

Biographical Sketch – Saurabh S. Kulkarni, PhD

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A. Professional Preparation

INSTITUTION	FIELD	DEGREE and YEARS
University of Cincinnati, USA	Biology	Ph.D. 2007-2012
Pune University, India	Biodiversity	M.S. 2004-2006
Pune University, India	Computer Engineering	B.E. 1999-2003

B. Grants and Awards

2011: Distinguished Dissertation Fellowship Award, UC (\$45,000)
2011: Graduate Student Award for Exemplary Scholarship in Life Sciences, UC
2011: Journal of Experimental Biology Travel Fellowship (\$3081)
2011: Travel Award, North American Society for Comparative Endocrinology (\$400)
2011: Robert J. Vestal Outstanding PhD Student of the Year, Biological Sciences, UC
2011: GSGA Research Award, UC (\$500)
2011, 10, 09, 08: Wiemen/Wendel/Benedict Research Grant, UC (\$4950)
2010: University Research Council Graduate Fellowship, UC (\$3000)
2010, 09: GSGA Conference Travel Award, UC (\$800)
2009: Journal of Experimental Biology travel fellowship (\$1500).
2008: Asia Seed Grants, Cleveland Zoo (\$3449)

C. Publications (In prep)

- 2012 **Kulkarni, S. S.**, Gomez-Mestre, I., Denver, R. J. and Buchholz, D.R. (In Prep. for Evolution). Metabolism physiology links plasticity and diversity in spadefoot toads.
- 2012 **Kulkarni, S. S.**, Gomez-Mestre, I., Denver, R. J. and Buchholz, D.R. (In writing for Evolution). Phenotypic divergence among spadefoot toad species reflects accommodation of mechanisms underlying developmental plasticity.
- 2012 **Kulkarni, S. S.**, Gomez-Mestre, I. and Buchholz, D.R. (In writing for Functional Ecology). Early nutrition stress impairs a tadpole's ability to respond to water reduction stress in *Pelobates Cultripes*.
- 2012 Gomez-Mestre, I., **Kulkarni, S. S.** and Buchholz, D.R. (In writing for General and Comparative Endocrinology). Comparing ELISA and RIA to measure corticosterone in *Xenopus laevis* tadpoles.
- 2012 Gomez-Mestre, I., **Kulkarni, S. S.** and Buchholz, D.R. (In writing for Functional Ecology). Endocrine and molecular mechanisms underlying phenotypic plasticity in *Pelobates Cultripes*.

D. Publications

- 2012 **Kulkarni, S. S.** and Buchholz, D.R. Developmental programs and endocrine disruption of frog metamorphosis: The perspective from microarray analysis. Seminars in Cell and Developmental Biology.

2. 2012 **Kulkarni, S. S.** and Buchholz, D.R. Identification of gene regulation patterns by interacting effects of corticosterone and thyroid hormone in *Xenopus tropicalis* tadpoles. Endocrinology.
3. 2011 **Kulkarni, S. S.**, Moskalik, C., Gomez-Mestre, I., Storz, B. and Buchholz, D.R. Evolutionary reduction of developmental plasticity in desert spadefoot toads. Journal of Evolutionary Biology. DOI: 10.1111/j.1420-9101.2011.02370.x
4. 2010 **Kulkarni, S.S.**, Singamsetty, S. and Buchholz, D.R. Corticotropin-releasing factor regulates the development in the direct developing frog, *Eleutherodactylus coqui*. General and Comparative Endocrinology. 169, 3:225-230
5. 2010 Buchholz, D.R., Moskalik, C., **Kulkarni, S.S.**, Hollar, A. and Ng, A. 'Hormone regulation and the evolution of frog metamorphic diversity' in Mechanisms of Life History Evolution, Oxford University Press.

