**Sarah Budischak**

Assistant Professor of Biology

W.M. Keck Science Department

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*Appointments*

**Assistant Professor of Biology.** W.M. Keck Science Department of Claremont McKenna, Pitzer and Scripps Colleges. July 2018-Present.

**Postdoctoral Research Associate. Princeton University.** Department of Ecology and Evolutionary Biology. March 2015 – July 2018.

**Writing in Science and Engineering Teaching Fellow. Princeton University.** 2016-2017.

**Postdoctoral Research Associate. The University of Georgia.** Odum School of Ecology.

August 2014 - February 2015

*Education*

**Ph.D. University of Georgia.** *With Honors.* 2014. Odum School of Ecology.

*The causes and consequences of parasite co-infection: insights from community ecology.*

**University of Montana.** Division of Biological Sciences, Organismal Biology and Ecology.

Transferred to UGA with advisor’s lab in 2010.

**M.S. Virginia Polytechnic Institute and State University.** 2007. Wildlife Ecotoxicology and Physiological Ecology lab. Department of Fish and Wildlife Conservation.

*Reciprocal effects of trematode parasites and malathion on developing pickerel frogs.*

**B.S. Davidson College**. 2005. *cum laude,* Biology Major, Chemistry Minor.

*Peer-reviewed Publications*

1. **S.A. Budischak**, S. Halvorsen\*, F. Finseth. 2022. Genomic heterozygosity is associated with parasite abundance, but the effects are not mediated by host condition. *Evolutionary Ecology.* https://doi-org.ccl.idm.oclc.org/10.1007/s10682-022-10175-8
2. Warburton, E., **S.A. Budischak**, A. Jolles, V.O. Ezenwa. 2022. Within-host and external environments differentially shape β-diversity across parasite life stages. *Journal of Animal Ecology*. https://doi-org.ccl.idm.oclc.org/10.1111/1365-2656.13877
3. Seguel, M., **S.A. Budischak**, A. Jolles, V.O. Ezenwa. 2022. Helminth-associated changes in host immune phenotype connect top-down and bottom-up interactions during co-infection. *Functional Ecology*. https://doi-org.ccl.idm.oclc.org/10.1111/1365-2435.14237
4. H.A. Lakin, H. Tavalire, K. Sakamoto, P. Buss, M. Miller, **S.A. Budischak**, K. Raum, V.O. Ezenwa; B. Beechler; A. Jolles. 2022. Bovine tuberculosis in African buffalo (*Syncerus caffer*): progression of pathology during infection. *PLOS Neglected Tropical Diseases*. 16:e0010906. https://doi-org.ccl.idm.oclc.org/10.1371/journal.pntd.0010906
5. Ezenwa, V.O., **S.A. Budischak**, P. Buss, M. Seguel, G. Luikart, A.E. Jolles, K. Sakamoto. 2021. Natural resistance to worms exacerbates bovine tuberculosis severity independently of worm coinfection. *Proceedings of the National Academy of Sciences* 118: e2015080118. https://doi.org/10.1073/pnas.2015080118
6. Tombak, K.J., **S.A. Budischak**, S. Hauck, L.A. Martinez, and D.J. Rubenstein. 2020. The non-invasive measurement of faecal immunoglobulin in African equids. *International Journal for Parasitology: Parasites and* Wildlife 12:105-112. https://doi.org/10.1016/j.ijppaw.2020.05.005
7. Ezenwa, V.O., A.E. Jolles, **S.A. Budischak**, B.R. Beechler, and E. Gorsich. 2020. Causes and consequences of parasite interactions in African buffalo. Wildlife Disease Ecology: Linking Theory to Data and Application. Eds: K. Wilson, A. Fenton, and D. Tompkins.
8. Gehman, A.M., C. Keogh, D. Satterfield, A. McKay, and **S.A. Budischak**. 2019. Collect infection data to improve ecological understanding. *Ecosphere*. https://doi.org/10.1002/ecs2.2770
9. van Leeuwen, A., **S.A. Budischak**, A.L. Graham, and C. Cressler. 2019. Parasite resource manipulation drives bimodal variation in infection duration. *Proceedings of the Royal Society B* 286: 20190456. https://doi-org.ccl.idm.oclc.org/10.1098/rspb.2019.0456
10. Dallas, T., A.M. Gehman, A.A. Aguirre, **S.A. Budischak**, J.M. Drake, M.J. Farrell, R. Ghai, S. Huang, and I. Morales-Castilla. 2019. Contrasting latitudinal gradients of body size in helminth parasites and their hosts. *Global Ecology and Biogeography*. doi: 10.1111/geb.12894
11. **Budischak**, **S.A.,** C. Hansen, Q. Caudron, R. Garnier, T.R. Kartzinel, I. Pelczer, C. Cressler, A. van Leeuwen, and A.L. Graham. 2018. Feeding immunity: physiological and behavioral responses to infection and resource limitation. *Frontiers in Immunology 8:1914.*
12. **Budischak, S.A.**, A.E. Wiria, F. Hamid, L.J. Wammes, L. van Lieshout, E. Sartono, T. Supali, M. Yazdanbakhsh, and A.L. Graham. 2018. Resource competition drives infection severity in human malaria-hookworm co-infections. *Ecology Letters* 21:536-545
13. **Budischak, S.A.**, and C. Cressler. 2018. Fueling defense: effects of resources on the ecology and evolution of tolerance to parasite infection. *Frontiers in Immunology* 9:2453. doi: 10.3389/fimmu.2018.02453
