

Karena H. Nguyen, Ph.D.

Curriculum Vitae

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Education

- 2014-2019 **University of South Florida**, *Ph.D., Integrative Biology*
- Dissertation: Evaluating the Effect of Temperature on a Human Parasite and Its Intermediate Snail Host – Implications for a Changing Climate
- 2010-2014 **Saint Louis University**, *B.S., Biology*
- Ecology, Evolution, & Organismal Biology, *Cum Laude*
 - Minor: Public Health

Research Positions

- 2019-present **Emory University**, *FIRST Postdoctoral Fellow*
Advisors: Dr. David J. Civitello and Dr. Karen Levy
- NIH/NIGMS K12 Institutional Research and Academic Career Development Awards (IRACDA)
- 2014-2019 **University of South Florida**, *Ph.D. Candidate*
Advisors: Dr. Jason R. Rohr and Dr. Valerie J. Harwood
- 2013-2014 **Saint Louis University**, *Undergraduate Research Assistant*
Advisor: Dr. Daniel E. Warren
- 2011-2012 **Saint Louis University**, *Undergraduate Research Assistant*
Advisor: Dr. Gerardo R. Camilo

Teaching Experience

- Spring 2021 **Instructor of Record**, Morehouse College
Course: Parasites and Peoples — Can You Worm Your Way Out?
- Fall 2019 **Graduate Teaching Assistant**, University of South Florida
Course: Biological Principles for Non-Majors
- Spring 2017 **Graduate Teaching Assistant**, University of South Florida
Course: Principles of Ecology Laboratory
- Spring 2015 **Graduate Teaching Assistant**, University of South Florida
Course: General Physiology Laboratory
- Spring 2014 **Undergraduate Teaching Assistant**, Saint Louis University
Course: General Biology II Lecture

Publications

†Indicates co-authorship

§Indicates undergraduate

10. **K.H. Nguyen**[†], P.H. Boersch-Supan[†], R.B. Hartman, S.Y. Mendiola, V.J. Harwood, D.J. Civitello, J.R. Rohr. 2021. Interventions can shift the thermal optimum for parasitic disease transmission. Proceedings of the National Academy of Sciences of the USA 118: e2017537118.
9. D.K. Jones, D. Davila[§], **K.H. Nguyen**, and J.R. Rohr. 2020. Effect of agrochemical exposure on *Schistosoma mansoni* cercariae survival and activity. Environmental Toxicology and Chemistry 39:1421-1428.
8. E.L. Sauer, J.M. Cohen, M.J. Lajeunesse, T.A. McMahon, D.J. Civitello, S.A. Knutie, **K.H. Nguyen**, E.A. Roznik, B.F. Sears, S. Bessler, B.K. Delius, N.T. Halstead, N. Ortega, M.D. Venesky, S. Young, J.R. Rohr. 2020. A meta-analysis reveals temperature, dose, life stage, and taxonomy influence host susceptibility to a fungal parasite. Ecology 101: e02979.
7. **K.H. Nguyen**, B.J. Gemmell, J.R. Rohr. 2020. Effects of temperature and viscosity on miracidial and cercarial movement of *Schistosoma mansoni*: ramifications for disease transmission. International Journal for Parasitology 50:153-159.
6. J.R. Rohr, D.J. Civitello, B.K. Delius, M.E. Craft, G.A. DeLeo, P.J. Hudson, N. Jouanard, **K.H. Nguyen**, R.S. Ostfeld, J.V. Remais, G. Riveau, S. Sokolow, D. Tilman. 2019. Interactions between Feeding 11 Billion People and Infectious Diseases. Nature Sustainability 2:445–456.
5. J.M. Cohen, T.A. McMahon, C. Ramsay, E.A. Roznik, E.L. Sauer, S. Bessler, D.J. Civitello, B.K. Delius, N.T. Halstead, S.A. Knutie, **K.H. Nguyen**, N. Ortega, B.F. Sears, M.D. Venesky, S. Young, J.R. Rohr. 2019. Impacts of thermal mismatches on disease prevalence are moderated by life stage, body size, elevation and latitude. Ecology Letters 22:817-825.
4. **K.H. Nguyen**, C. Senay, S. Young, B. Nayak, A. Lobos, J. Conrad, and V.J. Harwood. 2018. Determination of Wild Animal Sources of Fecal Indicator Bacteria by Microbial Source Tracking (MST) Influences Regulatory Decisions. Water Research 144:424-434.
3. E.M. Symonds, **K.H. Nguyen**, V.J. Harwood, M. Breitbart. 2018. Pepper mild mottle virus: A plant pathogen with a greater purpose in (waste)water treatment development and public health management. Water Research 144:1-12.
2. N.T. Halstead, C.M. Hoover, A. Arakala, D.J. Civitello, G.A. DeLeo, M. Gambhir, S.A. Johnson, N. Jouanard, K.A. Loerns, T.A. McMahon, R.A. Ndione, **K.H. Nguyen**, T.R. Raffel, J.V. Remais, G. Riveau, S.H. Sokolow, J.R. Rohr. 2018. Agrochemicals increase risk of human schistosomiasis by supporting higher densities of intermediate hosts. Nature Communications 9:837.
1. W. Ahmed, am a V.J. Harwood, **K.H. Nguyen**, S. Young, K. Hamilton, S. Toze. 2016. Utility of Helicobacter spp. Associated GFD Markers for Detecting Avian Fecal Pollution in Environmental Waters of Two Continents. Water Research 88:613-622.

