Dina Navon

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SUMMARY

I seek to inspire young scholars by engaging them in both the classroom and the laboratory. My multidisciplinary research & teaching program seeks to reveal the genetic and environmental factors that contribute to evolution by:

- Probing the genetic basis of the plastic remodeling of bony structures in response to diet found in many fish
- Utilizing a variety of complementary model systems, including traditional (zebrafish, threespine stickleback) and emerging (African cichlid) teleost fish models
- Centering the education and training of undergraduate research mentees by fostering their ability to perform collaborative and/or independent research
- Promoting an accessible, inclusive, and equitable lab, classroom, and departmental environment

PROFESSIONAL APPOINTMENTS

University of the Fraser Valley — Fall 2022-present
Assistant Professor, Biology Department

Rutgers University — Fall 2020-Fall 2022
Postdoctoral Fellow, NIH IRACDA/INSPIRE Fellowship, Dr. Tetsuya Nakamura

University of California Riverside/University of Calgary — Spring 2019-Fall 2020
Postdoctoral Fellow, NSF EAGER Fellowship, Drs. Tim Higham & Sean Rogers

EDUCATION

University of Massachusetts Amherst — Fall 2013-Spring 2019
Doctor of Philosophy, Organismic and Evolutionary Biology
Dissertation Title: "Investigating the genetic basis of and plasticity in ecologically-relevant phenotypes in African cichlids."
GPA: 4.0 | Relevant Coursework: Ecology, Evolution, Analysis of Environmental Data, Science Communication, Public Engagement & Communication, Geometric Morphometrics (Audit)

Clark University, Worcester, MA — Fall 2009-Spring 2013
Bachelor of Science, Biology
GPA: 3.22 | Relevant Coursework: Genomics, Ecology, Molecular & Evolutionary Systematics, Advanced Biostatistics, Evolutionary Developmental Biology, Health in the Urban Environment, Conservation & Effective Practice, Evolution, Genetics, Microbiology, Quantitative Methods in Biology

PEER REVIEWED PUBLICATIONS

*Asterisk denotes undergraduate co-author in the same lab as Dr. Navon.

Gilbert, M.C., Tetrault, E., Packard, M., **Navon, D.**, & Albertson, R.C. 2021. Ciliary rootlet coiled-coil 2 (crocc2) is associated with evolutionary divergence and plasticity of cichlid jaw shape. *Molecular Biology and Evolution* 38 (8): 3078-3092.

Navon, D., *Hatini, P., *Zogbaum, L., & Albertson, R.C. 2021. The genetic basis of coordinated plasticity across functional units in a Lake Malawi cichlid mapping population. *Evolution* 75 (3): 672-687.

Higham, T.E., L. Ferry, J. Messier, D. Irschick, P. Anderson, P. Bergmann, E. Carrington, S. Farina, K. Feilich, P. Hernandez, H. Jamniczky, M. Johnson, S. Kawano, C. Law, S. Longo, C. Martin, P. Martone, L. Monteiro, **Navon, D.**, A. Rico-Guevara, S. Santana, L. Schmitz, S. Starko, and K. Niklas. 2021. Linking ecomechanical models and functional traits to investigate phenotypic diversity. *Trends in Ecology and Evolution* 36 (9): 860-873.

Navon, D., Male, I., *Aaronson, B., Karlstrom, R.O, & Albertson, R.C. 2020. Underlying flexible stems – Hedgehog signaling mediates craniofacial plasticity in teleosts. *PNAS* 117 (32): 19321-19327.

Navon, D., *Olearczyk, N., & Albertson, R.C. 2017. Genetic modularity and divergent Wnt signaling promote species divergence in Malawi cichlids. *Molecular Ecology* 26: 291-303.

Navon, D. 2017. Digest: Mediating the impact of integration in Malagasy cichlids. *Evolution* 71.9: 2273:2274.

Parsons, K.J., Concannon, M.R., **Navon, D.**, *Wang, J., *Ea, I., *Groveas, K., *Campbell, C., & Albertson, R.C. 2016. Foraging environment determines the genetic architecture and evolutionary potential of trophic morphology. *Molecular Ecology* 25: 6012-2023.

MANUSCRIPTS IN REVIEW/IN PREPARATION

* Asterisk denotes undergraduate co-author in the same lab as Dr. Navon.

*Wei, J., Wood, T.W.P., Flaherty, K., Lalonde, R., Enny, A., Adrescavage, A., Brazer, D., **Navon, D.**, Steward, T., *Shanabag, A., Braasch, I., Mosimann, C., & Nakamura, T. 2022. (In Prep). The developmental trajectories under Hh-Gli regulation illuminate the evolutionary origin of terrestrial shoulder girdles. *Nature Letters*.

