

MARION RUTH PREEST, PH.D.
PRITZKER FAMILY FOUNDATION PROFESSOR OF BIOLOGY

PERSONAL

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PRESENT POSITION

Professor
W.M. Keck Science Department of Claremont McKenna,
Pitzer, and Scripps Colleges
925 N. Mills Ave
Claremont, CA 91711

EDUCATION

1988-93	Ph.D. Ecology and Systematics	Cornell University, USA
1986-88	M.S. Ecology and Systematics	Cornell University, USA
1981-85	B.Sc. (Hons) Zoology	Otago University, NZ

Ph.D. Dissertation: Environmental and physiological correlates of organismal performance. Advisor: F. Harvey Pough, Professor of Ecology and Systematics and Professor of Physiology, Cornell University.

M.S. Dissertation: The interactive effects of body temperature and hydration state on locomotor performance of toads. Advisor: F. Harvey Pough, Professor of Ecology and Systematics and Professor of Physiology, Cornell University.

B.Sc. (Hons) Dissertation: Aspects of the metabolism of the Otago giant skinks. Advisor: Nicola M. Grimmond, Senior Lecturer, Department of Zoology, Otago University.

PROFESSIONAL POSITIONS

2014–2017	Interim Dean of Science	W.M. Keck Science Department of Claremont McKenna, Pitzer, and Scripps Colleges, Claremont, CA
2009–present	Professor	W.M. Keck Science Department of Claremont McKenna, Pitzer, and Scripps Colleges, Claremont, CA
2002–2009	Associate Professor	W.M. Keck Science Department of Claremont McKenna, Pitzer, and Scripps Colleges, Claremont, CA
2001, 2004	Visiting Researcher	Dept. of Zoology, University of Otago, NZ
1999–2002	Assistant Professor	W.M. Keck Science Department of

		Claremont McKenna, Pitzer, and Scripps Colleges, Claremont, CA
1996–1999	Assistant Professor	Department of Biology, University of Miami, Coral Gables, FL, 33124
1995	Research Associate	Department of Biology, University of San Diego, San Diego, CA 92110
1993–1995	Postdoctoral Research Associate	Department of Biology, San Diego State University, San Diego, CA 92182
1993–1994	Physiological Consultant	Hubbs Marine Research Center, Sea World Research Institute, San Diego, CA 92109

MAJOR FIELDS OF RESEARCH INTEREST

Comparative, Integrative, and Environmental Physiology of Vertebrates

Physiology and Ecology of Animal Energetics
 Thermal Biology of Terrestrial Ectotherms
 Osmoregulatory Physiology
 Herpetology
 Muscle Physiology

TEACHING EXPERIENCE

1999-present	The Claremont Colleges (all courses at the undergraduate level) Comparative Physiology (Lecture and Laboratory) Introductory Biology (Majors Lecture and Laboratory) Vertebrate Physiology (Laboratory) Concepts in Biology (Non-Majors Lecture and Laboratory) Herpetology (Lecture) Animal Physiological Ecology (Lecture) Global Public Health: Physiology and Policy (Non-Majors Lecture and Laboratory)
1996-1999	University of Miami Animal Physiological Ecology (Graduate Lecture/Seminar) General Physiology (Undergraduate Lecture) Introductory Biology (Non-Majors Undergraduate Lecture) Projects in Biology (Undergraduate Directed Research) Readings in Biology (Undergraduate Seminar) Research Colloquium (Undergraduate Seminar) Tropical Field Biology (Undergraduate Lecture and 8 day hike in Braulio Carillo National Park, Costa Rica)
1993-1994	San Diego State University Animal Physiology (Guest Lectures)

Special Topics in Animal Physiology (Guest Lectures)

1986-1992 Cornell University
Introductory Biology (Laboratory)
General Ecology (Discussion Group)
The Vertebrates (Laboratory)

ARTICLES:

- PUBLISHED** Stanhope, E., L. Ziegler, T. Haque, L. Le, M. Vines, G. K. Davis, A. Zieffler, P. Brodfuehrer, M. Preest, J. Belisky, C. Umbanhowar, Jr., P. J. Overvoorde. 2017. Development of a Biological Science Quantitative Reasoning Exam (BioSQuaRE). *CBE Life Sciences* 16, DOI:10.1187/cbe.16-10-0301
- Preest, M.R., **M.J. Ward***, T. Poon, and J.W. Hermanson. 2016. Chemical prey luring in Jackson's chameleons. *Physiological and Biochemical Zoology* 89(2):110-117.
- Mendelson, J.R., III, J.B. Pramuk, R. Gagliardo, A. Pessier, B.B. Rothermel, K.C. Zippel, C. Bevier, M.R. Preest, and B. Crother. 2009. Considerations and recommendations for raising live amphibians in classrooms. *Herpetological Review* 40:142-144.
- Mendelson, J.R., III, J.B. Pramuk, R. Gagliardo, A. Pessier, B.B. Rothermel, K.C. Zippel, C. Bevier, M.R. Preest, and B. Crother. 2009. Amphibian Recommendations. *Science and Children* 46 (8): 8.
- Preest, M.R. and A. Cree. 2008. Corticosterone treatment has subtle effects on thermoregulatory behavior and raises metabolic rate in the New Zealand common gecko, *Hoplodactylus maculatus*. *Physiological and Biochemical Zoology* 81: 641-650.
- Preest, M.R., A. Cree, and **C.L. Tyrrell***. 2005. ACTH-induced stress response during pregnancy in a viviparous gecko: No observed effect on offspring quality. *Journal of Experimental Zoology* 303A: 823-835.
- Preest, M.R., R. J. Gonzalez, and R. Wilson. 2005. A pharmacological examination of Na⁺ and Cl⁻ transport in two species of freshwater fish. *Physiological and Biochemical Zoology* 78: 259-272.
- Cree, A, **C.L. Tyrrell***, M.R. Preest, **D. Thorburn***, and L.J. Guillette, Jr. 2003. Protecting embryos from stress: corticosterone effects and the corticosterone response to capture and confinement during pregnancy in a live-bearing lizard (*Hoplodactylus maculatus*). *General and Comparative Endocrinology* 134: 316-329.

- Preest, M.R., **D. Folk***, and C.A. Beuchat. 2003. Decomposition of nitrogenous compounds by intestinal bacteria in hummingbirds. *The Auk* 120: 1091-1101.
- Preest, M.R. and F.H. Pough. 2003. Effects of body temperature and hydration state on organismal performance of toads, *Bufo americanus*. *Physiological and Biochemical Zoology* 76: 229-239.
- Meyer, V.M***, M.R. Preest, and **S.M. Lochetto***. 2002. Physiology of original and regenerated lizard tails. *Herpetologica* 58: 75-86.
- Beuchat, C.A., M.R. Preest, and E.J. Braun. 1999. Glomerular and medullary architecture in the kidney of Anna's hummingbird. *Journal of Morphology* 240: 95-100.
- Gonzalez, R.J. and M.R. Preest. 1999. Ionoregulatory specializations for exceptional tolerance of ion-poor acidic waters in the neon tetra (*Paracheirodon innesi*). *Physiological and Biochemical Zoology* 72: 156-163.
- Pough, F.H., M.R. Preest, and M.H. Fusari. 1997. Prey-handling and the evolutionary ecology of sand-swimming lizards (*Lerista*: Scincidae). *Oecologia* 112: 351-361.
- Preest, M.R. and C.A. Beuchat. 1997. Ammonia excretion by hummingbirds. *Nature* 386: 561-562.
- Preest, M.R. 1994. Sexual size dimorphism and feeding energetics in the lizard *Anolis carolinensis*. *Journal of Herpetology* 28: 292-298.
- Grimmond, N.M., M.R. Preest, and F.H. Pough. 1994. Energetic costs of feeding on different kinds of prey for the lizard *Chalcides ocellatus*. *Functional Ecology* 8: 17-21.
- Preest, M.R. 1993. Mechanisms of growth rate reduction in acid-exposed larval salamanders, *Ambystoma maculatum*. *Physiological Zoology* 66: 686-707.
- Preest, M.R., D.G. Brust, and M.L. Wygoda. 1992. Cutaneous water loss and the effects of temperature and hydration state on aerobic metabolism of canyon treefrogs, *Hyla arenicolor*. *Herpetologica* 48(2): 210-219.
- Preest, M.R. 1991. Energetic costs of prey ingestion in a scincid lizard, *Scincella lateralis*. *Journal of Comparative Physiology B* 161: 327-332.
- Preest, M.R. and F.H. Pough. 1989. Interaction of temperature and hydration on locomotion of toads. *Functional Ecology* 3: 693-699.

