adjunct Professor – Des Moines Area Community College, Ankeny, IA, May 2014-June 2016.

- Lecture and lab professor of four reoccurring courses.
- Responsible for developing a new learning platform for the Environmental Science course.
- Improved learning activities for Anatomy and Physiology students through outreach activities at local hospitals.

Adjunct Professor - Simpson College, Indianola, IA, May 2014-December 2014.

- Lecture and lab professor of 2 courses in Ecology and Environmental Issues.

Teaching Assistant - Washington State University, August 2004-May 2010

- Lecture and lab teaching assistant of 4 reoccurring courses.
- Co-developed new physiology teaching lab experiments to reduce the mortality of laboratory animals.
- Advised students on extra-curricular physiology learning and research, some leading to peer-reviewed publications.

Professional Research Experience

Postdoctoral Research Fellow - University of South Dakota, May 2011-May 2013.

- Developed a unique assay to examine the physiological change in birds from seasonal climate differences.
- Created a habitat monitoring program with undergraduate students to enhance data collection and examine year-to-year changes in local habitat.
- Developed several analytical scripts to calculate sample and population statistics.
- 11 publications and guest lecturer for multiple courses.

Postdoctoral Research Fellow - Washington State University, May 2010-May 2011.

- Created a research program to examine physiological response to insect parasitism.
- Through collaboration with campus undergraduate engineering students, we built one-of-a-kind insect feeding boxes, which allowed us to reduce dependency on live birds for parasitism assays.
- Co-developed new physiology teaching lab experiments to reduce the mortality of laboratory animals.
- Advised students on extra-curricular physiology learning and research, some leading to peer-reviewed publications.

Doctoral Student/Research Assistant - Washington State University, August 2004-May 2010

- Teaching Assistant across multiple courses.
- Accountable for leadership of the avian immunology and physiology research program.
- Created a robust research system between the field, lab, and analytical labs.
- Lead collaborations between undergraduates and research groups on campus, leading to greater engagement of students in coursework.
- Achieved high-impact physiology research, including grant and award funding or more than $125,000 by the EPA STAR Fellowship Program, ARCS achievement funding.
- Participated in model testing projects by implementing in-laboratory replicates of fieldwork.

Field Assistant – University of California Santa Barbara, 2001-2004

- Excelled as field assistant for the design, construction, and implementation of a large-scale field-based research project.

Field Assistant – University of California San Diego, 2004-2004

- Primary field data collection in research sites across the US Southwest.

Industry Experience

Antibody and Marker Development – DuPont Pioneer, May 20013- June 2014

- Created large scale antibody and molecular marker assays.
- Assays were instrumental in the characterization of potentially hazardous metabolites.

TEACHING EXPERIENCE BY COURSE (*DENOTES LECTURE AND LAB)

Grand View University

- **Human Physiology*** - (Fall and Spring Semester). 2016-2022.
- **Physiology*** – (Fall Semester). 2016-Present.
- **Reproduction and Dev. Biology** - (Spring Semester). 2019-2022.

- **Journal Club** – (Spring and Fall Semester). 2019-2022.
- **Nutrition and Metabolism** – (Fall Semester). 2016-2018

Des Moines Area Community College
- **Anatomy and Physiology I and II*** - (Fall and Spring Semester). 2014-2015
- **Essentials of Anatomy and Physiology*** - (Fall Semester). 2014
- **Environmental Science for Non-majors** – (Spring Semester). 2015
- **Introductory Biology*** - (Fall and Spring Semester). 2014 - 2015

Simpson College
- **Ecology*** - (Fall Semester). 2014
- **Environmental Issues*** - (Fall Semester). 2014

Washington State University
- **Human Physiology*** - 2005-2009.
- **Mammalian Physiology*** - 2006-2008.
- **Comparative Physiology** - 2006.
- **Introductory Biology for Non-Majors*** - 2004.

Other teaching experience
- **Comparative Physiology** - Guest lecturer. University of South Dakota. 2012.
- **Ornithology** - Guest lecturer on avian immunology. University of South Dakota. 2012.

AWARDS AND CERTIFICATION

Certificate of Reproductive Biology - 2009
- The Center for Reproductive Biology's Graduate and Training Program - Washington State University

EPA's Science to Achieve Results Fellowship (EPA STAR) - 2007
- EPA STAR Fellowship for research and tuition costs - Washington State University
- *$111,000*

Achievement Rewards for College Scientists (ARCS) - 2004
- Awarded to graduate students with outstanding scholastic records - Washington State University
- *$15,000*

PUBLICATIONS

Swanson, D.L., **King, M.O.,** and Zhang, Y. *2019*. Within-winter flexibility in muscle and heart lipid transport and metabolism. *Journal of Comparative Physiology B*

Swanson, D.L., **King, M.O.,** Culver, W., and Zhang, Y. *2017*. Within-winter flexibility in muscle masses, myostatin, and cellular aerobic metabolic intensity in passerine birds. *Physiological and Biochemical Zoology.*

Zhang, Y., **King**, **M.O.,** Harmon, E., Eyster, K., and Swanson, D.L.. *2015*. Migration-induced variation of fatty acid transporters and cellular metabolic intensity in passerine birds. *Journal of Comparative Physiology B*