Navon, D., Rogers, S.M, *Kozak, A., *Nikel, K., *Patey, J., & Higham, T.E. 2022. (In Prep). Changing salinity has minimal impact on prey capture performance and kinematics in threespine stickleback. *Journal of Experimental Biology*.

Navon, D., Rogers, S.M., & Higham, T.E. 2022. (In Prep). Try, Try Again – Ontogenesis of stereotypical feeding behavior in threespine stickleback. *Proceedings of the Royal Academy of Sciences B*.

Marlétaz, F., de la Calle-Mustienes, E., Acemal, R.D., Nakamura, T., Paliou, C., Naranjo, S., Martínez-García, P.M., Cases, I., Sleight, V.A., Hirschberger, C., Duckett, P.E., **Navon, D.**, Andrescavage, A., Skvortsova, K., Duckett, P.E., González-Rajal, Á., Bogdanovic, O., Gibcus, J.H., Yang, L., Gallardo-Fuentes, L., Sospedra, I., Lopez-Rios, J., Darbellay, F., Visel, A., Dekker, J., Shubin, N., Gillis, J.A., Gabaldón, T., Tena, J.J., Lupiáñez, D.G., Rokhsar, D.S., & Gómez-Skarmeta, J.L. 2022. (In Review). The little skate genome and the evolutionary emergence of wing-like fin appendages. *Nature*.

GRANTS & FELLOWSHIPS

Lorus & Margery J. Milne Scholarship, Marine Biological Laboratories ($7,500)	Summer 2022
Postdoctoral Research Fellowship in Biology, National Science Foundation (Meritorious)	Spring 2020
Graduate School Research Grant, University of Massachusetts Amherst ($1,000)	Spring 2018
Irwin Martin Research Award, Organismic & Evolutionary Biology at UMass Amherst ($2,500)	Spring 2018
Amherst College Teaching Assistantship, Amherst College ($3,200)	Spring 2018
Grant in aid of Research, Society for Integrative and Comparative Biology ($1,000)	Winter 2017
CNS Teaching Fellowship, University of Massachusetts Amherst ($3,200)	Fall 2016
Summer Biology Graduate Research Fellowship, University of Massachusetts Amherst ($6,900)	Summer 2016

HONORS & AWARDS

Early Career Scientist Award, University of Wisconsin-Madison	Spring 2022
Blavatnik Regional Award for Young Scientists Nomination, Rutgers University	Winter 2021
Science Journalism Internship, Society for Integrative and Comparative Biology	Winter 2017
National Science Foundation Travel Award, Animal Behavior Society, Albuquerque, NM	Summer 2012
Bickman Summer Science Research Internship, Clark University, Worcester, MA	Summer 2012

TEACHING EXPERIENCE

Instructor, Biology Department, University of the Fraser Valley — Fall 2022-present

- Teach two online-only asynchronous-only sections of Human Biology (Bio 105)
- Prepare and grade all labs, quizzes, and exams for this introductory biology course for non-majors
- Answer student questions and identify common misconceptions

Mentored Teaching, INSPIRE Fellowship Program, Rutgers University & New Jersey City University — Spring 2021-Fall 2022

- Work with teaching mentor, Dr. Ethan Prosen, to develop additional modules & assignments for two courses, Comparative Anatomy and Developmental Biology, as well as the Genetics section of Intro Bio
- Hold in-person guest lectures several times throughout each course on topics related to research interests
- Generate quizzes and exam questions for each course based on the novel assignments & modules

Laboratory Teaching Assistant, Comparative Vertebrate Anatomy — Fall 2018
University of Massachusetts Amherst

- Organized, planned, and executed all laboratory content, including short weekly lectures and quizzes
- Wrote, proctored, and graded laboratory examinations
- Performed and assisted with all dissections on all specimens (*Squalus*, *Necturus*, mustelid, etc.)