14. **Budischak, S.A.**, D. O’Neal, A.E. Jolles, and V.O. Ezenwa. 2018. Differential host responses to parasitism shape divergent fitness costs of infection. *Functional Ecology* 32:324-333.
15. T.A. Dallas, A.A. Aguirre, **S.A. Budischak**, C. Carlson, V.O. Ezenwa, B. Han, S. Huang, P.S. Stephens. 2018. Gauging support for macroecological patterns in helminth parasites. *Global Ecology and Biogeography*. doi: 10.1111/geb.12819
16. Leung, J.M., **S.A. Budischak**, H.T. Chung, C. Hansen, R. Bowcutt, R. Neill\*, M. Shellman\*, P. Loke, and A.L. Graham. 2018. Rapid environmental effects on gut nematode susceptibility in rewilded mice. *PLOS Biology* 16:e2004108.
17. Beechler, B.R., A.E. Jolles, **S.A. Budischak**, P.L.A.M. Corstjens, V.O. Ezenwa, M. Smith\*, R. Spaan, G. van Dam, and M. Steinauer. 2017. Host immunity, nutrition and coinfection alter longitudinal infection patterns of schistosomes in a free ranging African buffalo population. *PLOS Neglected Tropical Diseases* 11: e0006122.
18. Austin, L.V.\*, **S.A. Budischak1**, J. Ramadhin\*, E.P. Hoberg, A. Abrams, A.E. Jolles, and V.O. Ezenwa. 2017. A comparison of two methods for quantifying parasitic nematode fecundity. *Parasitology Research* 116:1597-1602.
19. Henley, W., J.J. Schmerfeld, **S.A. Budischak**, C.M. Hall, R.J. Neves, S. Ciparis, and J.W. Jones. 2016. Freshwater mussel (Unionidae) abundance and diversity upstream and downstream of a superfund site on the North Fork Holston River, Saltville, Virginia. *Journal of Shellfish Research*, 35:875-883.
20. **Budischak, S.A.**, A. Abrams, E. Hoberg, A.E. Jolles, and V.O. Ezenwa. 2016. Experimental insight into the process of parasite community assembly. *Journal of Animal Ecology*, 85:1222-1233.
21. P.R. Stephens, S. Altizer, K.F. Smith, A.A. Aguirre, J.H. Brown, **S.A. Budischak**, J.E. Byers, J.T. Davies, J.M. Drake, V.O. Ezenwa, M.J. Farrell, J.L. Gittleman, B.A. Han, S. Huang, R.A. Hutchinson, P.T. Johnson, C.L. Nunn, D. Onstad, A. Park, G.M. Vazquez-Prokopec, J.P. Schmidt, and R. Poulin. 2016. The macroecology of infectious diseases: a new perspective on global-scale drivers of pathogen distributions and impacts. *Ecology Letters* 19:1159-1171.
22. **Budischak, S.A.**, Art Abrams, Eric Hoberg, A.E. Jolles, and V.O. Ezenwa. 2015. A combined parasitological molecular approach for noninvasive characterization of parasitic nematode communities in wild hosts. *Molecular Ecology Resources* 15:1112-1119.
23. **Budischak, S.A.**, K. Sakamoto, L.C. Megow\*, K.R. Cummings, J.F. Urban, Jr, and V.O. Ezenwa. 2015. Resource limitation alters the consequences of co-infection for hosts and parasites. *International Journal for Parasitology* 45:455-463.
24. **Budischak, S.A.**, A.E. Jolles, and V.O. Ezenwa. 2013. Direct and indirect costs of co-infection in the wild: linking GI parasite communities, host hematology, and immune function. *International Journal for Parasitology: Parasites and Wildlife* 1:2-12.
25. Hopkins, W.A., C. Bodinof, **S.A. Budischak**, and C. Perkins. 2013. Nondestructive indices of mercury exposure in three species of turtles occupying different trophic niches downstream from a former chloralkali facility. *Ecotoxicology* 22:22-32.
26. Bergeron, C.M., K.M. Bodinof, **S.A. Budischak,** H. Wada, J.M. Unrine, and W.A. Hopkins. 2011. Counterbalancing effects of maternal mercury exposure during different stages of early ontogeny in American toads. *Science of the Total Environment* 409:4746-4752.
27. **Budischak, S.A.**, L.K. Belden, and W.A. Hopkins. 2009. Relative toxicity of malathion to trematode-infected and noninfected *Rana palustris* tadpoles. *Archives of Environmental Contamination and Toxicology* 56:123-128.
28. **Budischak, S.A.**, L.K. Belden, and W.A. Hopkins. 2008. The effects of malathion on embryonic development and latent susceptibility to trematode parasites in ranid tadpoles. *Environmental Toxicology and Chemistry* 27:2496-2500.
29. Hester, J. M., **S.A. Budischak**, and M.E. Dorcas. 2008.The Davidson College Box Turtle Mark-Recapture Program: Urban Herpetological Research Made Possible by Citizen Scientists. *In* R. E. Jung and J. C. Mitchell (eds.), Urban Herpetology. Herpetological Conservation V.3, Society for the Study of Amphibians and Reptiles. Salt Lake City, UT.
30. **Budischak, S.A.**, J.M. Hester, S.J. Price, and M.E. Dorcas. 2006. Natural history of *Terrapene carolina* (box turtles) in an urbanized landscape. *Southeastern Naturalist* 5:191-204.
31. Ripperton, J.G., P.A. Peroni, and **S.A. Budischak**. 2006. Effects of burial on seed germination and seedling performance in white campion (*Silene latifolia*). *Journal of the North Carolina Academy of Science* 122:29-38.

