

CURRICULUM VITAE

Randal Singer, Ph.D.

The University of Michigan

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EDUCATION

- 2019 PhD, Interdisciplinary Ecology
The University of Florida/iDigBio, Gainesville, FL
Thesis advisor: Lawrence M. Page
Dissertation: An Interdisciplinary Approach to Increasing the Sustainability of Biodiversity Collections
- 2013 M.S., Zoology
The University of Florida, Gainesville, FL
Advisor: Lawrence M. Page
Thesis: A Revision of the genus *Acanthocobitis* (Peters 1861) with description of a new genus: *Paracanthocobitis* (Teleostei: Nemacheilidae)
- 2008 B.S., Ecology
The University of Georgia, Athens, GA
Senior thesis: Tracing carbon flow in deep-sea whale-fall communities using STELLA.

PROFESSIONAL APPOINTMENTS/EMPLOYMENT

- 2019-Present The University of Michigan– Asst. Research Scientist/Collection Manager, Fishes Management, curation, and coordination of collection resources and activities
Facilitation of collections based research, education and outreach
Aiding research uses of collection through visits and external loans
Personal scientific research on fishes
(734) 936-3754
- 2015-2019 The University of Florida/iDigBio – PhD Candidate
Conducting informatics research using specimen data
Advocating for collections care and use
Organizing workshops and webinars for iDigBio
Representing iDigBio at conferences and events
(352) 273-1374
- 2013-2015 University of Alabama – Collections Manager, Ichthyology
Responsible for specimen cataloguing and curation
Oversee all activities of the fish and herpetology collections
Conduct and aid in research both in and outside of the collection

Aiding in public outreach and specimen loans for research
(205) 348-1822

2010-2013 Florida Museum of Natural History – Asst. Collection Manager, Ichthyology
Responsible for specimen cataloguing and curation
Completed a M.S. degree in Zoology during 2011-2013
Contributed to research leading to scientific publications
Aiding in public outreach and specimen loans for research
(352) 273-1957, <http://www.flmnh.ufl.edu/fish/>

2010 Florida Museum of Natural History – Collections Assistant, Ornithology
Helped maintain collections
Updated labels and databases to current taxonomy
(352) 273-1968, <http://www.flmnh.ufl.edu/>

2008-2010 Research Assistant, Jacqueline Mohan Lab at UGA
Designed filtration technique to increase root processing efficiency
Built and used equipment to obtain data
Lab and field work involving some engineering
Contributed to publications in scientific journals
(706) 542-6365, <http://www.uga.edu/mohanlab/>

PUBLICATIONS

- 2020 Chakrabarty, P., Desai, U., Peck, C., **Singer, R.A.**, Allcock, L., Downey, R., Mackenzie, M., Rodriguez, E., Bart, P. Preliminary Checklist of the Undersea Fauna of the Ross Sea Antarctic Continental Shelf. *In prep - Biodiversity Data Journal*.
- 2020 **Singer, R.A.**, Moore, J.A., Stanley, E.L. Novel life history strategy in a deep sea fish challenges assumptions about reproduction in extreme environments. *Scientific Reports*.
- 2019 **Singer, R.A.**, Ellis, S., Page, L.M. Awareness and use of biodiversity collections by fish biologists. *Journal of Fish Biology*.
- 2018 **Singer, R.A.**, Love, K.J., Page, L.M. A Survey of Aggregated Fish Collections Data in the United States. *PLOS One*.
- 2017 **Singer, R.A.**, Page, L.M. Pfeiffer, J.M.. A Revision of the *Paracanthocobitis zonalternans* (Nemacheilidae) Species Complex, With Descriptions of Three New Species. *Zootaxa*, 4324(1), 85-107. (10.11646/zootaxa.4324.1.5).
- 2017 Quattrini, A. M., Demopoulos, A. W., **Singer, R.A.**, Roa-Varon, A., & Chaytor, J. D. Demersal fish assemblages on seamounts and other rugged features in the Greater-Lesser Antilles transition zone. *Deep Sea Research Part I: Oceanographic Research Papers*, 123 (2017), 90-104