Laboratory Teaching Assistant, Adaptation & the Organism — Spring 2018
Amherst College

- Demonstrated new techniques & answered student questions
- Provided feedback & grading on all written lab reports
- Attended weekly TA meetings and serve as a role model for the undergraduate TAs

Instructor, Science Communication, Interdisciplinary Life Sciences Programs — Spring 2017 & 2018
University of Massachusetts Amherst

- Designed and implemented a one-credit graduate level seminar on science communication
- Recruited guest experts through the Office of Professional Development to speak on topics like "Narrative Structure" and "Communicating with Industry"

Instructor of Record, Bioethics, College of Natural Sciences — Fall 2016
University of Massachusetts Amherst

- Designed all components of a one-credit first year seminar on bioethics
- Participated in weekly TO meetings
- Executed a Teaching-As-Research CIRTL Practitioner project & presented findings to various audiences

Teaching Assistant, Junior Year Writing, College of Natural Sciences — Spring 2015 & 2016
University of Massachusetts Amherst

- Provided feedback on and graded all assignments, including resumes, cover letters, personal statements, annotated bibliographies, and research papers
- Answered questions related to the content and format of above assignments
- Assisted course instructors during key lectures

RESEARCH MENTORSHIP EXPERIENCE

Student Name	Years Mentored	Department/Institution	Major Accomplishments	Skills Taught	Current Position
Thomas Monsour	2022-present	Genetics/Rutgers University		Animal care, reading primary literature	Rutgers Biology undergraduate
Devanshi Mehta	2021-present	Genetics/Rutgers University	Successful honors thesis, defended April 2022; awarded Macmillan Award for Research Excellence & Henry Rutgers Award for honors thesis work	Reading primary literature, animal care, geometric morphometrics, linear modeling, RNA extractions using a Qiagen kit, high-throughput sequence analysis (RNA-seq and ATAC-seq) on both a model and non-model fish (zebrafish and African cichlid)	Rutgers Biology undergraduate
Paul Hatini	2016-2018	Biology/University of Massachusetts Amherst		Cichlid morphological data collection, including fin dissection & fin ray counts	Boston Children's Hospital research technician
Nathan Olearczyk	2015-2018	Biology/University of Massachusetts Amherst	Successful honors thesis, defended spring 2018	Molecular, population genetic, statistical & dissection techniques, including cichlid fin dissection, geometric morphometrics, live bone staining by fluorochrome injection, and quantitative trait loci (QTL) analysis.	
Maya Gelbard	2015-2016	Biology/University of Massachusetts Amherst	Successful honors thesis, defended spring 2016	Several molecular techniques including PCR amplification of target DNA, gel electrophoresis, and qPCR	PhD Student in Genetics at Tufts University

RECENT RESEARCH PRESENTATIONS

"Quantifying phenotypic plasticity in response to diet in zebrafish" — Spring 2022
Mid-Atlantic Regional Meeting of the Society of Developmental Biology, (Conference Talk), virtual

"Where Nature Met Nurture– Understanding Phenotypic Plasticity and Complex Traits in Fish" — Spring 2022
University of Wisconsin-Madison, (Research Seminar), virtual

"Flexible Stems and Ecological Opportunities - the Role of Phenotypic Plasticity in Fish Diversity" — Summer 2021
Joint Meeting of Ichthyologists and Herpetologists, (Invited Symposium Talk), virtual

"The Ontogeny of Feeding Behavior in Five Populations of Threespine Stickleback" — Fall 2020
NW Regional Meeting of the Society of Developmental Biology, (Conference Talk), virtual

"Behavioral Variation in Feeding Strikes by Prey Type in Four Populations of Threespine Stickleback" — Winter 2020
Society for Integrative and Comparative Biology, (Conference Talk), Austin, TX

"Investigating the Genetic Basis of Plasticity in African Cichlids" — Spring 2019
University of Calgary Biological Science, (Research Seminar) Calgary, CA

"Genetic architecture of coordinated plastic responses across different traits in African cichlids" — Winter 2019
Society for Integrative and Comparative Biology, (Conference Talk) Tampa, FL

"Behind flexible stems: Exploring the evolution and molecular basis of plasticity in teleosts" — Summer 2018
European Society for Evolutionary Developmental Biology, (Conference Talk) Galway, IE

"Genetic architecture of coordinated plastic responses across different traits in African cichlids" — Summer 2018
European Society for Evolutionary Developmental Biology, (Conference Poster) Galway, IE

"Evaluating the molecular basis for load-induced phenotypic plasticity in teleosts" — Winter 2018
Society for Integrative and Comparative Biology, (Conference Poster) San Francisco, CA

"Evaluating changes in zebrafish bone deposition rates across benthic and pelagic diets" — Winter 2017
Society for Integrative and Comparative Biology, (Conference Poster) New Orleans, LA

"Assessing the genetic and developmental basis of variation in the African cichlid radiation" — Winter 2016
Society for Integrative and Comparative Biology, (Conference Talk) Portland, OR

"Characterizing the genetic basis of variation in African cichlid fin morphology" — Winter 2015
Society for Integrative and Comparative Biology, (Conference Talk) West Palm Beach, FL