E. Abstracts and Presentations

- 2011 Gomez-Mestre, I., **Kulkarni, S.S.** and Buchholz, D.R. *Phenotypic divergence among spadefoot toad species reflects accommodation of mechanisms underlying developmental plasticity*. EVOLUTION annual meeting, Norman Oklahoma, USA
- 2011 **Kulkarni, S.S.** and Buchholz, D.R. *Identification of gene regulation patterns by interacting effects of corticosterone and thyroid hormone in Xenopus tropicalis tadpoles*. 7th International Symposium on Amphibian and Reptilian Endocrinology and Neurobiology, Ann Arbor, Michigan, USA
- 2011 **Kulkarni, S.S.**, Gomez-Mestre, I. and Buchholz, D.R. *Nutrition stress impairs a tadpole's ability to respond to water reduction stress in Pelobates Cultripes*. North American Society for Comparative Endocrinology, Ann Arbor, Michigan, USA
- 2010 **Kulkarni, S.S.**, Singamsetty, S., Elinson, R.P. and Buchholz, D.R. *Corticotropin-releasing factor regulates the development in the direct developing frog, Eleutherodactylus coqui*. 7th International Congress of Neuroendocrinology, Rouen, France.
- 2010 **Kulkarni, S.S.**, Singamsetty, S., Elinson, R.P. and Buchholz, D.R. *Regulation of development by corticotropin releasing hormone in the direct developing frog, Eleutherodactylus coqui*. Society for Integrative and Comparative biology (SICB), USA.
- 2009 **Kulkarni, S. S.**, Moskalik, C., Gomez-Mestre, I., Storz, B. and Buchholz, D.R. *Evolution of developmental plasticity in spadefoot toads*. Graduate poster forum presentation. University of Cincinnati, Cincinnati, USA.
- 2009 **Kulkarni, S.S.**, Singamsetty, S., Elinson, R.P. and Buchholz, D.R. *Regulation of development by corticotropin releasing hormone in the direct developing frog Eleutherodactylus coqui*. Current Frontiers in the Integration of Evolution, Development, and Genomics. Indiana University, Bloomington, USA
- 2009 **Kulkarni, S. S.**, Moskalik, C., Gomez-Mestre, I., Storz, B. and Buchholz, D.R. *Reduced plasticity as a consequence of shorter larval period in Scaphiopus couchii*. Society for Integrative and Comparative biology (SICB), Boston, USA
- 2006 **Kulkarni, S.** and Date, P. *Electronic guide for identification of anurans of Maharashtra, Northern Western Ghats*. Symposium on 'National biodiversity and ecosystem information infrastructure: Challenges and Potentials', Pune, India

F. Research Expertise

- Field research: Quadrata and transect sampling. Amphibian and reptile taxonomy.
- Lab research:
 - Gene cloning and expression analysis
 - Radioimmunoassay to measure corticosterone and thyroid hormone
 - Hormone treatments and microinjections
 - Immunohistochemistry
 - Microarray data analysis
 - Metabolic activity measurement and analysis in aquatic animals
- Parametric and Non-parametric statistical analysis

G. Research Experience

2012: To study endocrine mechanisms underlying plasticity and diversity among spadefoot toads at University of Michigan, Ann Arbor. Co-advisor: Dr. Robert Denver

2011: To study endocrine mechanisms underlying predator induced morphology of spadefoot toads at Donana Biological Station, Seville, Spain. PI: Dr. Ivan Gomez-Mestre.

2010: Measurement and analysis of metabolic activity of tadpoles of Western spadefoot toad and Common parsley frog at Donana Biological Station, Seville, Spain. PI: Dr. Ivan Gomez-Mestre.

2006: Research Assistant – Developing web based information about Reptiles and amphibians of Western Ghats. Indian Institute of Science, Bangalore, India. PI: Dr. Madhav Gadgil.

2003 – 2004: Research Assistant - Regular monitoring of changes in the ecosystem during the process of restoration, Pune, India. PI: Parakash Gole and Dr. Narayan Desai (Society for Ecological Restoration International, Chapter India). This work was a part of ongoing research on restoration of Wetlands from last 20 years. <http://www.ser.org>

H. Service to the Broader Scientific Community: (1) Reviewer for **PLOS One**, **Evolution**, **Hepetologica** and **Journal of Comparative Physiology B**.

I. Undergraduate Mentoring: I have mentored one undergraduate student for one of my dissertation studies.

J. Service to the Community:

2011: Faculty Representative, Department of Biology, UC

2011: Graduate Student Advisory Group, Department of Biology, UC

2009: Graduate Student Governance Association Representative, Department of Biology, UC

2009: Graduate Student Advisory Group, Department of Biology, UC

K. Collaborators and Other Affiliations: Ivan Gomez-Mestre, Doñana Biological Station, Spain; Richard Elinson, Duquesne University, USA; Dr. Robert Denver, University of Michigan, USA; Dr. Brian Storz, Centre College, USA.

L. Academic Appointments

2007-2011: Teaching assistant for Anatomy and Physiology and Freshman Biology.

2010, 09: Invited guest lecturer: Comparative Endocrinology (BIOL-679).

M. References

1. Dr. Daniel Buchholz (PhD Advisor)

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2. Dr. Ivan Gomez-Mestre

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3. Dr. Robert Denver

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