Peer-Reviewed Educational Materials

§Indicates undergraduate

2. **K.H. Nguyen**, E.C. Rynkiewicz, D.J. Civitello. Accepted. Simulating parasite transmission and epidemics using contact networks. Advances in Biology Laboratory Education.
1. J.T. Nguyen[§], D.J. Civitello, **K.H. Nguyen**. 2020. Evaluating environmental drivers of disease outbreaks from seasonal trends. Teaching Issues and Experiments in Ecology Vol. 16: Practice #1.

Grants

MP3 Initiative: Molecules and Pathogens to Populations and Pandemics, Emory University (\$199,720) D.J. Civitello (Co-PI), M.C. Freeman (Co-PI) 9/1/2020-08/31/2023 Role: Senior Personnel

Characterizing the extent and epidemiological impact of hybrid schistosomes in Tanzania

Major aim: To assess the drivers of human-cattle hybrid *Schistosoma* parasites and their role in ongoing efforts to control schistosomiasis in humans.

Contributions: I conceived of the project, wrote the grant proposal, and will be directing field and laboratory efforts.

Conference Presentations

[§]Indicates undergraduate mentee

- 2021 **K.H. Nguyen**, E.C. Rynkiewicz, D.J. Civitello. Simulating parasite transmission and epidemics using contact networks. Virtual Conference of the Association for Biology Laboratory Education. June 17-25, Online. Major synchronous lab (oral).
- 2020 **K.H. Nguyen**, P.H. Boersch-Supan, V.J. Harwood, J.R. Rohr. Mismatches in thermal optima of *Schistosoma mansoni* and *Biomphalaria* spp. life-history traits shift the thermal optimum of human schistosomiasis transmission under different intervention scenarios. American Society of Tropical Medicine and Hygiene, November 15-19, Online. Oral presenter.
- 2019 K. Gionet[§], **K.H. Nguyen**, J.R. Rohr. Investigating relationships between temperature, size, infection status, & parasite production in a host-parasite system. University of South Florida Undergraduate Research Symposium, April 4, Tampa, FL. Poster presenter.
- 2019 **K.H. Nguyen**, J.R. Rohr, B.J. Gemmell. Examining the effects of temperature and viscosity on miracidial and cercarial movement of *Schistosoma mansoni*. The Society for Integrative and Comparative Biology, January 3-7, Tampa, FL. Oral presenter.
- 2018 **K.H. Nguyen**, D.J. Civitello, J.R. Rohr. Coupling dynamic energy budget (DEB) theory with a mesocosm experiment to predict and validate the effects of temperature on a host-parasite system. American Society of Tropical Medicine and Hygiene, October 28-November 1, New Orleans, LA. Oral presenter.
- 2018 **K.H. Nguyen**, D.J. Civitello, J.R. Rohr. Using a mesocosm experiment to assess the effects of temperature on a host-parasite system. Southeastern Ecology and Evolution Conference, October 5-6, Miami, FL. Oral presenter.
- 2017 **K.H. Nguyen**, C. Senay, S. Young, B. Nayak, A. Lobos, J. Conrad, J. Senkbeil, V.J. Harwood. Detection of Wild Animal Sources of Fecal Indicator Bacteria by Microbial Source Tracking (MST) Influences Regulatory Decisions. Southeastern Branch of the American Society for Microbiology, November 10-12, St. Petersburg, FL. Oral presenter.
- 2017 **K.H. Nguyen**, J. Rohr, B. Gemmell. The effects of temperature and viscosity on a waterborne human parasite: implications for transmission efficiency. Ecological Society of America Annual Meeting, August 6-11, Portland, OR. Poster presenter.