- 2015 **Singer, R.A.**, L.M. Page. A revision of the Zipper Loaches, *Acanthocobitis* and *Paracanthocobitis* (Teleostei: Nemacheilidae), with description of five new species. *Copeia* (2015) 103(2).
- 2014 **Singer, R.A.** Are Dehydrated Specimens a Lost Cause?: A Case-Study to Reclaim Dehydrated Fluid Preserved Specimens. *SPNHC Collection Forum* 28 (2014): 16-22.
- 2012 **Singer, R.A.**, L.M. Page. Redescription of *Schistura myrmekia* (Fowler 1935) (Teleostei: Nemacheilidae). *Zootaxa* 3586 (2012): 347-352.
- 2012 Page, L.M., F.W.H. Beamish, R. Plongsesthee, P. Kangrang, **R.A. Singer**, Z.S. Randall, and Z.P. Martin. *Schistura* (Teleostei: Nemacheilidae) in the Mae Khlong basin in southwestern Thailand with description of a new species. *Zootaxa* 3586 (2012): 319-328.

GRANTS AND CONTRIBUTIONS

- 2019 Senior Investigator. – UM MIDAS PODS - CHANGES: Collections, Heterogeneous data, and Next Generation Ecological Studies - \$70,000
- 2017 Digitization TCN: Collaborative Research: oVert: Open Exploration of Vertebrate Diversity in 3D. Graduate student contributor (could not be co-PI due to student status).
- 2015 Co-PI. - CSBR Ownership Transfer: Saving an ecologically data-rich collection: adding the Geological Survey of Alabama Fish Collection to The University of Alabama Ichthyological Collection - \$272,239.00.

PROFESSIONAL SOCIETY ACTIVITY/PARTICIPATION

Workshops/Panels Organized

- 2019-Current. Annual – ORGANIZER - Michigan State and Federal Agency Training on Invasive Fish Species Identification Workshop - 2 full days with discussion and specimen observation
- 2019 ESA Life Discovery Conference Gainesville, FL: Uses for the iDigBio Data Aggregation Portal in K-12 and Undergraduate Education.
2017. ORGANIZER – Serri Graslie: How to Design a Great Storytelling Project: Insights from NPR Training ‘
Recording: https://idigbio.adobeconnect.com/_a1130716096/p9j6teh0fff/?proto=true
2016. ORGANIZER – Emily Graslie: Education and Outreach Webinar Series: The BrainScoop: Insight into Using Videos as Engaging Outreach Tools
Recording: https://idigbio.adobeconnect.com/_a1130716096/p51jogv0rve/?proto=true

- 2016. ORGANIZER- iDigBio Workshop to Develop Best Practices Wiki for Fishes and Herps. New Orleans, LA
- 2016. PRESENTER - iDigBio Education and Outreach Webinar Series - Social Media and Telepresence to Engage the Public
- 2015. PANELIST - Social Media and Sustainability Conference. Levin School of Law, The University of Florida, Gainesville, FL
- 2015. BCON Collections Communications Workshop. Field Museum, Chicago, IL
- 2015 iDigBio Vertebrate Digitization Workshop Ithaca, NY – workshop session “Innovative Methods for Outreach using Museum Specimens”
- 2015 PANALIST - UF CAIRES Sustainability and Social Media Conference Gainesville, FL – “Digitizing Nature”

Oral Presentations

- 2019 ASIH/JMIH Annual Meeting, Snowbird, UT – Invited Speaker: " Big Heads or Long Tails: How Smaller Fish Collections Contribute to Collections-Based Biodiversity Research"
- 2019 SPNHC Annual Meeting, Chicago, IL – " Big Heads or Long Tails: How Smaller Fish Collections Contribute to Collections-Based Biodiversity Research"
- 2019 ESA Life Discovery Conference Gainesville, FL – Keynote: "How Mentorship and Guidance from Teachers Influenced My Decision to be a Scientist."
- 2018 SPNHC Annual Meeting, Dunedin, NZ – "FishfindR.net: A New Tool for Fish Biodiversity Collections Communication."
- 2018 SPNHC Annual Meeting, Dunedin, NZ – "The Impact of Digitization and Digital Data Mobilization on Biodiversity Research and Outreach" – presented in lieu of author Gil Nelson
- 2018 ASIH/JMIH Annual Meeting, Rochester, NY – “Fishy Feud: What the Survey Says About How Fish Biologists Interact with Biological Collections”
- 2018 Digital Data in Biodiversity Research Conference, Berkeley, CA – “Where do we go from here? The future of collections use, attribution and communications in a digital age through the lens of a data aggregator.”
- 2017 ASIH/JMIH Annual Meeting Austin, TX – “Finding Dories: Variation in *Parazen pacificus* (Zeiformes: Parazenidae: Parazen) with the discovery of an undocumented reproductive strategy in a deep sea fish”

