



Nickellaus Gerald Roberts

They/them/he/him

Ph.D Candidate University of Alabama

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Education:

2019-Present

University of Alabama

Ph.D Biological Sciences

Dissertation: *Increased Sampling of Small-Bodied Lophotrochozoans*

Yields Enhanced Resolution of the Most Enigmatic Invertebrate

Superphylum

Committee: Drs. Kevin M. Kocot, Michael R McKain, Jordi Paps Montserrat, Jeff Lozier, Phillip Harris.

2019-Present

University of Alabama

Museum Certificate Program

Museum Studies, College of Arts and Sciences

2014-2018

University of California at Santa Barbara

College of Letters and Science

B.S. Ecology and Evolution

Publications:

1. Valero-Gracia A, **Roberts NG**, Yap-Chiongco M, Capucho AT, Kocot KM, Matschiner M, et al. First chromosome-level genome assembly of a ribbon worm from the Hoplonemertea clade, *Emplectonema gracile*, and its structural annotation. **(In Review)**
2. **N.G. Roberts**, MJ Gilmore, TH Struck, KM Kocot. Multiple Displacement Amplification Facilitates SMRT Sequencing of Microscopic Animals: The Gastrotrich *Lepidodermella squamata* (Dujardin, 1841) **(In Review)**
3. Yap-Chiongco MK, Bergmeier FS, Roberts NG, Jörger KM, Kocot KM. Phylogenomic reconstruction of Solenogastres (Mollusca, Aplacophora) informs hypotheses on body size evolution. *Molecular Phylogenetics and Evolution*. 2024;194:108029. **(2024)**
4. Saadi AJ, Bibermeier J, Kocot KM, **Roberts NG**, Hirose M, Calcino A, Baranyi C, Chaichana R, Wood TS, Schwaha T. Phylogenomics reveals deep relationships and diversification within phylactolaemate bryozoans. *Proc. R. Soc. B*. **(2022)**.
5. Ahmed Mohammed, **Nickellaus G. Roberts**, Funmilola Adediran, Ashleigh B. Smythe, Kevin M. Kocot, and Oleksandr Holovachov. 2022. Phylogenomic Analysis of the Phylum Nematoda: Conflicts and Congruences With Morphology, 18S rRNA, and Mitogenomes. *Frontiers in Ecology and Evolution* 9. **(2022)**.
6. K. Jörger, N. Alvaro, L. Andrade, T. Araujo, V. Aramayo, T. Artois, W. Ballentine, F. Bergmeier, A. Botelho, A. Buckenmeyer, A. Capucho, I. Cherenva, M. Curini-Galletti, A. Davison, W. Deng, M. Di Domenico, C. Ellison, J. Engelhardt, M. Fais, D. Fontaneto, D. Frade, A. de Frias Martins, F. Goetz, R. Hochberg, A. de Jesus-Navarrete, U. Jondelius, Y. Jondelius, N. Luckas, A. Martinez Garcia, A. Mikhlina, T. Neusser, J. Norenburg, J. Pardo, A. Peixoto, **N. Roberts**, A. Savchenko, A. Schmidt-Rhaesa, L. Tödter, M. Yap-Chiongco, A. C. Ricardo Costa, *Meiozoos 2019 - Exploring the Marine Meiofauna of the Azores. Açoreana*, 17–41 **(2021)**.
7. Natasha Picciani, Jamie R. Kerlin, Noemie Sierra, Andrew J.M. Swafford, M. Desmond Ramirez, **N.G. Roberts**, Johanna T. Cannon, Mary Megan Daly, Todd H. Oakley. Proliferation of eyes in Cnidaria with co-option of non-visual opsins. *Current Biology* 15(28):2. **(2018)**.

Presentations:

1. **N.G. Roberts**, Torsten H. Struck, Michael J. Gilmore, Kevin M. Kocot*. Multiple Displacement Amplification Facilitates HiFi Genome Sequencing of Microscopic Animals. Society for Integrative and Comparative Biology, Seattle. (Poster) **2024**
2. **N.G. Roberts, Torsten H. Struck, Kevin M. Kocot**. Whole Genome Amplification for de novo Genomics – the Genome of the Gastrotrich, *Lepidodermella squamata* as a case study. Global Invertebrate Genomics Alliance Meeting, Cartagena Colombia. (Talk) **2023**
3. **N.G. Roberts**, Kevin M Kocot. Phylogenetic Placement of Mollusca and its Evolutionary Implications. 2023 American Malacological Society Meeting. University of Alabama. (Talk) 2023
4. Bergmeier F. S., Cobo M. C., Gerken S., McLaughlin E. L., Olson C. J., **Roberts N. G.**, Vandersommen V., Yap-Chiongco M., *Kocot K. M. . First records of Monoplacophora from the Eastern Antarctica. American Malacological Society Meeting, Tuscaloosa, AL. (poster) **2023**
5. *Cobo M. C., Bergmeier F. S., McLaughlin E. L., Olson C. J., **Roberts N. G.**, Farris W. J. Yap-Chiongco M., Kocot K. M.. First records of parasitic Nematoda in Solenogastres (Mollusca, Aplacophora): findings of the NBP23-03 “IcyInverts” expedition to the Eastern Antarctic. American Malacological Society Meeting, Tuscaloosa, AL (poster) **2023**.
6. William Ballentine, Kelly Dorgan, Kevin Kocot, **Nickellaus Roberts**, Kenneth Halanych. Meiofaunal diversity as a tool for understanding and monitoring northern Gulf of Mexico environments. 2022 Bays and Bayous Symposium. (Talk) **2022**.
7. **N.G. Roberts**, Torsten H. Struck, Kevin M Kocot. HiFi Sequencing of Multiple Displacement Amplification Products for Contiguous Genomes from Microscopic Invertebrates. Biodiversity Genomics (Talk) Virtual Conference. **2022**.
8. **N.G Roberts**, Kevin M Kocot. Entoprocta, Small Animals with Big Implications for Lophotrochozoa. International Congress on Invertebrate Morphology. University of Vienna. (Talk) **2022**.
9. Ahmed J. Saadi, Julian Bibermaier, Kevin M. Kocot, **Nickellaus G. Roberts**, Masato Hirose, Andrew Calcino, Christian Baranyi, Ratcha Chaichana, Timothy S. Wood, Thomas Schwaha. Phylogenomics reveals deep relationships and diversification within phylactolaemate bryozoans. International Congress on Invertebrate Morphology. University of Vienna. (Talk) **2022**.
10. **N.G Roberts**. What's in a gene? A Streamlined Approach to Displaying Gene Concordance Factors. SuPERBIO Graduate Student Presentation, Department of Biological Sciences, University of Alabama (Talk) **2022**.
11. **N.G Roberts**, Kevin M Kocot. Sequencing and Assembly of Genomes from Microscopic Animals Using Whole Genome Amplification. (Talk) SEPEEG 2021: Southeastern Population Ecology and Evolutionary Genetics Conference. **2022**.
12. **N.G. Roberts**, Greg W. Rouse, Kevin M. Kocot. Resolving Internal Relationships Among Entoprocta and the First Entoproct Genome. (Talk) International Bryozoology Association, Bryozoans of the World. **2021**. Virtual conference.
13. **N.G. Roberts**, K.M. Kocot. Developing a Contaminant Aware Pipeline to Resolve Lophotrochozoan Relationships in the Genomics Age. (Poster) Society of Integrative and Comparative Biology. **2021**. Virtual conference.
14. **N.G. Roberts** and K.M. Kocot. Developing and Analyzing Key Genomic Resources to Resolve the Lophotrochozoan Tree of Life. (Poster) Society of Systematic Biologists **2020**. Gainesville, Florida.
15. Johanna T Cannon, Cayla M Hong, Jacob Egan, **N.G. Roberts**, Douglas J Eernisse, Todd H Oakley. A lens to the past: estimating the timing of eye origins within Metazoa. (Poster) SICB Tampa, Florida. **2019**.
16. **N.G. Roberts**, Johanna T Cannon, Todd H Oakley. Looking into the Past: Eye Evolution within Metazoa. (Poster). UCSB Undergraduate Poster Colloquium. Goleta, California. **2018**.

Reviewer Activities:

2022 PCI Genomics, Systematic Biology.

Research Experience:

2016-2018 Undergraduate Research Assistant
Advisor: Todd H. Oakley



Teaching Experience:

2024 Spring Semester	Invertebrate Zoology Lab
2023 Fall Semester	Principles of Systematics Teaching Assistant Instructor: Kevin M Kocot
2021 Fall Semester, 2022 Fall Semester	Intro Biology Lab - BSC 115/118 University of Alabama
2018	Undergraduate Teaching Assistant University of California at Santa Barbara Honors Macroevolution

Awards, Fellowships & Mentions:

2023	William and Ilouise Hill Research Award for Excellence in Teaching University of Alabama
2023	Carolyn Lawless and Janice Elizabeth Innes Research Award In Marine Sciences University of Alabama
2021	Fellowship in Invertebrate Genomics Honorable Mention Global Invertebrate Genomics Alliance
2019-2021	Aquatic Biology Enhancement Assistantship University of Alabama Biological Sciences
2019	NSF GRFP Honorable Mention

Workshops, External Coursework, Conference Organization:

2023	American Malacological Society Meeting. University of Alabama (Organizer)
2023	Dauphin Island Sea Lab (DISL) Meiofauna Diversity and Taxonomy Workshop (Organizer and Instructor)
2019	Exploring the Marine Meiofauna of the Azores Azores Islands, Portugal (Attendee)
2018	Marine Invertebrate Zoology University of Washington: Friday Harbor Marine Labs San Juan Island, Washington (Attendee)

Cruises:

2023	Icy Inverts. <i>R/V Nathaniel B. Palmer</i> . 68 days. Invertebrate sampling, handling, databasing, and collection. East Antarctica, Prydz Bay.
2020	Icy Inverts. <i>R/V Nathaniel B. Palmer</i> . 67 days. Invertebrate sampling, handling, databasing, and collection. Antarctic Peninsula and NW Weddell Sea.

Outreach:

February 2024	Day at the Museum: Under the Sea Family Day - Alabama Museum of Natural History <ul style="list-style-type: none">Developed a 'Build your own meiofaunal creature' game and showed students K-12 live meiofauna under the microscope.
November 2021	Yakademia Podcast <ul style="list-style-type: none">Academic podcast, shared information on the Antarctic cruise experience.
April 2022, 2021	Bama Bug Fest <ul style="list-style-type: none">Interacted with naturalists, students, and children K-12. Information and activities related to marine invertebrates.
January 2020	Science Olympiad Volunteer Judge <ul style="list-style-type: none">Judged middle to highschool student projects based on natural observations and experiments within Alabama.
November 2019	Scientist For a Day Program



October 2019

- Instructed two highschool students on the daily lives of scientists doing research including, SEM, DNA extraction, and microscopy.
- Homecoming Biology Outreach
- General instruction and outreach associated with science at the University of Alabama including marine invertebrates.