

# Nina Wale

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## Education

<b>Ph. D.</b>	<b>Pennsylvania State University, USA</b> 'Resource competition & the evolution of drug resistance in malaria parasites'. Advisor: Andrew Read	2016
<b>B. A.</b>	<b>University of Cambridge, UK</b> Archaeology & Anthropology (Biological Anthropology specialism)	2010

## Experience (advisor specified in parentheses)

<b>Michigan State University</b>	Assistant Professor	2020-
<b>University of Michigan</b>	Postdoctoral Research Fellow (Meghan Duffy & Aaron King)	2017-2020
	Postdoctoral Research Fellow (Meghan Duffy)	2016-2017
<b>Pennsylvania State University</b>	Graduate Research Assistant (Andrew Read)	2011-2015
<b>EcoHealth Alliance</b>	Research Associate	2010-2011
<b>University of Cambridge</b>	Undergraduate Researcher (Leslie Knapp)	2009-2010

## Awards, Fellowships & Grants

Total Awarded: \$55,000

### Awards

Gilbert S. Omenn Prize, International Society for Evolution, Medicine & Public Health. <i>For the best paper on the topic of evolutionary medicine published in 2017. Competitive, nominated by peers.</i>	2018
W. D. Hamilton Award, Society for the Study of Evolution <i>For the best presentation by a student at the annual SSE meeting. Competitive, multi-round competition.</i>	2016
Excellence in Teaching Award, Pennsylvania State University	2015
<b>Fellowships &amp; Grants</b>	
'Immunity Across Scales' Workshop Grant, National Science Foundation IDEAS RCN <i>Competitive grant to facilitate attendance at ~30 attendee workshop.</i>	2018
Research Exchange Grant, National Science Foundation IDEAS RCN <i>Competitive fellowship to facilitate collaborative projects across disciplines in infectious disease biology.</i>	2015
Summer Institute in Statistics & Modeling in Infectious Diseases Travel Award	2015
Ecology & Evolution of Infectious Diseases Workshop, National Science Foundation	2013
Paul & Harriet Campbell Distinguished Graduate Fellowship, Pennsylvania State University <i>Competitive fellowship awarded to one graduate student in the Eberly College of Science at PSU, annually.</i>	2012
University Graduate Fellowship, Pennsylvania State University <i>Competitive fellowship awarded to 18 graduate students across PSU, annually.</i>	2011
Braddock Award, Pennsylvania State University	2011

Undergraduate Dissertation Research Fund, University of Cambridge	2011
Panton Trust Award, University of Cambridge	2009
Cambridge Commonwealth Trust Travel Award, University of Cambridge	2009
Emmanuel College Senior Exhibition Award, University of Cambridge	2008

## Publications (\*indicates undergraduate co-author)

Duffy, M.A., Garcia-Robledo, C., Gordon, S., Grant, N.K., Green II, D.A., Kamath, A., Penczykowski, R.M., Rebodella-Gomez, M., **Wale, N.** & Zaman, L\* (\*authors in alphabetical order)  
Model systems in ecology, evolutionary biology, and behavior: A call for more diversity in our model systems and discipline.  
*The American Naturalist*, **in press**

**Wale, N.** & Duffy, M.A. The use and underuse of model systems in infectious disease ecology & evolutionary biology.  
*The American Naturalist*, **in press**

Greischar, M., Alexander, H., Bashey, F., Bento, A., Bhattacharya, A., Bushman, M., Childs, L., Daversa, D., Day, T., Faust, C., Gallagher, M., Gandon, S., Glidden, C., Halliday, F., Hanley, K., Kamiya, T., Read, A., Schwabl, P., Sweeny, A., Tate, A., Thompson, R., **Wale, N.**, Wearing, H., Yeh, P. & Mideo, N\* (2020) Evolutionary consequences of feedbacks between within-host competition and disease control.  
*Evolution, Medicine & Public Health*, 2020 (1) 30-34 (\*middle authors in alphabetical order)

**Wale, N.**, Jones, M.J., Sim, D.G. Read, A.F & King, A.A. (2019) The contribution of host-cell directed vs. parasite-directed immunity to the disease and dynamics of malaria infections.  
*Proceedings of the National Academy of Sciences*, 116 (44) 22386-22392