Zhang, Y., **King**, **M.O.**, Harmon, E., and Swanson, D.L. *2015*. Mechanisms of metabolic flexibility in small birds: seasonal variation of fatty acid transporters and cellular metabolic intensity. *Physiological and Biochemical Zoology*

King, M.O., Zhang, Y., Carter, T., Johnson, J., Harmon, E., and Swanson, D.L. *2015*. Phenotypic flexibility of skeletal muscle and heart masses and expression of myostatin and tolloid–like proteinases in migrating passerine birds. *Journal of Comparative Physiology B*

Swanson, D.L., Zhang, Y. and **King, M.O.** *2014*. Mechanistic drivers of flexibility in summit metabolic rates of small birds. *PLOS ONE*

Swanson, D.L., **King, M.O.**, and Harmon, E. *2014.* Seasonal variation in pectoralis muscle and heart myostatin and tolloid-like proteinases in small birds: a regulatory role for seasonal phenotypic flexibility? *Journal of Comparative Physiology-B.*

Swanson, D.L., Zhang, Y., Liu, J., Mercord, C. and **King, M.O.** *2014* Relative roles of temperature and photoperiod as drivers of metabolic flexibility in dark-eyed juncos. *Journal of Experimental Biology*.

Swanson, D.L., Zhang, Y. and **King, M.O.** *2013*. Individual variation in thermogenic capacity is correlated with flight muscle size but not cellular aerobic capacity in American goldfinches, *Spinus tristis. Physiological and Biochemical Zoology.*

King, M.O., Swanson, D.L. *2013.* Activation of the immune system incurs energetic costs but has no effect on thermogenic performance in house sparrows (*Passer domesticus*) undergoing acute cold stress. *Journal of Experimental Biology*.

Swanson, D.L., **King, M.O.** *2013.* Short-term captivity influences maximal cold-induced metabolic rates and their repeatability in summer-acclimatized American goldfinches (*Spinus tristis*). *The Evolution of Phenotypic Plasticity.*

King, M. O., Owen, J. P. & Schwabl, H. 2011*.* Injecting the mite into ecological immunology: The adaptive immune response of house sparrows challenged with hematophagous mites. *Auk*.

King, M. O., Owen, J. P. & Schwabl, H. 2010. Are Maternal Antibodies Really that Important? Patterns in the Devlopment of Humoral Immunity in Altricial Passerine House Sparrows (*Passer domesticus*). *PLoS ONE. 5:e9639*

Huber, S.K., Owen, J.P., Koop, J.A.H., **King, M.O.**, Grant, P.R., Grant, B.R., Clayton, D.H. 2010. Ecoimmunity in Darwin's finches: Invasive parasites trigger acquired immunity in the medium ground finch (*Geospiza fortis*). *PLOS ONE 5:e8605.*

CONTRIBUTED PRESENTATIONS

2012 Activation of the immune system incurs energetic costs but has no effect on thermogenic performance in House Sparrows (*Passer domesticus*) undergoing acute cold stress. North American Ornithological Conference. Vancouver, British Columbia, Canada.

2012 Activation of the immune system incurs energetic costs but has no effect on thermogenic performance in House Sparrows (*Passer domesticus*) undergoing acute cold stress. South Dakota Academy of Sciences. Vermillion, SD.

2012 Seasonal phenotypic flexibility of muscle aerobic enzyme activities in small birds. Society for Integrative and Comparative Biology, Charleston, SC.

2011 Immunologic development and host-parasite dynamics in House Sparrows (*Passer domesticus*). Invited Speaker, University of South Dakota, Vermillion, SD.

2010 Are maternal antibodies really that important? patterns in the devlopment of humoral immunity in altricial passerine House Sparrows (*Passer domesticus*). American Ornithologists' Union, San Diego, CA.
2009 Injecting the mite into ecological immunology: measuring the adaptive immune response and fitness consequences of house sparrows challenged with hematophagous mites. American Ornithologists' Union, Philadelphia, PA.
2009 Host-parasite interactions: Immune defenses of passerine house sparrows against hematophagous mites. Evolution, Moscow, ID.

LABORATORY AND TECHNICAL PROFICIENCIES

Protein

- Enzyme-linked immunosorbent assays (ELISA; spectrophotometric and fluorometric)
- Polyclonal antibody production
- Western blotting
- SDS-polyacrylamide gel electrophoresis (SDS-PAGE)
- Protein extractions
- Protein assays
- Antibody labeling
- Capillary-based electrophoresis assays
- Aptamer-based target detection

Endocrine

- Hormone assays via radioimmunoassay, ELISA
- Hormone extractions

Immune

- Cell/bacteria isolation and culturing
- Chemotaxis assays
- Oxidative burst assays
- Bactericidal and compliment-mediated assays

DNA

- DNA extraction
- SNP molecular marker design
- PCR, qPCR/ rtPCR
- SNP molecular marker design

Field Proficiencies

- Blood sampling
- Mist-Netting
- Animal Banding
- Yolk biopsies and injections
- Insect rearing and handling
- Animal care and handling

Computer and Application Proficiencies

- Blackboard
- Moodle
- Zoom
- Panopto

- Laboratory Information Management System (LIMS)
- Software programs: SPSS, JMP, SAS, Adobe CC, SoftMax Pro (microplate data acquisition and analysis software).
- Office products including, MS Word, MS PowerPoint, MS Excel, as well as Google-based office products.
- Macintosh, Windows, and Linux OS