- 2017 SPNHC Annual Meeting Denver, CO – “Fantastic Fishes and Where to Find Them: A Dynamic Inventory of United States Fish Collections” (oral presentation)
Recording: <https://vimeo.com/223347095>
- 2016 ASIH/JMIH Annual Meeting New Orleans, LA – “Jar Wars, The Data Source Awakens: New Ichthyological Frontiers in Specimen-based Research, Outreach and Education”
- 2016 ASIH/JMIH Annual Meeting New Orleans, LA – “Bridging a Deep Gap: First Records of Wide-spread Bathyal and Abyssal Fish Genera from the Central North Pacific Gyre” (contributor)
- 2016 SPNHC Annual Meeting Berlin, Germany – “Small Collections Can Make Big Waves in Education and Outreach”
- 2016 EEEF Annual Meeting Tallahassee, FL – “Using High Definition ROV Video to Explore the Biodiversity of Deep Sea Fish Fauna”
- 2015 ASIH/JMIH Annual Meeting Reno, NV – “Telepresence as an Underutilized, but Powerful Tool for the Modern Taxonomist”
- 2015 SPNHC Annual Meeting Gainesville, FL – “Unlocking the Hidden Potential: Using Museum Collections to Engage Children with Autism”
- 2014 ASIH/JMIH Annual Meeting Chattanooga, TN – Back to the Future – Bringing the UAIC into the Modern Age.
- 2013 ASIH/JMIH Annual Meeting Albuquerque, NM – Does your Flap Hang Low? Is it Bony or a Row? A Taxonomic Revision of the Genus *Acanthocobitis* (Teleostei: Nemacheilidae) with the Recognition of a New Genus *Paracanthocobitis*.
- 2013 Presentation of research on *Acanthocobitis* and specimen rehydration at the Florida Museum of Natural History annual retreat.
- 2013 Asian Freshwater Fishes Conference 2013 at Universiti Brunei Darussalam, Brunei - January 2013- *Acanthocobitis botia* is not one, but several species.
- 2012 ASIH/JMIH Annual Meeting Vancouver, British Columbia, Canada - Are Dehydrated Fluid-Preserved Specimens A Lost Cause?: A Case-Study to Reclaimed Dehydrated Fluid-Preserved Specimens. Presentation for SPNHC Collections Symposium.
- 2012 All Cypriniformes International Conference in Chiang Mai, Thailand – *Schistura myrmekia*: A Valid Species of Loach from Southeast Thailand.

Poster Presentations

- 2016 ASIH/JMIH Annual Meeting New Orleans, LA – C. Peck, **R. Singer**, C. Mah, B. Philip, P. Chakrabarty. “Examination of the Ross Ice Sea Shelf Fauna”.
- 2016 ASIH/JMIH Annual Meeting New Orleans, LA – A. Quattrini, A. Roa-Varon, **R. Singer**, J. Chaytor, A. Demopoulos. “Mesophotic and Deep-Sea Demersal Fish Assemblages on Rugged Hardbottoms of the Greater-Lesser Antilles Transition Zone”.

