

Ravi Ranjan

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Appointments

- May 2021- **Postdoctoral fellow**, *HIFMB Integrative Postdoc Pool Fellow, Helmholtz Institute for Functional Marine Biodiversity (HIFMB), Oldenburg, Germany.*
Postdoctoral advisors: Bernd Blasius, Helmut Hillebrand and Mridul Thomas

Education

- 2021 **PhD**, *Department of Plant Biology and Program in Ecology, Evolutionary Biology and Behavior, Michigan State University.*
Graduate Committee: Christopher Klausmeier, Elena Litchman, Spencer Hall and Orlando Sarnelle
- 2009-2014 **M.Sc. Biological Sciences and B.E. Manufacturing Engineering**, *Birla Institute of Technology and Science (BITS), Pilani, India.*

Publications

- 2022 Ranjan R, Klausmeier C. How the resource supply distribution structures competitive communities. *Journal of Theoretical Biology* 538 (2022) 111054.
- 2016 Ranjan R, Bagchi S. Functional response and body size in consumer-resource interactions: uni-modality favors facilitation. *Theoretical Population Biology* (110) 2016:25-35.
- in review* Wierenga J, Ranjan R, Thomas M, Ibelings B. Complex effects of chytrids on *Planktothrix* growth across interacting temperature and light gradients. In review at *The ISME Journal*.
- in prep* Ranjan R, Koffel T, Klausmeier C. Multi-species coexistence along nutrient gradients. In prep for *The American Naturalist*
- in prep* Ranjan R, Koffel T, Klausmeier C. The three species problem: understanding coexistence of triplets. In prep for *Ecology Letters*
- in prep* Ranjan R, Bagchi S. On snow leopards, their prey and livestock: conservation interventions can favor coexistence

Fellowships/Awards

- 2020 **HIFMB Integrative Postdoc Pool Fellowship**, Helmholtz Institute for Functional Marine Biodiversity (HIFMB), Oldenburg, Germany (~ \$200,000) .
- 2020 **MSUSciComm Blog Writing Contest**, Michigan State University (MSU) .
- 2020 **College of Natural Sciences Dissertation Completion Fellowship**, Michigan State University (MSU) (\$8000).
- 2018-19 **Summer Fellowship**, Kellogg Biological Station, Michigan State University (\$7000).
- 2015- **Ecology, Evolutionary Biology and Behavior Travel Award**, MSU (~ \$2,000).
- 2015- **Paul Taylor Award**, Department of Plant Biology, Michigan State University (~ \$5,000).
- 2015-2020 **BEACON Center Top-up Fellowship**, Michigan State University (\$20,000).
- 2015-2016 **College of Natural Sciences Recruiting Fellowship**, MSU (\$54,500).

2014 **National Network for Mathematical and Computational Biology Internship, Science and Engineering Research Board**, Government of India (₹45,000).

Teaching Experience

- Summer 2019 **Enhancing Linkages between Mathematics and Ecology** - Teaching Fellow
Graduate course at Kellogg Biological Station, Michigan State University
Week 1: **Theoretical Population and Community Ecology**
Instructor: Thomas Koffel, Kellogg Biological Station, Michigan State University
Week 2: **Introduction to Meta-Analysis in Ecology**
Instructor: Craig Osenberg, University of Georgia
- Summer 2018 **Enhancing Linkages between Mathematics and Ecology**- Teaching Fellow
Graduate course at Kellogg Biological Station, Michigan State University
Week 1: **Introduction to Theoretical Ecology: Populations and Species Interactions**
Instructor: Chad Brasil, School of Biological Sciences, University of Nebraska-Lincoln
Week 2: **Bayesian Models in Ecology**
Instructor: Inez Ibanez, School for Environment and Sustainability, University of Michigan
Week 3: **Structured demographic models for population, community, and evolutionary ecology**
Instructor: Thomas (TEX) Miller, Biosciences, Rice University
- Spring 2014 **Theoretical and Mathematical Ecology** - Teaching Assistant
Graduate course at Centre for Ecological Sciences, Indian Institute of Science, Bengaluru
Instructor: Vishwesha Guttal