Conference Presentations (continued)

- 2017 **K.H. Nguyen**, J. Rohr, B. Gemmell. The effects of temperature and viscosity on cercariae of *Schistosoma mansoni*: implications for transmission efficiency. Gordon Research Conference: Tropical Infectious Diseases, March 12-17, Galveston, TX. Poster presenter.
- 2016 **K.H. Nguyen**, J. Senkbeil, A. Lobos, J. Conrad, S. Young, V.J. Harwood. A Multi-Year Comparison of Fecal Indicator Bacteria and Microbial Source Tracking Methodologies at a Wildlife Conservation Site in Central Florida. Florida Branch of the American Society for Microbiology, October 14-16, Miami, FL. Oral presenter.
- 2015 V.J. Harwood, S. Young, **K.H. Nguyen**, B. Nayak. Using Library-Independent Microbial Source Tracking (MST) Methodologies to Identify the Right Suite of Analyses for a Wildlife Conservation Site in Central Florida. Southeastern Branch of the American Society for Microbiology, November 13-15, Kennesaw, GA. Oral presenter.
- 2015 W. Ahmed, V.J. Harwood, **K.H. Nguyen**, S. Young, K. Hamilton, S. Toze. Performance of the Avian-Associated GFD Marker for Microbial Source Tracking in the U.S. and Australia. American Society for Microbiology General Meeting, May 29-June 2, New Orleans, LA. Poster presenter.

Invited Talks

- 2021 **Guest Lecture**, Davidson College, Davidson, NC
Talk: How Do Abiotic Factors Impact Parasite Transmission?
- 2020 **Guest Lecture**, Spelman College, Atlanta, GA
Talk: It's a wormy world – Challenges to eradicating Guinea worm and schistosomiasis
- 2020 **Guest Lecture**, Emory University, Atlanta, GA
Talk: Everyone poops – Does it matter who poops? And where?
- 2019 **Invited Speaker**, Arizona Department of Environmental Quality, Phoenix, AZ
Talk: Determination of Wild Animal Sources of Fecal Indicator Bacteria by Microbial Source Tracking (MST) Influences Regulatory Decisions
- 2018 **Invited Speaker**, Women in Ecology Webinar, Saint Mary's College, Notre Dame, IN
Talk: Some like it hot... or do they? Exploring the effects of temperature on *Schistosoma mansoni*
- 2017 **Guest Lecture**, University of Tampa, Tampa, FL
Talk: Global climate change and parasites

Mentorship

- 2021— Anita To, Ph.D. Candidate, Integrative Genetics & Genomics, University of California - Davis
- 2020— Cheyenne Lee, Ph.D. Candidate, Microbiology and Molecular Genetics, Emory University
- 2019-2020 Justin Nguyen, Class of 2020, Emory University
- 2017-2019 Karlee Gionet, Class of 2019, University of South Florida
- 2018-2019 Amber Carey, Class of 2019, University of South Florida
- 2017-2018 Prachi Singh, Class of 2018, University of South Florida
- 2016-2017 Patrick Felisma, Class of 2018, University of South Florida
- 2015-2016 Raymond James, Class of 2016, University of South Florida