\* undergraduate mentees + post-bac. or graduate student mentees 1corresponding author

Manuscripts in Review

1. J. Mistrick, S.M. Kitchen, J.S.M. Veitch, S. Clague, B.C. Newman, R.J. Hall, **S.A. Budischak**, K.M. Forbes, M.E. Craft. Effects of food addition and helminth removal on space use and spatial overlap in wild rodent populations. (*In Revision, Journal of Animal Ecology*)
2. J. Mistrick, J.S.M. Veitch, K.E. Wearing, S.M. Kitchen, S. Clague, S. Du, M. Michalska-Smith, B.C. Newman, T. Sironen, C.E. Cressler, R.J. Hall, S.A. Budischak, K.M. Forbes, M.E. Craft. Ecological factors alter how spatial overlap predicts viral infection dynamics in wild rodent populations. (*In Review, Proceedings of the Royal Society, B*)
3. Beagle, A.S.+, **S.A. Budischak**, M.E. Craft, K. Forbes, R. Hall, D. Nguyen, C.E. Cressler. Do some super-spreaders spread better? Effects of individual heterogeneity in epidemiological traits. (*Submitted,* *Pre-print available at:* [*https://www.medrxiv.org/content/10.1101/2022.04.19.22273976v1*](https://www.medrxiv.org/content/10.1101/2022.04.19.22273976v1))

*Grants and Funding*

Next-generation sequencing of splenocyte samples from bank voles. CMC Faculty Research Funding, Spring 2023. *(Funded, $9989*)

NSF Research Experience for Post-Baccalaureate Students (REPS) Fellowship for Stephanie Du (Scripps ’21). 2021-2022. Co-wrote the application with K. Forbes and S. Du, and I served as her primary advisor. (*Funded*)

