

Samraat Pawar — *Curriculum Vitae*

CONTACT	Lecturer, Department of Life Sciences Imperial College London Silwood Park Campus Buckhurst Road, Ascot Berkshire SL5 7PY, UK	 	<i>E-mail:</i> s.pawar@imperial.ac.uk <i>Phone:</i> +44 (0)2075942213 <i>www:</i> imperial.ac.uk/people/s.pawar
RESEARCH	Systems biology; Physiology and metabolic scaling; Biomechanics; Ecoinformatics; Population dynamical and evolutionary consequences of species interactions; Interaction network dynamics; Biological effects of climatic fluctuations; Community assembly and recovery of ecosystem function		
EDUCATION	PhD, Ecology, Evolution & Behavior , University of Texas, Austin, USA MSc, Ecology , Saurashtra University, India BSc, Zoology (<i>with distinction</i>), University of Pune, India	2002–2009 1997–1999 1993–1996	
PROFESSIONAL APPOINTMENTS	Lecturer Division of Ecology and Evolution, Imperial College London, UK Postdoctoral Scholar Department of Ecology & Evolution, University of Chicago, USA Postdoctoral Scholar Department of Biomathematics, University of California, Los Angeles, USA	2013– 2012–2013 2009–2012	
SELECTED PUBLICATIONS	<p>[1] †Pawar S., Dell A.I., Savage V.M., & Knies J.L. (2015). Real versus artificial variation in the thermal sensitivity of biological traits. <i>Am Nat</i>, in press.</p> <p>[2] †Gibert J.P.*, Dell A.I., DeLong J.P., & Pawar S. (2015) Scaling up trait variation from individuals to ecosystems. <i>Adv Ecol Res</i>, 52.</p> <p>[3] †Pawar S. (2015) The role of body size variation in community assembly. <i>Adv Ecol Res</i>, 52.</p> <p>[4] †Johnson L., Ben-Horin T.*, Lafferty K.D. , McNally A.*, Mordecai E., Paaijmans K.P., Pawar S., and Ryan S.J. (2015) Understanding uncertainty in temperature effects on vector-borne disease: A Bayesian approach. <i>Ecology</i>. 96:1, 203–213.</p> <p>[5] Johnson L., Lafferty K.D., McNally A.*, Mordecai E., Paaijmans K., Pawar S. & Ryan S.J., (2015) Mapping the Distribution of Malaria: Current approaches and future directions. In: <i>Analyzing and Modeling Spatial and Temporal Dynamics of Infectious Diseases</i> (ed. Chen D, Moulin B, Wu J) Wiley-Interscience, NJ, 189 p.</p> <p>[6] †Pawar S., Dell A.I., and Savage V.M. (2015) From metabolic constraints on individuals to the eco-evolutionary dynamics of ecosystems. in A. Belgrano, G. Woodward, and U. Jacob, editors. <i>Aquatic Functional Biodiversity: An Eco-Evolutionary Approach</i>. Elsevier.</p> <p>[7] †Pawar S. (2014) Why are plant-pollinator networks nested? <i>Science</i>. 345, 383.</p> <p>[8] Tang S.*, Pawar S. & Allesina S. (2014) Correlation between interaction strengths drives stability in large ecological networks. <i>Ecol Lett</i>. 17, 1094–1100.</p> <p>[9] Dell A.I., Pawar S. & Savage V.M. (2014) Temperature dependence of trophic interactions are driven by asymmetry of species responses and foraging strategy. <i>J Anim Ecol</i>, 83(1) 70-84. Media Coverage: ScienceDaily, EarthSky, Phys.Org, UCLA Newsroom, RedOrbit, AAAS EurekAlert, Bio-Medicine, NSF News</p> <p>[10] Dell A.I., Pawar S. & Savage V.M. (2013) The temperature dependence of biological traits. <i>Ecology</i>, 94 (5), 1205-1206.</p> <p>[11] Pawar S., Dell A.I. & Savage V.M. (2013). Reply to Giacomini et al. <i>Nature</i> 493 (7434), E2–E3</p> <p>[12] Mordecai E.*, Paaijmans K., Johnson L., Balzer C.*, Ben-Horin T.*, DeMoor E.*, McNally A.*, Pawar S., Ryan S.J., Smith T.* & Lafferty K.D. (2012). Physiological constraints lower the expected temperature for peak malaria transmission. <i>Ecol Lett</i>, 16(1), 22–30. Media Coverage: The Atlantic Wire, SUNY-ESF, NCEAS, New Scientist, Science Daily; UChicago CI, USGS Newsroom</p> <p>[13] Pawar S., Dell A.I. & Savage V.M. (2012). Dimensionality of consumer search space drives trophic interaction strengths. <i>Nature</i>, 486, 485–489.</p>		