Academic Service

- 2021— **Postdoctoral Representative**, DEI Strategic Planning Initiative, Emory University
2021 **Postdoctoral Representative**, Faculty Search Committee, Department of Biology, Emory University (*nominated position*)
2020— **Postdoctoral Representative**, DEI Committee, Population Biology, Ecology and Evolution Division, Emory University
2020— **Postdoctoral Mentor**, Initiative for Maximizing Student Development, Emory University

Leadership

- 2020— **Chair**, Postdoctoral Association, Emory University
2020— **Postdoctoral Mentor**, Women of Color in Ecology and Evolutionary Biology
2017-2019 **Communications Chair**, Graduate Assistants United, Tampa, FL
2017-2018 **Senator**, Graduate Assistants United, Tampa, FL
2016-2018 **Graduate Mentor**, USF-HHMI STEM Academy Program, University of South Florida
2016-2017 **President**, Biology Graduate Student Organization, University of South Florida
2015-2016 **Co-President**, Graduate Professional Development Series, University of South Florida
2015-2016 **Secretary**, Biology Graduate Student Organization, University of South Florida
2014-2017 **Graduate Student Liaison**, Roots & Shoots, University of South Florida

Honors and Awards

- 2021 Share Your Research Competition, iBiology
2019 Gulf Research Program Science Policy Fellowship, The National Academies of Sciences, Engineering, and Medicine (*declined*)
2019 Mushinsky Award for Research Excellence (\$500), University of South Florida
2018 Integrative Biology Travel Award (\$600), University of South Florida
2018 Nominated member, Inaugural Chapter of Sigma Xi at University of South Florida
2018 Emerging Public Policy Leadership Award, American Institute of Biological Sciences
2017 Best Scientific Talk, Southeastern Branch of the American Society for Microbiology
2017 1st Place, 3-Minute Thesis (3MT) Competition, University of South Florida
2017 Astronaut Trail Shell Club Scholarship (\$1000)
2016 Integrative Biology Graduate Award (\$656), University of South Florida
2016 Runner-Up, 3-Minute Thesis (3MT) Competition, University of South Florida
2016 Porter Family Foundation Scholarship (\$500)
2015 Honorable Mention, NSF Graduate Research Fellowship Program
2015 Outstanding Student Poster, American Society for Microbiology General Body Meeting
2015 Student Government Conference Presentation Grant (\$500), University of South Florida

Public Scholarship & Outreach

- 2020 **Guest Speaker**, Skype a Scientist, Liberty Hill Junior High, Liberty Hill, TX
2019 Justin Remais, **Karena H. Nguyen**, and Meggan Craft. Links between emerging infectious diseases and global food production. Nature Research Sustainability Community.
(URL: <https://sustainabilitycommunity.springernature.com/posts/49871-links-between-emerging-infectious-diseases-and-global-food-production>)

Public Scholarship & Outreach (continued)

- 2019 **Guest Speaker**, Skype a Scientist, Toquam Magnet School, Stamford, CT
- 2019 **Guest Speaker**, Skype a Scientist, Joe Hamilton Elementary, Crescent City, CA
- 2018 **Karena H. Nguyen** and V.J. Harwood. Identifying Sources of Fecal Pollution Improves Regulatory Decisions. Science Trends.
(URL: <https://sciencetrends.com/identifying-sources-of-fecal-pollution-improves-regulatory-decisions/>)
- 2017 **Guest Speaker**, Palm Harbor Middle School, Palm Harbor, FL