Introduction to Public Health. Hive Course Development Grant. 2022. Collaboration with Katrina Keil (Pom), Sharon Stranford (Pom), Alicia Bonaparte (Pit), Christina Edholm (Scr), and Debbie Freund (CGU). (*Funded, $5000*)

Ecology of expulsion: Leveraging genetics & within-host dynamics to predict nematode clearance rates. NIH-R01 Grant. Collaborator. Andrea Graham and Clay Cressler (Co-PIs). (*not funded*)

Modeling of Disease Transmission in Small Residential Colleges. NSF DEB COVID-19 RAPID Preproposal. Co-Primary Investigator (Co-PI). Janet Shung (PI). 2020 (*Not recommended for full proposal*).

HHMI Inclusive Excellence 3 Competition. Co-PI. 2020 (*Pre-proposal not selected*)

Habitat and coinfection as drivers of heterogeneity in cross-scale wildlife infectious disease processes. Co-Primary Investigator (Co-PI). National Science Foundation (NSF), Ecology and Evolution of Infectious Diseases Program, Division of Environmental Biology (DEB). 2019-2025 (Total funded: $2,477,421; subaward at Claremont Colleges: $556,106)

DNA Barcoding Workshop. Professional Development Network Award. Claremont Colleges 2019-2020. (Funded, $2500)

NSF Research Coordination Network (RCN): Infectious Disease Evolution Across Scales Research Exchange. Cressler Lab, University of Nebraska. 2016

NSF RCN: Infectious Disease Evolution Across Scales Travel Award. 2015

NSF RCN: Ecoimmunology Graduate Travel Award. 2014.

NSF EEID Travel Award – EcoHealth conference in Kunming, China. October 2012

Odum School of Ecology Small Grant. 2011. ($1,500)

NSF Doctoral Dissertation Improvement Grant. 2010. ($14,923)

Burroughs Wellcome Ecology and Evolution Travel Scholarship. 2010

SICB Annual Meeting 2010 Student Travel Support. 2010

Montana Ecology of Infectious Diseases IGERT Small Grant. 2009. ($2,500)

Ecology and Evolution of Infectious Diseases Graduate Travel Award. 2009, 2010

David C. Grant Travel Award. 2005

*Teaching and Mentoring*

**Disease Ecology and Evolution** (Biol 184L). Instructor. New upper-level course with lab.

**Introductory Biology** (Biol 44L). Lecture and Laboratory Instructor.

**Biology of Infectious Disease** (Biol 63L). New non-majors course with lab.

**Research Tools in Organismal Biology** (Biol 120). Team-taught ½ credit course.

**Natural Science Research I** (Biol 196). Mentor to several independent research students each semester.

**Introduction to Public Health** (CGH 001). New course in Fall 2023. Team-taught, interdisciplinary, human centered design course.

**Senior thesis advisor and reader.** 3-8 students each semester.

**Summer Research Mentor.** 2-4 students each summer.

*Service*

5C’s Committees:

**Academic Standards Committee.** Pitzer College. 2023-present.

**Tenure-Track Faculty Search Committee (Functional Morphology).** Department of Natural Sciences. Fall 2023.

**Visiting Faculty Search Committee (Bio44).** Department of Natural Sciences. Fall 2023.

**W.M. Keck Science Department Executive Committee.** Elected Fall 2022-present.

**Student Affairs BOT Representative.** Pitzer College. 2022-present.

**Sustainability Committee Faculty Representative.** Pitzer College. 2022-2023.

**W.M. Keck Science Department Executive Committee.** Elected Fall 2019 - Spring 2021.

**Search Committee Member.** W.M. Keck Science Department.Visiting Biostatistics Instructor. Fall 2021.

**Ad Hoc Committee on Course Evaluations.** W.M. Keck Science Department. Fall 2020.

**Curriculum Committee.** W.M. Keck Science Department. 2019-2020.

**Judicial Council Member.** Pitzer College. 2019-2021.

**W.M. Keck Seminar Series Co-organizer.** Fall 2018-Spring 2020.

**Visiting Faculty Search Committee (Bio44).** W.M. Keck Science Department. Fall 2018.

5C’s Community Engagement Activities:

**Decemberfest.** Faculty panelist for high school counselors.Pitzer College.Fall 2023

**Panelist for Pitzer Admitted Students Weekend.** Spring 2023.

**Interviewed for Scripps Voice article.** *Innovation at Keck: Spotlighting Dr. Sarah Budischak.* Spring 2023.

**Scripps College Mock-Class for Prospective students.** *Intro to Ecology*. Fall 2022

**DEI Intern Keck Open House Participant.** Spring 2022, Fall 2022.

**Fulbright Interviewer.** Fall 2022.

**Scripps College Parents Weekend Talk.** *Why Disease Ecology and Evolution?* Spring 2022

**Scripps College Academy STEAM Program Workshop leader.** Modeling COVID – An intro to epidemiology. April 2021.

**Claremont McKenna Parents Weekend Talk.** *The next pandemic?* Spring 2021.

**Pitzer College Parents Weekend Talk.** *The next pandemic?* Spring 2021.

**Scripps College Academy STEAM Program Workshop.** *Modeling COVID – An intro to epidemiology.* Spring 2021.

**Host for “Picture a Scientist**” discussion on women in science issues with director Manette Pottle. Fall 2021.

**Scripps This Summer.** *Meet a Disease Ecologist*. Summer 2020.

**PRAXIS in a Pandemic**: How we will teach you art, photography, media studies, language, and science in your living room. Pitzer College. Panelist representing Keck Science. Summer 2020.

**Writing Tips and Tricks from Your Pitzer Professors**. Contributed writing tip video. Summer 2020.

**Faculty Voices: Pitzer faculty reimagine the virtual classroom**. Interviewee. Summer 2020.

**Presentation to Pitzer Board of Trustees.** *Beyond the norm: variation and the spread of infectious diseases.* Spring 2020.

**PAS Faculty in Residence Seminar.** *Predicting Pandemics*. Pitzer College. Spring 2020.

Beyond the 5C’s:

**Co-organizer of the SICB Southwest Regional Meeting of Organismal Biologists (SWOB).** Claremont Colleges. Fall 2023.

**Co-organizer of Teaching Disease Ecology session.** Ecology and Evolution of Infectious Diseases (EEID) Conference. May 2023.

**Ph.D. Committee Member.** Katy Wearing (advised by K. Forbes). University of Arkansas. 2023-present.

**Ph.D. Committee Member.** Christina Fragel (advised by C. Cressler). University of Nebraska. 2023-present.

**Ph.D. Committee Member.** Alexis Beagle (advised by C. Cressler). University of Nebraska. 2020-2023 (project topic changed).

**Guest Scientist** (with Keck Science summer research undergraduates).Environmental Nature Center’s summer camps for children. Summers 2019, 2021, 2022

**NSF Ad Hoc Grant Reviewer.** Physiological Mechanisms and Biomechanics (PMB) Program. 2022.

**President /Vice President.** Ecological Society of America, Disease Ecology Section. Elected 2019-2021 (position rotated from VP to President in August 2020).

**Organized “Infectious Lessons” symposium** on teaching disease ecology and evolution for the Ecological Society of America annual meeting in August 2021. My work included formally proposing the session to ESA, finding speakers, and chairing the session.

**NSF Ad Hoc Grant Reviewer.** NSF CAREER grant proposal. Division of Environmental Biology. 2021.

**NSF Grant Review Panelist.** Integrative Organismal Systems (IOS) proposals from the Integrative Ecological Physiology Program. 2020.

**Secretary-Treasurer.** Ecological Society of America, Disease Ecology Section. Elected 2016- 2019

**Student Poster Judge.** Society for Integrative and Comparative Biology. Division of Ecoimmunology and Disease Ecology. 2019.

**Reviewer** for: American Naturalist, Biology Letters, Canadian Journal of Zoology, Environmental Toxicology & Chemistry, Evolution, Functional Ecology, International Journal for Parasitology, Journal of Animal Ecology, Molecular Ecology Resources, Parasitology, Pathogens, PLOS Biology, PLOS One, Proceedings of the Royal Society – B, Royal Society Open Science, Veterinary Pathology