Reviewed for F1000 by Shurin (8: Must Read)

Media Coverage: Science Daily; SFI News; Times of India; UCLA Newsroom

- [14] Dell A.I., **Pawar S.** & Savage V.M. (2011). Systematic variation in the temperature dependence of physiological and ecological traits. *Proc Natl Acad Sci USA*, 108, 10591–10596. (Commentary by Huey & Kingsolver in PNAS)
- [15] **Pawar S.** (2009) Community assembly, stability and signatures of dynamical constraints on food web structure. *J Theor Biol*, 259(3): 601–612.
- [16] **Pawar S.**, Koo M. S., Kelley C.**, Ahmed M.F., Choudhury S. & Sarkar S. (2007) Conservation assessment and prioritization of areas in Northeast India: priorities for amphibians and reptiles. *Biol Cons*, 136: 346–361.
- [17] **Pawar S.S.**, Birand A.C., Ahmed M.F., Sengupta S. & Raman T.R.S. (2007). Conservation biogeography in Northeast India: hierarchical analysis of cross-taxon distributional congruence. *Divers Distrib*, 13: 53–65.
- [18] Biswas S. & **Pawar S.S.** (2006). Phylogenetic tests of distribution patterns in South Asia: towards an integrative approach. *J Biosci*. 31(1): 95–113.
- [19] **Pawar S.S.** (2005) Geographical variation in the rate of evolution: effect of available energy, or fluctuating environment? *Evolution* 59 (1): 234–237.
- [20] **Pawar S.S.**, Rawat G.S. & Choudhury B.C. (2004). Recovery of frog and lizard communities following primary habitat alteration in Mizoram, Northeast India. *BMC Ecology* 4 (1): 10. (BMC Highly Accessed)
- [21] †**Pawar S.**, Dell A.I., & Savage V.M. (In review) Trophic interaction dimensionality drives bimodal size-ratio distributions in local communities.

TEACHING

- Lecturer**, *Modelling approaches in Global Change Biology, 3rd year BSc in Biological Sciences* 2015–
Department of Life Sciences, Imperial College London
- Lecturer**, *Training modules on Ecoinformatics, Imperial College NERC Doctoral Training Partnership on Science and Solutions for a Changing Planet* 2015–
Imperial College London
- Lecturer**, *Biological Computing in Python and R – MSc/MRes in Computational Methods in Ecology and Evolution* 2014–
Department of Life Sciences, Imperial College London
- Lecturer**, *Statistical Computing in R – Joint module for MSc/MRes in Ecology, Evolution and Conservation, MSc in Conservation Science, MSc in Ecological Applications, NHM MSc in Taxonomy and Biodiversity* 2014–
Department of Life Sciences, Imperial College London
- Lecturer**, *Computational Biostatistics, 1st & 2nd year BSc* 2014–
Department of Life Sciences, Imperial College London
- Lecturer**, *Energetics in Population and Community Ecology, 3rd year BSc in Biological Sciences* 2014
Department of Life Sciences, Imperial College London
- Lecturer**, *Computational Genomics and Ecoinformatics – MSc in Quantitative Biology and MRes in Biodiversity Informatics & Genomics*, Department of Life Sciences, Imperial College London 2013–14
Department of Life Sciences, Imperial College London
- Lecturer**, *Population and Community Ecology, Final year BSc* 2013
Department of Life Sciences, Imperial College London
- Guest Lecturer**, *Biological network Topology and Dynamics* 2012, 2010, 2009
Department of Biomathematics, University of California, Los Angeles
- Guest Lecturer**, *Modeling food web structure and dynamics* 2012
Department of Ecology and Evolutionary Biology, University of California, Los Angeles
- Teaching Assistant & Supplementary Instructor**, *Intro Cell and Molecular Biology* 2007
Section of Integrative Biology, University of Texas at Austin
- Teaching Assistant**, *Evolutionary Ecology* 2004
Section of Integrative Biology, University of Texas at Austin
- Teaching Assistant & Supplementary Instructor**, *Genetics & Evolution* 2007
Section of Integrative Biology, University of Texas at Austin
- Lab Teaching Assistant**, *Physiology & Functional Anatomy* 2007
Section of Integrative Biology, University of Texas at Austin