RECENT PANEL/GUEST SPEAKER APPEARANCES

Genetic Basis of Plasticity, Tricia Melloy's Developmental Biology students at FDU	Fall 2021
Plasticity in Fish, Tim Higham's Biology of Marine Fishes students at BMSC	Summer 2019
Panel on Graduate School, Bruce Byers' BioTap students at UMass	Spring 2016/2017
Science Communication Workshop, Craig Albertson's Junior Fellows group at UMass	Fall 2016/2017
Science, Media, and the 2016 Election, Tom Reid's Media & Politics class at SHS	Fall 2016
Advice on Science Blogging, Norman Johnson's Writing in Biology Class at UMass	Spring 2016
Panel on Graduate School, Craig Albertson's Junior Fellows group at UMass	Fall 2015

LEADERSHIP/PROFESSIONAL SERVICE EXPERIENCE

Peer Review Trainee, Early Career Researcher Peer Review Training Program — Spring 2022-present
Genetics Society of America

- Join peer review training program orientation to learn peer review best practices
- Review papers for Genetics and G3 with direct supervision from experienced reviewers

Postdoctoral Representative, Postdoctoral Advisory Council — Fall 2021-present
Rutgers University

- Meet twice annually to discuss and develop initiatives to improve the postdoc working experience
- Push for programs aimed at increasing the retention of diverse postdocs at Rutgers

Graduate Student Representative, Biology Department Workplace Climate Committee — Spring 2018-2019
University of Massachusetts Amherst

- Assessed current practices for creating an inclusive workplace climate for graduate students
- Designed new procedures & proposed interventions to advance a positive workplace climate for all department cohorts, including undergraduate students, tenure- and non-tenure track faculty, and staff
- Consulted the department head on workplace climate, including inclusivity, implicit bias, and cross-cultural awareness

OEB Graduate Student Representative, CNS Graduate Director of Diversity & Inclusion Search — Winter 2017
University of Massachusetts Amherst

- Drafted and distributed the search advertisement for a newly-created position aimed at promoting a diverse and inclusive workplace for graduate students & post-doctoral fellows within the college
- Planned and executed all candidate interviews and made hiring recommendations

Graduate Student Representative, University Writing Committee (UWC) — Fall 2014-Fall 2018
University of Massachusetts Amherst

- Attended monthly UWC meetings
- Reviewed Freshman and Junior Year Writing course syllabi across all university departments
- Reviewed Junior Year Writing program criteria

Communications Committee Chairwoman, Graduate Women in STEM — Spring 2014-2016
University of Massachusetts Amherst

- Attended monthly executive board meetings and led monthly communications committee meetings
- Organized book club meetings centered around principles of science communication (e.g. "Don't Be Such a Scientist", "Escape from the Ivory Tower")
- Planned and led a 90-minute Improv workshop directed at scientists
- Created and distributed event advertisements for other GWIS committees

SCIENCE COMMUNICATION EXPERIENCE

Communications Manager, INSPIRE Fellowship Program, Rutgers University — Fall 2020-present

- Serve as the sole content creator for the program's official outreach Twitter account @FellowsInspire
- Organize and curate the within-program Slack workspace to better generate an engaged community of fellows
- Lead several workshops on communications-related topics for the INSPIRE community

President, Science Café, Organismic and Evolutionary Biology — Spring 2016-2018

- Organized and led weekly organization-wide planning meetings
- Restructured and improved group's WordPress-based website
- Filmed and edited event videos using professional video cameras and FinalCutPro

Contributing Author, That's Life [Science] — Spring 2016-2018

- Drafted two blog posts each semester and at least one over the summer
- Edited other authors' posts for content, grammar, style, and formatting
- Maintained an active presence on the blog's Facebook page

Editor, GWIS Quarterly Magazine, Graduate Women in STEM — Spring 2015-2017

- Edited all magazine articles
- Wrote an article for each issue
- Organized annual special editions featuring content from audience
- Formatted magazine using Adobe InDesign

Contributing Author, Oceanbites — Fall 2015-2016

- Drafted summaries of technical, recent research papers intended for general adult audiences
- Edited other authors' posts for content, grammar, style, and formatting
- Brainstormed ideas for monthly theme weeks

Public Relations Manager, Science Café, Organismic and Evolutionary Biology — Winter 2014-2018

- Attended weekly planning meetings which involved brainstorming for speakers, titles, blurbs, and funding sources
- Organized and executed monthly outreach events, occasionally serving as the interviewer for the event
- Advertised events across multiple social media platforms, including Facebook and Twitter
- Created short video blogs to expand on event content