**Wale, N.**, Turrill, M.T\*, Duffy, M.A. (2019) A colorful killer: *Daphnia* infected with the bacterium *Spirobacillus cienkowskii* exhibit unexpected color variation.  
*Ecology*, 100 (3) e02562

Bresciani, L., Lemos, L.N.\*, **Wale, N.**, Lin, J.L., Strauss, A.T., Duffy, M.A. & Rodrigues, J.L.M. (2018) Draft genome sequence of the *Candidatus Spirobacillus cienkowskii*, a pathogen of freshwater *Daphnia* species, reconstructed from hemolymph metagenomic reads.  
*Microbiology Resource Announcements*, 7 (22) 301175-78

**Wale, N.**, Sim, D.G., Jones, M.J., Salathe, R., Day, T. & Read, A.F. (2017) Resource limitation prevents the emergence of drug resistance by intensifying within-host competition.  
*Proceedings of the National Academy of Sciences*, 114 (52): 13774-13779

**Wale, N.**, Sim, D.G. & Read, A.F. (2017) A nutrient mediates intraspecific competition between rodent malaria parasites *in vivo*.  
*Proceedings of the Royal Society of London, B*. 284: 20171067

Kouyos, R.D., Metcalf, C.J.E., Birger, R., Klein, E.Y., zur Wiesch, P.A., Ankomah, P., Arinaminpathy, N., Bogich, T.L., Bonhoeffer, S., Brower, C., Chi-Johnston, G., Cohen, E., Day, T., Greenhouse, B., Huijben, S., Metlay, J., Mideo, N., Pollitt, L.C., Read, A.F., Smith, D.L., Standley, C., **Wale, N.** & Grenfell, B. (2014) The path of least resistance: aggressive or moderate treatment.  
*Proceedings of the Royal Society of London, B*. 281: 20140566 (\*majority of authors in alphabetical order)

Vandegrift, K.J., **Wale, N.** & Epstein, J.H. (2011) An ecological & conservation perspective on advances in the applied virology of zoonoses.  
*Viruses*, 3: 370-397

**In revision**  
Allgeier, J., Weeks, B., Munsterman, K/, Wenger, S., **Wale, N.**, Parravicini, V., Schiettekatte, N., Villéger, S. & Burkepille, D. Phylogenetic conservatism drives nutrient dynamics of coral reef fishes.

**In prep** (i.e. between submissions or in full draft form)  
**Wale, N.**, Fuller, R.C., Johnsen, S., Turrill, M.T.\*, & Duffy, M. A. The visual ecology of selective predation: Are unhealthy hosts less stealthy hosts?

Day, T., **Wale, N.** & Read, A. F. The evolutionary benefit of using host-directed therapy for controlling infectious disease.

## Presentations

### Invited Oral Presentations

Kellogg Biological Station, Michigan State University, USA	Mar 2021
Dept. Microbiology, Ohio State University, USA	Dec 2020
Dept. Microbiology & Molecular Genetics, Michigan State University, USA	Mar 2020
Biology Department Seminar, University of Virginia, USA	Nov 2019
Evolutionary consequences of feedbacks between within-host competition and disease control, NSF IDEAS RCN Workshop, Princeton University, USA	Jun 2019
Biology Department Seminar, Albion College, USA	Mar 2019
Biology Department Seminar, University of Kentucky, USA	Jan 2019
Omenn Prize Lecture & Symposium on Novel Solutions to Chemotherapeutic Resistance, International Society for Evolution, Medicine & Public Health Conference, Park City, USA	Aug 2018
EvoS Seminar Series, State University of New York (SUNY) Binghamton, USA	Mar 2018
Institute for Molecular Medicine & Infectious Disease Seminar, Drexel University College of Medicine, USA	Feb 2018
Ecology & Evolutionary Biology Department Seminar, University of Indiana, USA	Aug 2017
Evolutionary Microbiology Seminar, Georgia Institute of Technology, USA	Oct 2016
Ecology & Evolutionary Biology Department Seminar, University of Michigan, USA	Sep 2016
W. D. Hamilton Award Symposium, Evolution Meeting, Austin, Texas, USA	Jun 2016
Swiss Federal Institute of Aquatic Science & Technology, Zurich, Switzerland	Jun 2012
<b>Upcoming Invited Oral Presentations</b>	
American Society of Naturalist's Vice-Presidential Symposium	Jun 2020
<b>Contributed Oral Presentations</b>	
Ecological Society of America Annual Meeting, Portland, Oregon, USA	Aug 2017
Ecology & Evolution of Infectious Disease Conference, Cornell University, USA	Jun 2016
Center for Infectious Disease Dynamics Seminar, The Pennsylvania State University, USA	Feb 2014
European Meeting of Ph.D. Students in Evolutionary Biology (EMPSEB), Exeter University, UK	Sep 2013
<b>Posters</b>	
2 <sup>nd</sup> Joint conference on Evolutionary Biology, Montpellier, France	Aug 2018
Jacque Monod Conference, Roscoff, France.	Aug 2017
Congress of the European Society for Evolutionary Biology (ESEB), Lisbon, Portugal	Aug 2013
Ecology & Evolution of Infectious Diseases Meeting, The Pennsylvania State University, USA	May 2013
Ecology & Evolution of Infectious Diseases Meeting, University of Michigan, USA	May 2012
NIH/NSF Ecology & Evolution of Infectious Diseases Meeting of Principal Investigators, University of California Berkeley, USA	Mar 2012

