

National Center for Biological Sciences (NCBS)
Tata Institute of Fundamental Research (TIFR)
GKVK, Bellary Road, Bangalore, India 560065

Phone: +91 80 23666524
Email: dagashe@ncbs.res.in
Web: www.adaptationlab.wordpress.com

Professional Appointments

2013 – present: INSPIRE Faculty Fellow, National Center for Biological Sciences, Bangalore, India
2012 – present: Young Investigator, National Center for Biological Sciences, Bangalore, India
2009 – 2011: Postdoctoral Research Fellow, Department of Organismic and Evolutionary Biology
Harvard University, USA

Education

2004 – 2009: PhD in Ecology, Evolution and Behavior, University of Texas at Austin, USA
2000 – 2003: Bachelor of Science in Microbiology, University of Pune, India

Publications (*Equal contribution)

1. Diwan GD and **Agashe D** (In press). The frequency of internal Shine-Dalgarno – like motifs in prokaryotes. *Genome Biology and Evolution*
2. Nayak DD, **Agashe D**, Lee M-C, and Marx CJ (In press). Selection maintains apparently degenerate metabolic pathways due to tradeoffs in using methylamine for carbon versus nitrogen. *Current Biology*
3. **Agashe D**, Sane M*, Phalnikar K*, Diwan GD*, Habibullah A, Martinez-Gomez NC, Sahasrabudhe V, Polachek W, Wang J, Chubiz L and Marx CJ (2016). Large-effect beneficial synonymous mutations mediate rapid and parallel adaptation in a bacterium. *Molecular Biology and Evolution* Published online in March 2016, doi: 10.1093/molbev/msw035
4. Nair A and **Agashe D** (2016). Host-specific, spatial and temporal variation in culturable gut bacterial communities of dragonflies. *Current Science* 110(8): 1513-1523
5. Khan I, Prakash A and **Agashe D** (2016). Immunosenescence and the ability to survive bacterial infection in the red flour beetle *Tribolium castaneum*. *Journal of Animal Ecology* 85: 291-301
6. Kunte K and **Agashe D** [guest editors] (2015). Special section on Evolutionary Biology, in *Current Science* 108:1835-1873
7. Carroll SM, Chubiz LM, **Agashe D**, Marx CJ (2015). Parallel and divergent evolutionary solutions for the optimization of an engineered central metabolism in *Methylobacterium extorquens* AM1. *Microorganisms* 3:152-174
8. Parent CE*, **Agashe D*** and Bolnick DI (2014). Intraspecific competition reduces niche width in experimental populations. *Ecology and Evolution* 4(20): 3878-3990
9. **Agashe D** and Shankar N (2014). The evolution of bacterial DNA base composition. *Journal of Experimental Zoology B* 322(7): 517-528 [Invited review]

10. **Agashe D**, Martinez-Gomez NC, Drummond DA and Marx CJ (2013). Good codons, bad transcript: large reductions in gene expression and fitness arising from synonymous mutations in a key enzyme. *Molecular Biology and Evolution* 30(3): 549-560 [Recommended by Faculty of 1000]
11. Falk JJ, Parent CE, **Agashe D** and Bolnick DI (2012). Drift and selection entwined: Asymmetric reproductive isolation in an experimental niche shift. *Evolutionary Ecology Research* 14: 403-423 [Invited contribution]
12. **Agashe D** and Bolnick DI (2012). Dietary niche and population dynamic feedbacks in a novel habitat. *Oikos* 121(3): 347-356
13. **Agashe D**, Falk JJ and Bolnick DI (2011). Effects of founding genetic variation on adaptation to a novel resource. *Evolution* 65(9): 2481-2491
14. **Agashe D** and Bolnick DI (2010). Intraspecific genetic variation and competition interact to facilitate niche expansion. *Proceedings of the Royal Society of London, series B* 277(1696): 2915-2924
15. Tiple A, **Agashe D**, Khurad AM and Kunte K (2009). Population dynamics and seasonal polyphenism of *Chilades pandava* (Lepidoptera: Lycaenidae) in central India. *Current Science* 97(12): 1774-1779
16. **Agashe D** (2009). The stabilizing effect of intraspecific genetic variation on population dynamics in novel and ancestral habitats. *American Naturalist* 174(2): 255-267. [Awarded the American Society of Naturalists' Student Paper Award] [Recommended by Faculty of 1000]