MAJOR GRANTS	<p>Impacts of global warming in sentinel systems: from genes to ecosystems 2015–19 £3,686,480 awarded from UK National Environment Research Council Large Grants Program (<i>Co-Investigator</i>)</p> <p>Vector Behaviour in Transmission Ecology (VectorBiTE) 2015–20 £499,290 awarded from UK BBSRC, £300,986 from US NIH under the US/UK Collaborative Research Collaboration Network Program (<i>Co-Investigator</i>)</p> <p>Can metabolic traits limit species invasions under climate change? 2015–17 £703,562 Awarded from UK National Environment Research Council (<i>Primary Investigator</i>)</p> <p>Understanding the Temperature Dependence of Consumer-resource Interactions 2009 – 2012 \$407,000 awarded, NSF Division of Environmental Biology (<i>Senior Personnel</i>)</p>
HONORS AND AWARDS	<p>Nominee, UCLA Chancellors Award for outstanding postdoctoral research accomplishment 2011</p> <p>University Continuing Fellowship, University of Texas at Austin 2008–09</p> <p>Frank & Fern Blair Fellowship, Section of Integrative Biology, University of Texas at Austin 2007</p> <p>Graduate Student Professional Development Award, University of Texas at Austin 2006</p> <p>Beijing Complex Systems Summer School scholarship, Santa Fe Institute, USA 2005</p> <p>Zoology Scholarship Endowment for Excellence, University of Texas at Austin, USA 2004</p> <p>Research Fellowship, Section of Integrative Biology, University of Texas at Austin, USA 2003</p> <p>Travel Grant, India Foundation 2002</p> <p>Chicago Zoological Society Conservation and Research Fund 2000</p> <p>Oriental Bird Club & International Bird Conservation Network Program Grant 2000</p> <p>Centre for Ecological Research and Conservation Research Grant, India 2000</p> <p>McCann Grant, Bombay Natural History Society, India 1998</p> <p>MSc fellowship, Ministry of Environment and Forests, Government of India 1997–99</p>
ACADEMIC SERVICES	<p>Departmental Ecoinformatics Theme Leader, Grand Challenges in Ecosystems and the Environment, Department of Life Sciences, Imperial College, 2014–</p> <p>Educational Director, <i>Masters in Computational Methods in Ecology and Evolution</i>, Department of Life Sciences, Imperial College, 2014– Co-director, <i>MSc in Quantitative Biology</i>, Department of Life Sciences, Imperial College London, 2013–2014</p> <p>Editorial Volume Editor, <i>Advances in Ecological Research: From Traits to Ecosystem Function</i>, 2015 Review editor, <i>Frontiers in Ecology and Evolution</i>, 2014– Member of advisory board, <i>Current Conservation</i>, 2012– Member of editorial board, <i>Current Conservation</i>, 2009–2012</p> <p>Reviewing Several scientific journals including Adv Ecol Res, Am Nat, Cons Bio, Curr Zool, Ecography, Ecology, Ecol Lett, J Biosci, J Royal Soc Interface, J Trop Ecol, Math Biosci, Nature, Theor Pop Biol, Ecol Model, Proc Royal Soc B, PLOS Biology, & Science</p> <p>Grant reviewing National Geographic Society, US Environmental Protection Agency (STAR fellowships), US Department of Defence</p> <p>Memberships British Ecological Society, Ecological Society of America, American Society of Naturalists</p>
SYNERGISTIC ACTIVITIES	<p>Workshops, conferences & seminars <i>Combining Information Theory and Game Theory</i>, Santa Fe, New Mexico, Aug 2012 (Invited participant) <i>Trait Evolution and the Dynamics of Food Webs</i>, Annual Meeting of the Ecological Society of America, Austin, Texas, Aug 2011 (Invited moderator) <i>Evolutionary Processes in Ecological Networks</i>, Annual Meeting of the Ecological Society of America, Austin, Texas, Aug 2011 (Invited moderator)</p>