(* denotes student coauthor)

Meeting Summaries Published in Herpetological Review (written as Secretary of SSAR)

Herp Review 48(4): In Press	Herp Review 47(4): 719-731
Herp Review 46(4): 690-711	Herp Review 45(4): 731-743
Herp Review 44(4): 533-545	Herp Review 43(4): 514-528
Herp Review 42(4): 457-469	Herp Review 41(4): 401-409
Herp Review 40(4): 381-388	Herp Review 39(4): 385-394
Herp Review 38(4): 369-379	Herp Review 37(4): 386-391
Herp Review 36(4): 354-360	Herp Review 35(4): 305-312
Herp Review 34(4): 283-288	

PAPERS/POSTERS PRESENTED

Cynthia Selassie, David Drew, Clarissa Cheney, Dianna Graves, Marion Preest. 2016. Pre-freshman Summer immersion Programs to Increase Minority Retention in STEM Disciplines: Two Different Strategies. American Society for Cell Biology, Seattle, WA

Preest, M.R., **M. Ward***, T. Poon, and J. Hermanson. Chemical Prey Luring in Jackson's Chameleons: Time's Fun when you're having Flies. Southwest Regional Meeting of the Divisions of vertebrate Morphology and Comparative Biomechanics, Society for Integrative and Comparative Biology, San Bernardino, CA, 2012

Preest, M.R., **M. Ward***, T. Poon, and J. Hermanson. Chemical Prey Luring in Jackson's Chameleons: Time's Fun when you're having Flies. World Congress of Herpetology, Vancouver, Canada, 2012.

Cree, A., M.R. Preest, and J. Rock. Maternal influence on sex in a live-bearing gekkotan lizard from southern New Zealand. Joint Meeting: Society for Reproductive Biology and Endocrine Society of Australia, Christchurch, New Zealand, 2007.

Preest, M.R. and A. Cree. Elevated corticosterone concentration affects thermoregulatory behaviour and raises metabolic rate in the New Zealand common gecko, *Hoplodactylus maculatus*. World Congress of Herpetology, Stellenbosch, South Africa, 2005

Preest, M.R., A. Cree, and **C.L. Tyrrell***. Acute stress response during pregnancy in a viviparous gecko: effect on offspring quality. Society for the Study of Amphibians and Reptiles Meeting, Manaus, Brazil, 2003.

Cree, A., **C.L. Tyrrell***, M.R. Preest, and **D. Thorburn***. Do live-bearing lizards suppress their adrenocortical stress response during pregnancy? International Congress of Physiology and Biochemistry, Mt Buller, Australia, 2002.

Clum, N.J. and M.R. Preest. Incubation history and embryonic development in boat-tailed grackles. North American Ornithological Conference, 2002.

Clum, N.J. and M.R. Preest. Incubation history and embryonic development in boat-tailed grackles. Society for Integrative and Comparative Biology Meeting, 2002.

Preest, M.R. and R.J. Gonzalez. Ion balance in the extremely acid-tolerant neon tetra. Society for Integrative and Comparative Biology Meeting, 2001.

Lochetto, S*. and M.R. Preest. Autotomy and predator defense in lizards: Is a regenerated tail as effective as the original? Society for Integrative and Comparative Biology Meeting, 1999.

Preest, M.R. and C.A. Beuchat. Forms of nitrogen excretion in hummingbirds: Ammonotelically in a bird? American Physiological Society Intersociety Meeting, 1994.

Beuchat, C.A. and M.R. Preest. Physiological ecology of hummingbirds. Round table discussion, International Ornithological Congress, Vienna, Austria, 1994.

Preest, M.R. and C.A. Beuchat. Forms of nitrogen excretion in hummingbirds: Ammonotelically in a bird? International Ornithological Congress, Vienna, Austria, 1994.

Preest, M.R. and C.A. Beuchat. Forms of nitrogen excretion in hummingbirds. Western Physiological Ecology Meeting, 1994.

Preest, M.R. Mechanisms of growth rate reduction in acid-exposed larval salamanders. Western Physiological Ecology Meeting, 1993.

Preest, M.R. Feeding performance of acid-exposed larval salamanders: Mechanisms of growth rate reduction. American Society of Zoologists Meeting, 1992.

Pough, F.H., M.H. Fusari, and M.R. Preest. Prey-handling by surface-dwelling and fossorial lizards. American Society of Zoologists Meeting, 1992.

Pough, F.H. and M.R. Preest. Effects of dehydration and body temperature on organismal performance of toads, *Bufo americanus*. American Society of Zoologists Meeting, 1991.

Preest, M.R. Energetic costs of feeding in a lizard, *Scincella lateralis*. American Society of Zoologists Meeting, 1989.

Brust, D.G. and M.R. Preest. The effects of temperature and hydration state on aerobic metabolism of canyon treefrogs, *Hyla arenicolor*. American Society of Zoologists Meeting, 1988.

Preest, M.R. and F.H. Pough. Interactive effects of body temperature and hydration state on locomotor performance of a toad, *Bufo americanus*. American Society of Zoologists Meeting, 1987.

AWARDS AND HONORS

2012 Appointed Pritzker Family Foundation Professor of Biology

2006 Mary W. Johnson Faculty Achievement Award in Scholarship, Scripps College

2004 Mary W. Johnson Faculty Achievement Award in Scholarship, Scripps College