## Teaching & Mentoring

**Mentoring** \*indicates honor's thesis co-advisor

### University of Michigan

Rija Awan	2020-	Major undeclared.
Ahmad Kafri	2019-	Major in Biophysics
Anita Weng	2019-	Major undeclared.
Karen Cao	2019-	Major in Biology, Health and Society
Vincent Hernandez	2019 (summer)	FEU student from CSU Dominguez Hills.
Haikel Haile	2019-present	Major in Biology & International Studies
Justin Ramirez	2017-present	Major in Sociology, minor in Community Action.
Claire Freimark*	2017-present	Major in Mathematical Biology & EEB.
McKenna Turrill*	2016-2019	American Society for Microbiology Undergraduate Research Fellowship recipient. Major in EEB.
Rachel DeCaluwe	2016-2017	Now an environmental consultant.
Stephanie Roskowski	2016-2017	Major undeclared. UROP student
Harbria Gardner	2016	Doris Duke Conservation Scholar
Natalie Imirzian*	2016	Now graduate student, Penn State.
<i>Pennsylvania State University</i>		
Michelle Lai*	2013-2017	Now medical student, Icahn School of Medicine at Mt Sinai

### Teaching

Guest Lecturer	<i>Microbial Ecology, University of Michigan</i>	2019
Guest Lecturer	<i>EEB Capstone Course, University of Michigan</i>	2018, 2019
Guest Lecturer	Lectured on the evolution of drug resistance. <i>SUNY Binghamton</i> .	2018
Instructor	<i>Prove It! University of Michigan</i>	2017
Teaching Assistant	Scientific literacy course, part of a program to prepare high school students from underrepresented groups to attend elite universities. <i>Populations &amp; Communities (BIO 220), Pennsylvania State University</i>	2013, 2014
	Instructor of laboratory component of course.	

## Service & Outreach

### Professional Service

Secretary & Treasurer, *Ecological Society of America Disease Section* 2019-2021

### Reviewing & Editing

Editorial Board Member at *ISME Journal* 2021-  
 Reviewer for *American Naturalist*, *eLife*, *Evolution* (recognized by the Editor for excellence in reviewing, 2018), *Evolution, Medicine & Public Health*, *Frontiers in Ecology & Evolution*, *Nature Ecology & Evolution*, *PLoS Biology*, *PLoS Pathogens* & *Proceedings of the Royal Society B*.

### Other Service & Outreach

"Skype a Scientist" Guest	2 virtual visits to Hawthorne High School, CA	2020
Judge	Gilbert S. Omenn Prize in Evolutionary Medicine.	2019
Judge	U. Mich EEB Dept. Outstanding Grad Student Publication Award	2018
Research Synopsis Editor	Center for Infectious Disease Dynamics Website Coordinator	2013
	Wrote & edited research synopses for Penn State's Center for Infectious Disease Dynamics (CIDD) website.	
Recruiting Officer	Penn State Biology Graduate Student Association.	2013
	Organized events for recruiting new graduate students to the event.	
Outreach volunteer	The Great Insect Fair (entomology outreach event).	2012,
		2013

**Media**

EvolutionaryMD Podcast

Interview re. research on antimicrobial resistance & immunity.  
2019

BBC Radio Cornwall

Live interview re. about evolutionary biology & EMPSEB.  
2013