Honors and Awards

- 2014: International Travel Grant, Department of Science and Technology, India
- 2013: INSPIRE Faculty Award, Department of Science and Technology, India
- 2012: International Travel Award, Society for the Study of Evolution
- 2011: Young Investigator Travel Award, Society for Molecular Biology & Evolution
- 2011: Early Career Researcher Conference Scholarship, DIMACS, Rutgers University
- 2010: American Society of Naturalists Editor's Award for Best Student Paper
- 2008: Graduate Dean's Prestigious Fellowship Supplement, University of Texas at Austin
- 2008: Hartman Merit Fellowship, Section of Integrative Biology, University of Texas at Austin
- 2008: Zoology Excellence Fund Travel Fellowship, University of Texas at Austin
- 2006: Texas Exes Award for Outstanding Teaching Assistant, University of Texas at Austin
- 2006: Outstanding Presentation Award, Graduate Student Symposium, Texas A&M University
- 2004: Queda International Foundation fellowship for Study Abroad (declined)
- 2003: Undergraduate Research Fellowship, Indian Academy of Science, India
- 2002: Undergraduate Research Fellowship, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India.
- 2001: Exploratory Scholarship, Bharatiya Vidya Bhavan, University of Pune, India

Research Grants

- 2015: Co-PI, North East Twinning collaborative grant on Chemical Ecology, Department of Biotechnology, India (~INR 1,00,00,000)
- 2014: Research grant, International Center for Genetic Engineering and Biotechnology (EUR 45,000)
- 2014: Research grant, Council for Scientific and Industrial Research, India (INR 22,12,000)

2013: INSPIRE Faculty Award, Department of Science and Technology, India	(INR 35,00,000)
2009: National Institutes of Health (NIH) administrative supplement	(USD 166,722)
Co-written with the PI, Christopher Marx (R01GM078209-03S1)	
2008: National Science Foundation (NSF) Doctoral Dissertation Improvement Grant	(USD 12,000)
2008: Grants-in-aid of research, Society for Integrative and Comparative Biology	(USD 910)
2008: American Society of Naturalists' Student Travel Award	(USD 300)
2008: Intellectual Entrepreneurship Pre-Grad Internship Mentor Travel Grant	(USD 100)
2007: Intellectual Entrepreneurship Pre-Grad Internship Mentor Travel Grant	(USD 100)
2007: Hartman Graduate Research Fellowship, UT Austin	(USD 1,400)
2007: Frank and Fern Blair Travel Fellowship, UT Austin	(USD 190)
2006: Dorothea Bennett Memorial Graduate Fellowship (spring semester), UT Austin	(USD 2,500)
2006: Dorothea Bennett Memorial Graduate Fellowship (fall semester), UT Austin	(USD 1,400)
2005: Dorothea Bennett Memorial Graduate Fellowship, UT Austin	(USD 1,500)
2005: Frank and Fern Blair Fellowship, UT Austin	(USD 1,100)