Invited Lectures

- October 2020 **Ranjan R.** Models in ecology and evolution: an introduction. Birla Institute of Technology and Science, Pilani, India

Select Presentations

- December 2021 **Ranjan R.**, Ryabov A, Hillebrand H, Blasius, B. Temperature-resource interactions: causes and consequences. Seminar, Helmholtz Institute of Functional Marine Biodiversity (HIFMB), Oldenburg, Germany.
- January 2020 **Ranjan R.**, Koffel T, Klausmeier CA. Coexistence in complex communities: some insights from a three species competition model. Stand Alone Meeting of the American Society of Naturalists, Asilomar, CA, USA
- Feb 2019 **Ranjan R.**, Koffel T, Klausmeier CA. How do communities coexist: lessons from some simple models. Program in Ecology, Evolutionary Biology and Behavior (EEBB) Student Colloquium, Michigan State University, East Lansing.
- Feb 2019 **Ranjan R.**, Koffel T, Klausmeier CA. Keystone predation meets resource ratio theory: community assembly and coexistence in a freshwater food web module. Brown Bag Symposium, W.K. Kellogg Biological Station, Michigan State University
- August 2018 **Ranjan R.**, Koffel T, Klausmeier CA. Species turnover along resource gradients in phytoplankton communities, Ecological Society of America Meeting, New Orleans, LA, USA.
- August 2017 **Ranjan R.**, Klausmeier CA. How do resource spectrum and use determine the structure of competitive communities? Ecological Society of America Meeting, Portland, OR, USA.

- May 2017 **Ranjan R**, Klausmeier CA. How do resource spectrum and use determine the structure of competitive communities? Program in Ecology, Evolutionary Biology, and Behavior (EEBB) Research Symposium, Michigan State University, East Lansing
- April 2017 **Ranjan R**, Klausmeier CA. How do resource spectrum and use determine the structure of competitive communities? Brown Bag Symposium, W.K. Kellogg Biological Station, Michigan State University
- March 2017 **Ranjan R**, Klausmeier CA. How do resource spectrum and use determine the structure of competitive communities? Midwest Ecology and Evolution Conference (MEEC), University of Illinois, Urbana-Champaign, IL, USA.

Popular science writing

- 2020 Ranjan R. Math in the age of COVID-19: the what and the why of mathematical modeling. MSU SciComm Voices Blog.

Professional Development

- Nov 2019 Implicit Bias Training, Kellogg Biological Station, Michigan State University
- January 2019 Cultural Competency Seminar, Kellogg Biological Station, Michigan State University
- Nov 2018 Workshop on increasing diversity in STEM graduate programs, Kellogg Biological Station, Michigan State University
- 2015-16 Responsible Conduct of Research Workshops, Michigan State University

Service

- 2022-2025 Member, Diversity Committee, American Society of Naturalists.
- 2022 Seminar coordinator, Helmholtz Institute of Functional Marine Biodiversity (HIFMB), Oldenburg, Germany.
- 2017-2019 Social media co-chair, Ecology, Evolutionary Biology and Behavior Program (EEBB), Michigan State University, East Lansing, USA.
- 2018 Member, Organizing Committee, Midwest Ecology and Evolution Conference (MEEC) 2018, W.K. Kellogg Biological Station, Michigan State University, Hickory Corners, Michigan, USA.
- 2018 Co-chair, EEBB Research Symposium Organizing Committee, Michigan State University, East Lansing, USA.
- 2016-2018 Graduate student representative, Seminar Committee, Department of Plant Biology, Michigan State University, East Lansing, USA.

Peer Review

- Journals Oikos, Ecology Letters, Journal of Animal Ecology, Global Ecology and Biogeography, Functional Ecology
- Grants Rules of Life, National Science Foundation, USA

Society membership

- American Society of Naturalists