Adaptation to climate from a spatial perspective, University of Helsinki, Finland, Sep 2011 (Invited speaker)
Early Career Scientist Symposium on networks in Ecology and Evolution, University of Michigan, Ann Arbor, Mar 2008 (One of eight invited speakers)

Working groups

How do social and ecological networks cope with environmental change? Grand Challenges in Ecosystems and the Environment, Imperial College London, Silwood Park, July 2014 – *Malaria and Climate Change*, National Center for Ecological Analysis and Synthesis & University of California, Santa Barbara, Feb 2011–2013

Online Databases & Information portals

The Global Biotraits Database: biotraits.ucla.edu

Tracking Ecological Interactions: sites.google.com/site/videoecologicalinteractions

GRADUATE AND UNDERGRADUATE ADVISEES

BSc: R Sheppard, (2014) O McGuinty (2015), J Chan (2015)
MSc/MRes: M Rizzuto (2013–2014), A Kazhdan (2013–2014), D Kontopoulos (2013–2014), D McMorrough (2015), S. Rana (2014–15), T Smallwood (2015), D Harris (2015), R Hohan (2014–15)
PhD: Thomas Smith (2015–), D Kontopoulos (2015–)
Postdoc: Dr. S. Sal (2015–), Dr. B Garcia-Carreras (2015–)

INTERNAL PHD COMMITTEES

R Hintzen, Imperial College London (2015–); A. Matthews, Imperial College London (2014–); P. Smith, Imperial College London (2014–); M. Boyle, Imperial College London (2014–); L Gough (2015–)

EXTERNAL PHD EXAMINER

K Healy, Trinity College Dublin (2015)

MENTORSHIP

Currently mentoring five 1st, five 2nd, six 3rd year BSc students at Imperial College London

INVITED TALKS (SELECTED)

Metabolic constraints on ecosystem dynamics and function, Department of Zoology, University of Oxford, Mar 2016
Metabolic constraints on emergent phenomena in complex ecological networks, Centre for Complexity Science, University of Warwick, Feb 2016
From Individual energetics to the dynamics of complex communities, Biosciences Departmental Seminar, University of Exeter (Penryn Campus), Mar 2015
How do thermal fluctuations propagate from cells to populations?, Biomathematics Seminar, Imperial College London, Dec 2014
How do thermal fluctuations propagate from cells to populations?, Department of Mathematics, University of York, Dec 2014
A mechanistic framework for scaling up systems biology from individuals to ecosystems, National Centre for Biological Sciences, Bangalore, India Nov 2014
From individual energetics to community dynamics, Indian Institute of Science, Education and Research, Pune, India, Nov 2014
Individuals, interactions, and aquatic ecosystem dynamics, British Ecological Society Aquatic Group Annual Meeting, July 2014
A mechanistic framework for scaling up systems biology from individuals to communities, Okinawa Institute of Science and Technology, Okinawa, Japan, April 2014
A mechanistic framework for scaling up systems biology from individuals to communities, Division of Ecology and Evolution, Imperial College London, Silwood Park, Feb 2013
A mechanistic framework for scaling up systems biology from individuals to communities, Department of Integrative Biology, University of South Florida, Feb 2013
Scaling up systems biology from individuals to communities, School of Biological Sciences, Monash University, Melbourne, Feb 2013
Scaling up systems biology from individuals to communities, Department of Biology, University of Rochester, Rochester, New York, Jan 2013
Integrating consumer-resource interactions into the Metabolic Theory of Ecology, Gordon Research Conference (GRC) on the Metabolic Basis of Ecology, University of New England, Biddeford, Maine, Jul 2012
A Mechanistic framework for Understanding Multi-Trophic Effects of Nutrient Enrichment, GRS section of GRC on the Metabolic Basis of Ecology, University of New England in Biddeford, Maine, Jul 2012