Invited Talks

- 2016: National Seminar on Frontiers in Biotechnology, Bharathiyar University, Coimbatore, India
- 2016: Undergraduate Lab research talk, Indian Institute of Science (IISc), Bangalore, India
- 2015: Jawaharlal Nehru University (JNU), New Delhi, India
- 2015: J Craig Venter Institute, La Jolla, USA
- 2015: Department of Ecology and Evolutionary Biology, University of Minneapolis, USA
- 2015: Department of Microbiology, Michigan State University, USA
- 2015: Department of Organismic and Evolutionary Biology, Harvard University, USA
- 2015: International Center for Theoretical Sciences (ICTS), Bangalore, India
- 2014: Max Plank Institute of Chemical Ecology, Jena, Germany
- 2014: SMBE Satellite Meeting/NIG International Symposium: Causes of Genome Evolution, Japan
- 2012: Faculty of Biology, University of Bielefeld, Germany
- 2012: School of Natural Sciences, Linnaeus University, Kalmar, Sweden
- 2012: Evolutionary Biology Center, Uppsala University, Uppsala, Sweden
- 2012: Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR), Bangalore, India
- 2012: Department of Biology, National University of Singapore
- 2011: Annual meeting of the Society for Molecular Biology & Evolution, Kyoto, Japan
- 2011: Microbial Sciences Initiative Chalk-talk series, Harvard University
- 2011: National Center for Biological Sciences (NCBS), Bangalore, India
- 2010: Okinawa Institute of Science and Technology (OIST), Okinawa, Japan
- 2010: Museum of Comparative Zoology Postdoctoral Seminar Series, Harvard University
- 2009: Center for Ecological Sciences, IISc, Bangalore, India
- 2009: National Center for Biological Sciences, Bangalore, India
- 2009: Indian Institute of Science Education and Research (IISER), Pune, India

Teaching and Mentoring Experience

Academic Supervision: Advisor for four postdoctoral fellows, six PhD students, five Master's thesis project students and one Bachelor's thesis project student (2012 – present)

Courses taught: Graduate course modules on Evolution and Ecology (2014, 2015)
MSc Wildlife Biology course on Evolution & Diversity (2014)
Graduate course on Evolution (2013)

Guest Lecturer: ICTS School on Quantitative Systems Biology, ICTS (2015)
MSc Wildlife Biology Course, NCBS (2012)
Microbial Evolution, Harvard University (2009)
The Evolution of Microbes, Harvard University Extension School (2009)

Teaching Assistant: University of Texas at Austin (2004 – 2008; total 8 semesters): Biostatistics, Introductory Biology, Advanced Honors Genetics, Immunology Lab, Genetics

Research Supervision: One graduate and undergraduate student each, Harvard University (2011)
Twelve undergraduate researchers, University of Texas at Austin (2006 – 2008)

Mentoring: Undergraduate program at SMBE (2011) and SSE meetings (2009)
MentorNet (2009 to 2013- six undergraduate and graduate students in biology)
McNair Scholar's Program, St Edward's University, Austin (2007, 2008)
Intellectual Entrepreneurship Program, University of Texas, Austin (2007, 2008)

Academic Service

Journal editor: Associate Editor, *Molecular Biology and Evolution* (Oct 2015 – present)
Guest Editor, *Current Science* special section on Evolutionary Biology (2015)

Manuscript review: American Naturalist (4), Behavioral Ecology, Oecologia, Oikos, Proceedings of the Royal Society of London series B, Ecology Letters (3), Molecular Ecology, Journal of Molecular Evolution, BMC Ecology, Current Science (3), Journal of Genetics, Journal of Theoretical Biology, Nucleic Acids Research, Journal of Animal Ecology, Resonance, Biological Reviews, Evolution (2), Molecular Biology & Evolution, Biology Letters, PLoS One, Ecology, BMC Genomics

Grant proposal review: Department of Biotechnology (DBT), India (2013, 2014, 2015)
Department of Science and Technology (DST), India (2014)

Book proposal review: University of Chicago Press

Thesis examiner: MSc thesis, JNCASR, India (2013)
Expert opponent for PhD thesis, Linnaeus University, Kalmar, Sweden (2012)

Symposia organized: First Indian Conference on Behaviour, Ecology and Evolution (IBEE) (2016)
2nd International Center for Theoretical Sciences (ICTS) School on Population genetics and Evolution, ICTS (2016)
NCBS Annual Talks, Coming of Age: Transitions in Biological Systems (2016)
1st ICTS School and Discussion meeting on Population genetics and Evolution, ICTS (2014)
SERB School on Chemical Ecology, NCBS (2014)
Evolution symposium: Celebrating Wallace, NCBS (2013)
Conference on Bacterial Expressions, NCBS (2013)
Bangalore Evolution Group meetings (2012 - 2013)