RESEARCH EXPERIENCE/SCIENTIFIC EXPEDITIONS

- 2019 November. Florida, USA - Collecting large-sized invasive fish species: worked with state and federal agencies to collect invasive fishes from freshwaters in southern Florida as a part of the Florida “Fish Slam”. Over 50 large specimens (>1 foot in length) and tissues were collected and cataloged at UMMZ Fish Division.
- 2016 April-July. Deepwater Exploration of the Marianas: collect critical baseline information of unknown and poorly known areas in and around the Marianas Trench Marine National Monument (MTMNM) and the Commonwealth of the Northern Mariana Islands (CNMI). (shore-based).
- 2015 February-March. Exploring Papahānaumokuākea Marine National Monument: exploration of deep-water habitats in and around Papahānaumokuākea Marine National Monument (PMNM) and will include work on seamounts in the Mid-Pacific Mountains while en route to port in Kwajalein (shore-based).
- 2015 September. NOAA Okeanos Explorer Hohonu Moana: Exploring the Deep Waters off Hawai’i Expedition to the Pacific, Telepresence Scientist. Using high speed internet and voice communication assisted in identification of fishes at localities and recorded video of deep sea fish behavior and localities (shore-based).
- 2015 April. NOAA Okeanos Explorer Oceano Profundo Expedition to the Caribbean, Telepresence Scientist. Using high speed internet and voice communication assisted in identification of fishes at localities and recorded video for deep sea fish behavior and localities (shore-based).
- 2014 September-October. NOAA Okeanos Explorer Atlantic Seamounts and Canyons Expedition, Telepresence Scientist. Using high speed internet and voice communication assisted in identification of fishes at localities and recorded video for deep sea fish behavior and localities (shore-based).
- 2013 January. NSF funded collecting expedition to eastern and northeastern Thailand, Laos and Brunei under the All Cypriniformes Species Inventory. Similar to previous expeditions, hundreds of specimens and tissues were cataloged at the Florida Museum of Natural History.

- 2012 Winter NSF funded collecting expedition to western and southern peninsular Thailand under the All Cypriniformes Species Inventory. Similar to the 2011 expedition, hundreds of specimens and tissues were cataloged at the Florida Museum of Natural History.
- 2011 Spring. NSF funded collecting expedition to western Thailand under the All Cypriniformes Species Inventory. Collections were made across western Thailand and hundreds of specimens and tissues were cataloged at the Florida Museum of Natural History.
- 2009 Summer. NOAA MAR-ECO research cruise to the Mid-Atlantic Ridge under the supervision of Dr. Tracy Sutton of VIMS. On this trip I aided in ship research trawling, sample sorting, organism identification, and research project preparation.

PROFESSIONAL AFFILIATIONS/SERVICE/AWARDS

Awards

2020. Michigan Road Scholar (<https://www.govrel.umich.edu/index.php/stateoutreach/michigan-road-scholars/>)
- 2020-2023 The Society for the Preservation of Natural History Collections (SPNHC) – Member at Large, and SPNHC Executive Committee Inductee

Society/Field Service

- 2019-pres. University of Michigan Museums Steering Committee
- 2019-pres. University of Michigan Museums Specify User Group Representative
- 2011-pres. American Society of Ichthyologists and Herpetologists (ASIH) – Collections Committee, Best Practices Subcommittee Co-Chair, Liaison to SPNHC.
- 2015-pres. Biological Collections Network (BCoN) – Co-Chair, Communications Working Group
- 2014-2019. American Society of Ichthyologists and Herpetologists (ASIH) – Board of Governors Nominee (Class of 2019 and 2018).
- 2013-pres. The Society for the Preservation of Natural History Collections (SPNHC) – Best Practices Subcommittee Member and Wiki Contributor, Liaison to ASIH. Wiki: https://spnhc.biowikifarm.net/wiki/Category:Best_Practices
- Various. Museum best practices consultation. Assisting various collections around the world with specimen rehydration, collection ethics, and management issues via Skype and email.

Peer Reviews

Zootaxa, *Copeia*, *Collection Forum* and *Journal of Fish Biology*

Catalog of Fishes: Eschmeyer, W. N. (various editions).