Professional Development

- 2021 Mentoring Certificate, Office of Postdoctoral Education, Emory University
- 15 hours of courses taught by trained facilitators using curriculum from the Center for the Improvement of Mentored Experiences in Research (CIMER)
- 2021 Leadership Certificate, Office of Postdoctoral Education, Emory University
- 18 hours of courses taught by Goizueta Business School faculty focusing on self-awareness, managing high-performing teams, implicit bias, and negotiation
- 2020 Management Certificate, Office of Postdoctoral Education, Emory University
- 18 hours of courses taught by Goizueta Business School faculty focusing on decision making, budgeting, project management, and innovation
- 2020 Summer Institute in Statistical Genetics, University of Washington (online)
- 5-day workshop focusing on statistical techniques to measure genetic variation and differences in population structures
- 2020 Scientific Writing and Publishing, Nature Masterclass (online)
- 11 hours of modules focusing on preparing manuscripts and review articles for publication and developing constructive feedback as a reviewer
- 2020 The Postdoc Academy: Succeeding as a Postdoc, edX and Boston University (online)
- 6-week course focusing on goal setting, career development, working effectively in an intercultural environment, and developing resilience
 - Attended five 1.5-hr in-person learning sessions at Emory University to connect with other postdoctoral scholars taking the online course
- 2018 Preparing for College Teaching, Academy for Teaching and Learning Excellence (ATLE), University of South Florida
- 10-week course focusing on course development, effective teaching strategies, student assessment, and assembling a teaching portfolio

Media Coverage

- 2021 Press release, Water temperature key to schistosomiasis risk and prevention strategies
(URL: https://news.emory.edu/stories/2021/03esc_water_temperature_schistosomiasis_nguyen/campus.html)
- 2020 Blog post, Meet the Scientist Series by Time Scavengers
(URL: <https://timescavengers.blog/2020/01/13/dr-karena-nguyen-disease-ecologist/>)
- 2018 Press release, U.S. Rep. Castor recognizes outstanding students for their national recognitions
(URL: <https://castor.house.gov/news/documentsingle.aspx?DocumentID=398659>)

Media Coverage (continued)

- 2018 USF News, USF PhD Candidate Receives National Public Policy Leadership Award
(URL: <http://news.usf.edu/article/templates/?a=8293&z=230>)
- 2017 USF News, USF Graduate Student Inspired to Make a Difference
(URL: <http://news.usf.edu/article/templates/?a=7872&z=220>)
- 2015 WUSF public radio, Student group inspired by Jane Goodall needs 'Green thumbs'
(URL: <https://wusfnews.wusf.usf.edu/university-beat/2015-04-07/student-group-inspired-by-jane-goodall-needs-green-thumbs>)

Professional Appointments

- 2017-2019 **Scout Program and Outreach Instructor**, Museum of Science and Industry, Tampa, FL
Supervisor: Urmila Wadnerkar
- May-Aug 2014 **Extern**, Institute for Conservation Medicine, Saint Louis Zoo, St. Louis, MO
Supervisor: Jamie Palmer, M.S.
- May-Aug 2012 **Vietnamese Interpreter**, Institute for Family Medicine, St. Louis, MO
Supervisor: David Campbell, M.D.

Professional Societies

- 2020-present Association for Biology Laboratory Education
- 2019-present Society for Integrative & Comparative Biology
- 2018-present American Society of Tropical Medicine and Hygiene
- 2015-present American Society for Microbiology
- 2013-present Ecological Society of America

References

David J. Civitello (Postdoc Advisor)
Assistant Professor
Biology Department
Emory University
Email: david.james.civitello@emory.edu

Karen Levy (Postdoc Co-Advisor)
Associate Professor
Department of Environmental and Occupational Health Sciences
University of Washington
Email: klevyx@uw.edu

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Assistant Professor
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Morehouse College
Email: ethell.vereen@morehouse.edu

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Morehouse College
Email: lawrence.blumer@morehouse.edu

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Galla Professor and Chair
Department of Biological Sciences,
Eck Institute of Global Health,
Environmental Change Initiative
University of Notre Dame
Email: jasonrohr@gmail.com

Valerie J. Harwood (PhD Co-Advisor)
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Department of Integrative Biology
University of South Florida
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