*Invited Talks and Professional Meetings*

**SICB - Southwest Regional Meeting of Organismal Biologists.** Claremont Colleges, 2023.

H. Chan\*, E. Pellegrini\*, S.A. Budischak. Nematode infections in Finnish bank voles (talk)

C. Molina\*, S.A. Budischak, E. Ferree. Suburban landscapes as winter habitat for migratory birds. (talk)

**Ecology and Evolution of Infectious Diseases Annual Meeting.** State College, 2023.

S.A. Budischak, C. Thomason, T. Ezeonu\*, T. Aladesuru\*, K. Grannum, T. Mehta\*, R. Barre, T. Hansen, A.B. Pedersen, A.L. Graham. Heterogeneity in infection and fitness costs of nematode infection in *Peromyscus* mice. (poster)

**SICB - Southwest Regional Meeting of Organismal Biologists.** CSU San Bernadino, 2022.

S.A. Budischak, C. Thomason, T. Hansen, R. Barre and A.L. Graham. Costs of Nematode infection: coinfection and survival. (talk)

A. Dunn\*, F. Melnikoff\*, S.A. Budischak. Within-host competition among parasitic nematodes (5-min spark talk)

M. Galbreath\*, E. Ferree, and S.A. Budischak. (5-min spark talk) (**best student presentation award)**

A. Shing\* D. Robinson, and S.A. Budischak. (5-min spark talk)

**SICB - Southwest Regional Meeting of Organismal Biologists.** Chapman University, 2021.

E. Runquist\*, S.A. Budischak. Developing a Microbial Killing Assay for *Peromyscus maniculatus*. (talk)

**Ecological Society of America,** Annual Meeting (virtual), 2021

**Ecological Society of America,** Annual Meeting (virtual), 2020

**Invited Talk:** Fueling defense? Resources and macroparasite coinfections. University of Arkansas. Fall 2019.

**Invited Talk:** Disease Ecology across scales.Harvey Mudd College. Spring 2019.

**Ecology and Evolution of Infectious Diseases, Annual Conference**, 2019. Princeton, NJ.

**Society for Integrative and Comparative Biology Annual Meeting**, 2019

S.A. Budischak, A.L. Graham and C. Cressler. Fueling Defense; Resources & the Evolution of Tolerance to Macroparasite Infection. (invited symposium talk)

**McNair Scholars Research Conference**, University of New Mexico, 2018

D. Payne\*, S.A. Budischak, C. Thomason, A.L. Graham. Growth stunting and intestinal parasites in wild mice. (Poster)

**Miramontes Arts and Sciences Program Welcome Back Undergraduate Research Symposium,** University of Colorado Boulder, 2018

D. Payne\*, S.A. Budischak, C. Thomason, A.L. Graham. Growth stunting and intestinal parasites in wild mice. (3 minute ‘Flash’ presentation)

*Professional Development*

**Teaching workshops:**

 Flexibility and Structure. CTL. 8/2023

Community Based Teaching. CTL. 9/2022

Ungrading. CTL. 4/2022

HIVE 5C Faculty Event: Surfing Waves of Uncertainty. 8/2020

Course Design Institute. 3-day intensive workshop. CTL. 7/2020

Facilitating Engaged Learning in Virtual Classes Workshop (Minerva Schools). 6/2020

Agile Teaching For Whatever's Next. CTL. 6/2020

Intermediate Zoom workshop (Scripps). CTL. 3/2020

Gateway Courses. CTL. 10/2019

Advising Undergraduate Researchers. CTL. 2/2019

The Transparent Teaching Toolkit. CTL. 8/2018

**Diversity, Equity and Inclusion:**

Queer and Trans Allyship Workshop. QRC. 9/2023.

SICB Decolonizing Science Workshop. 9/2022

Latinx Student Lunch. CTL.10/2019

Teal Dot Training (Bystander engagement) - 8/2019

SCORE Allyship Training: Supporting Transgender & Non-binary Students - 4/2019

Southern California PKAL Meetingworkshops: Inclusive Office Hours and Addressing Challenges of Inclusive Teaching - 3/2019.

Creating a Supportive Classroom. CTL. 10/2018

**Macroecology of Infectious Diseases - RCN.** 2014-2020

Collaborative research investigating global patterns of parasite infection and disease emergence.

**Infectious Disease Evolution Across Scales - RCN.** 2015-2019

 Network facilitating cross-scale disease research.

**Southern California PKAL regional network meeting**. “Teaching Every Student: Practical Tools for STEM Education" (3/2019).

**QUBES – Swirl for Teaching R in Undergraduate Biology**. Faculty Mentoring Network course. Fall 2019