On optimal foraging and community dynamics, Bambi Talk, Barro Colorado Island, Smithsonian Tropical Research Institute, Panama, Apr 2012

Scaling up the effects of body size and environmental temperature from individuals to communities, Smithsonian Tropical Research Institute, Panama City, Panama, Nov 2011

Scaling up the effects of physiological constraints from individuals to communities, Frontiers in Systems and Integrative Biology Seminar, Department of Biomathematics, University of California, Los Angeles, Oct 2011

Predicting how body size, habitat structure, and environmental temperature shape community structure and dynamics, Department of Biology, University of New Mexico, Albuquerque, Jun 2011

Understanding the effects of climatic warming on biological interactions, University of California at Santa Barbara, Feb 2011

The effects of body size and temperature on trophic interactions and community dynamics, Department of Biology, California State University, Fresno, California, Nov 2010

The effects of body size and temperature on consumer-resource interactions and population dynamics, National Center for Ecological Analysis and Synthesis, Santa Barbara, California, Oct 2010

From individuals to population interaction networks: disentangling Darwin's entangled bank EEB seminar, Rice University, Houston, Mar 2008

Life history, energetics, and the molding of population interaction networks, Early Career Scientist Symposium on networks in Ecology and Evolution, University of Michigan, Ann Arbor, Mar 2008

Ecological Niche modeling of Amphibian and Reptile distributions in South Asia: Conservation and Biogeographical Applications, Slowinski Memorial Symposium, 2006 Joint Meeting of Ichthyologists and Herpetologists, Jun 2006

CONTRIBUTED TALKS (SELECTED) *A mechanistic model for consumption rate explains body size-structure in local communities*, 11th INTECOL Congress, London, Aug 2014

Predicting the effects of temperature changes on population fitness and species interactions, University of Helsinki, Finland, Sep 2011

Consumption rates and trophic interaction strengths are constrained by dimensionality of consumer search space, 96th Annual Meeting of the Ecological Society of America, Austin, Texas, Aug 2011

Understanding variation in the response of biological traits to temperature, GRC on Metabolic Basis of Ecology and Evolution, University of New England, Biddeford, ME, Jul 2010

Community Assembly, Stability and Food Web Structure, Section of Integrative Biology, University of Texas at Austin, May 2009

From individuals to population interaction networks: Life history, energetics, and the dynamical molding of food web structure, Population Biology Seminar, University of Texas at Austin, Mar 2008

The effects of environmental stochasticity on population interaction webs, Joint Meeting of the Ecological Society of America and Society for Ecological Restoration, San Jose, California, Aug 2007

Webs in an ever-changing world: environmental fluctuations and population interaction networks, Ecological Integration Student Research Symposium, Texas A&M University, Apr 2007

Webs in an ever-changing world: environmental fluctuations and population interaction networks, Population Biology Seminar, University of Texas at Austin, Apr 2007

Webs in an uncertain world: Assembly and persistence of population interaction networks in fluctuating environments Annual meeting of the Society for Integrative and Comparative Biology, Phoenix, Arizona, Jan 2007

Evolutionary Dynamics of Population Interaction Networks, Santa Fe Institute Complex Systems Summer School, Institute for Theoretical Physics, Chinese Academy of Science, Beijing, Aug 2005

Conservation assessment and prioritization of areas in the Indo-Burma biodiversity hotspot, EEB and Plant Biology Graduate Student Symposium, University of Texas at Austin, Oct 2005

Evolutionary-Population Ecology in fluctuating environments, EEB and Plant Biology Graduate Student Symposium, University of Texas at Austin, Oct 2004

Community assembly following primary habitat alteration, Centre for Ecological Sciences, Indian Institute of Science, Bangalore, Sep 2000

Languages: Fluent in English, Hindi, Marathi, Spanish; Working Knowledge of Punjabi, Sanskrit
Computer: Linux/UNIX, Mac OS, Windows, L^AT_EX, Matlab, GNU Octave, Mathematica, Python, R

Samraat Pawar
Updated: October 13, 2015