<http://research.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>

MEDIA COVERAGE

- 2019 On Air with Ryan Seacrest - “Will the Planet Run Out of Fish? Ichthyologist Dr. Randy Singer Answers Ryan's Questions”. (<https://tinyurl.com/y67kaox2>)
- 2018 NPR WUFT: Unvarnished - “Trouble in Thailand - Randy Singer”. (<https://tinyurl.com/y4q3gqyx>)
- 2017 The Independent Florida Alligator - “UF Ph.D. student uses ground-breaking technology for deep-sea research”. (http://www.alligator.org/news/article_b8660e1a-4be3-11e7-9d79-67fe79552e36.html)
- 2017 UF News – “A new age for deep sea exploration”. (<http://news.ufl.edu/articles/2017/06/a-new-age-for-deep-sea-exploration-.php>)
- 2016 Florida Museum Research News – “iDigBio: Why Digitize (Watch)”. <https://www.floridamuseum.ufl.edu/science/idigbio-why-digitize/>
- 2015 Florida Museum Research News – “A New Age for Exploring the uncharted Deep Sea”. (<https://www.floridamuseum.ufl.edu/science/a-new-age-for-exploring-the-uncharted-deep-sea/>)
- 2015 NOAA.gov – “The New NOAA Inouye Regional Center Exploration Command Center” (<http://oceanexplorer.noaa.gov/oceanos/explorations/ex1504/logs/aug19/aug19.html>)

PROFESSIONAL MEETINGS/WORKSHOPS ATTENDED

2020. Specify 6/7 Workshop for Collection Managers. Ann Arbor, MI
- 2019 SPNHC Annual Meeting, Chicago, IL
- 2019 ASIH/JMIH Annual Meeting, Snowbird, UT
- 2019 ESA Life Discovery Conference, Gainesville, FL
- 2018 SPNHC Annual Meeting, Dunedin, NZ
- 2018 ASIH/JMIH Annual Meeting, Rochester, NY
- 2018 Digital Data in Biodiversity Research Conference, Berkeley, CA

2017. ASIH Joint Meeting of Ichthyologists and Herpetologists. Austin, TX

2017. SPNHC Annual Meeting. Denver, CO

2016. ASIH Joint Meeting of Ichthyologists and Herpetologists. New Orleans, LA

2016. SPNHC Annual Meeting. Berlin, Germany

2016. EEEF Annual Meeting. Tallahassee, FL

2016. iDigBio Workshop Challenges of Digitizing Fluid-Preserved Vertebrates. Champaign, IL

2015. ASIH Joint Meeting of Ichthyologists and Herpetologists. Reno, NV

2015 SPNHC Annual Meeting. Gainesville, FL

2015 iDigBio Vertebrate Digitization Workshop. Ithaca, NY

2014. ASIH Joint Meeting of Ichthyologists and Herpetologists. Chattanooga, TN

2014. iDigBio Collections in the 21st Century Workshop. Gainesville, FL

2014. Specify 6.5 Workshop for Collection Managers. Cookeville, TN

2013. Advancing Digitization of Wet Natural History Collections Workshop. Lawrence, Kansas

2013. Biodiversity of Asian Freshwater Fishes Conference. Gadong, Brunei.

2013. ASIH Joint Meeting of Ichthyologists and Herpetologists. Albuquerque, NM

2012. ASIH Joint Meeting of Ichthyologists and Herpetologists. Vancouver, BC

2012. All Cypriniformes International Meeting. Chiang Mai, Thailand.

2011. ASIH Joint Meeting of Ichthyologists and Herpetologists. Minneapolis, MN

TEACHING/MENTORING

2019-present. UROP Faculty Mentor to Yin Yi (Veronica) Ling – Project: *Taxonomic and Biogeographical variation in Parazen pacificus*.

2019-present. Undergraduate volunteer supervisor/mentor: Micheal Grabda, Seeta Goyal, Elizabeth Slayton, and Megan Houle

2019-present. Graduate Student Collections Assistant (GSCA) Supervisor: Jacqueline Popmaj and Hector Figueroa

2018. Co-Instructor - Ichthyology Immersion Course (UF - PCB 4460)
- 2015-present. Collection tours, summer camp talks, class visits on a frequent basis teaching children and lifelong learners about ichthyology, natural history, collections and evolution.
2014. University of Florida – Broader Impacts in Science – “Extreme Minnows Exhibit: How to be Creative with Broader Impacts” (Guest lecture)
2014. Assisted Dr. Phillip Harris with labs, field trips, lectures, and collection assignments for the Biology of Fishes course at the University of Alabama.
- 2013-2015. University of Alabama supervised and mentored two undergraduate research students Evans Delchamp, Andrew Dauphin, and Yashika Hamilton.
2012. University of Florida - Vertebrates in Lotic Systems – Collecting Fishes in Southeast Asian Lotic Systems (Guest lecture)
- 2011- 2013. David Boyd and Karen Aldridge – Collection techniques and fish identification (Mentor)

