

Nikunj Goel

Curriculum Vitae

Dept. of Ecology and Evolutionary Biology
Yale university, New Haven, 06511, USA
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Research Interest

I am broadly interested in understanding distribution patterns of organisms across space and time, and the ecological and evolutionary processes that generate those patterns. For my Ph.D., I am working towards understanding how dispersal affects distribution patterns and resilience of savanna and forest at continental scales, using a combination of theoretical and empirical approaches.

Education

- 2015-present **Ph.D. in Ecology and Evolutionary Biology**, Yale University, New Haven, CT, 06511, USA.
- 2015-2018 **MS in Ecology and Evolutionary Biology**, Yale University, New Haven, CT, 06511, USA.
- 2011-2015 **BSc in Physics (major) and Environmental Sciences (minor)**, Indian Institute of Science, Bangalore, 560012, India.

Publications

- In prep. **Goel, N.**, Vleck, E. V & Staver, A. C. Paleo evidence and spatial model do not support the island-wide forest claim in Madagascar.
- In prep. **Goel, N.**, Guttal, V., Levin, S. A, & Staver, A. C. The role of dispersal in the maintenance of tropical savanna and its alternative biome state forest.
- 2016 Guttal, V.*, Raghavendra, S.*, **Goel, N.***, & Hoarau, Q. Lack of critical slowing down suggests that financial meltdowns are not critical transitions, yet rising variability could signal systemic risk. PloS one, 11(1), e0144198.

* All these authors contributed equally to the work. This article was covered by *Nature India* and *Deccan Herald*.

Awards and honors

- 2017-2018 Bunker Fellowship
Department of Ecology and Evolutionary Biology, Yale University
- 2016 Ton Damman Award
Vegetation section, Ecological Society of America
- 2016 Volterra Award
Theory Section, Ecological Society of America
- 2016 & 2017 Poster presentation award
Annual Graduate Student Symposium at EEB, Yale University
- 2013 Awarded 1st prize in *Mathematics of Planet Earth* (MPE) competition, aimed at promoting mathematical research on various natural processes.
TIFR Centre For Applicable Mathematics, Bangalore
- 2011-2015 Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship
National Science Fellowship, Department of Science and Technology, Government of India

Teaching

- Spring 2018 Teaching fellow for Plant Ecology (EEB 305), EEB, Yale University
Spring 2017 Teaching fellow for Introduction to Statistics: Life Sciences (EEB 210), EEB, Yale University
Spring 2016 Teaching fellow for Ecology and Evolutionary Biology (BIOL 104), EEB, Yale University

Presentations

- Nov 2017 **Goel, N.**, Guttal, V., Levin, S. A, & Staver, A. C. The role of space in maintaining tropical savanna and its alternative biome state, forest. Paper presented at the Annual Regional Mathematics and Statistics Conference at University of North Carolina. Greensboro, NC.
- May 2017 **Goel, N.**, Vleck, E. V & Staver, A. C. The role of topographical barriers in maintaining savannas of Central Madagascar. Poster presented at the Yale EEB Department Annual Graduate Student Symposium. New Haven, CT. **First Place**
- Aug 2016 **Goel, N.**, Guttal, V., Levin, S. A, & Staver, A. C. Spatial interactions increase the resilience of tropical biomes to global change. Paper presented at CES In-House Symposium. Bangalore, Karnataka.
- Sep 2016 **Goel, N.**, Guttal, V.*, Raghavendra, S.*, & Hoarau, Q. Early warning signals of financial meltdowns. Paper presented at International Conference on Advances in Interdisciplinary Statistics and Combinatorics at University of North Carolina. Greensboro, NC.
- Aug 2016 **Goel, N.**, Guttal, V., Levin, S. A, & Staver, A. C. Spatiotemporal dynamics of savanna and forest distribution. Paper presented at the Ecological Society of America Annual Meeting. Fort Lauderdale, FL. **Volterra and Ton Damman Award**
- May 2016 **Goel, N.**, Guttal, V., Levin, S. A, & Staver, A. C. Spatiotemporal dynamics of savanna and forest distribution. Poster presented at the Yale EEB Department Annual Graduate Student Symposium. New Haven, CT. **Second Place**

Grants and Funding

- 2018 YIBS Doctoral Dissertation Improvement Grant (\$5000)
Yale Institute for Biospheric Studies, Yale University
- 2017 RMSC Travel fund (\$300)
Department of Mathematics and Statistics, University of North Carolina at Greensboro
- 2016 AISC Travel fund (\$300)
Department of Mathematics and Statistics, University of North Carolina at Greensboro
- 2016 Department Chair's Fund (\$1000)
Department of Ecology and Evolutionary Biology, Yale University

Technical skills

- Mathematics Ordinary/Partial Differential Equations | Linear Algebra | Stochastic Calculus | Calculus | Fourier Analysis | Numerical Methods
- Programming R | Shiny | Matlab | C | C++ | Python

Science Outreach

- 2017 Participant in Flipped Science Fair (FSF)
FSF is a science outreach activity to inspire the next generation of scientists while training the scientists of today to effectively communicate their research to any audience.

2012 & 2013 Organized an experimental physics event on Open Day
Open Day is the occasion where the Indian Institute of Science opens its doors to general public to visit, learn, ask and understand the research-culture at IISc.

References

Dr. A. Carla Staver, Department of Ecology and Evolutionary Biology, Yale University, New Haven, Connecticut, 06511, USA. Email: carla.staver@yale.edu

Dr. Vishwesh Guttal, Centre for Ecological Sciences, Indian Institute of Science, Bangalore, Karnataka, 560012, India. Email: guttal@ces.iisc.ernet.in

Dr. Stephen C. Stearns, Department of Ecology and Evolutionary Biology, Yale University, New Haven, Connecticut, 06511, USA. Email: stephen.stearns@yale.edu