OUTREACH

2020. Lake Sturgeon: Past, present, and future of an ancient fish
William R. Farrand Memorial Lecture – Fielded questions about fishes at event
- 2020-Pres.. Partnership with Sea Life Aquarium in Auburn Hills, MI for archiving of deceased aquarium fishes and to provide education and training as needed to aquarium visitors and employees.
- 2019-Current. Annual – Michigan State and Federal Agency Training on Invasive Fish Species Identification, both via email and in person.
- 2014-Current. YouTube channel dedicated to museum and ichthyology topics. (17,750+ views as of February, 2020):
<https://www.youtube.com/channel/UCmVORwx9IgUdymBklmWJYLA>
- 2014-Current. Co Moderator of a Facebook group with 1,600 members: “Underwater webcams screenshot sharing” devoted to citizen science. Participants share video clips and screen shots from various livestream ROV projects (e.g. Okeanos and NautilusLive).
https://www.facebook.com/groups/253354671511754/admin_activities/
2017. Florida Museum 100th Anniversary Exhibit App. Developed content for virtual app tour of exhibit using location services.

2016. “Why Digitize” video for iDigBio. Video content explaining the importance of collections and digitization of museums. (<https://vimeo.com/184552432>)
2016. Florida State University STEAM Day. Coordinating outreach and education about natural history collections for k-12 students with emphasis on the intersection between Art, Science and Technology. iDigBio.
- 2015-2017. Telepresence classroom visits to high school Biology classes to discuss museum collections and ichthyology.
- April 2014. Visit to Northside High School. Lectured 10th grade students about Marine Biology and presented interesting marine fish adaptations.
- April 2014. American Christian Academy field trip to the UAIC. Lectured and organized hands-on activities with 2nd grade children about “fish and oceans”.
- 2013-2015. University of Alabama collaboration with “Arts and Autism” to create activities and programs for exposure therapy and engagement of children with neurodevelopmental disorders.
- 2013-2015. Numerous field trips with Huntsville, AL with Dr. Michael Sandel and local area middle school students to various springs to explain invasive species, ecology, and natural history.
2013. Contributed to the University of Alabama “Traveling Fish Show” for community activities and programs.
- 2012-2013. Designed and developed an exhibit titled "Extreme Minnows" housed at the Florida Museum of Natural History, funded by the NSF- All Cypriniformes Species Inventory
- 2011-2013. Florida Museum Ichthyology collection tours for visiting researchers, students and visitors as Assistant Collection Manager.
- 2012-2013. Contribution to planning and development of the Florida Museum of Natural History “Extreme Minnows” exhibit.
2012. Florida Museum of natural History – Earth Day – Ichthyology information/education table.
2011. Florida Museum of Natural History – Butterfly Fest – Ichthyology information/education table.
2010. White County High School – Biology/Zoology Classes – Career Profile: Museum Collection Manager and Ichthyologist. (oral presentation)

2009. White County High School – Biology/Zoology Classes – Why am I an Ichthyologist?

PROFESSIONAL MEMBERSHIPS/AFFILIATIONS

2015-pres. Biological Collections Network (BCoN)

2010-pres. American Society of Ichthyologists and Herpetologists (ASIH)

2010-pres. The Society for the Preservation of Natural History Collections (SPNHC)

2009-pres. Southeastern Fishes Council (SFC)

REFERENCES

Robert Robins

UF Collection Mngr, Fishes
University of Florida
rrobins@flmnh.ufl.edu
(352) 273-1957

Gil Nelson

Research Faculty/Digi Spec
Florida State/iDigBio
gnelson@bio.fsu.edu

Prosanta Chakrabarty

LSU Ichthyology Curator
Louisiana State University
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(225) 578-3079