

Kelly Weinersmith
Rice University
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www.weinersmith.com

EDUCATION

Ph.D. Ecology **2007 - 2014**

University of California, Davis, Graduate Group in Ecology

Dissertation: Reciprocal interactions between host behaviors, steroid hormones, and parasites.

Major Advisor: Dr. Andrew Sih

M.S. Ecology, Evolution, and Conservation Biology **2005 - 2007**

Bowling Green State University, Bowling Green, OH

Thesis: Individual differences in activity and responses to a predator attack in juvenile smallmouth bass (*Micropterus dolomieu*)

Major Advisors: Dr. Daniel Wiegmann and Dr. Jeffrey Miner

B.S. Honors in Biology **2000 - 2004**

Bowling Green State University, Bowling Green, OH

Major: Biology

Minor: Chemistry

Honors Thesis: Modified synthesis of epigallocatechin-3-gallate for use as an anti-tumor compound

EMPLOYMENT HISTORY

2017 - Adjunct Assistant Professor, Department of BioSciences, Rice University

2024 – 2027 Research Associate, Smithsonian Environmental Research Center

2017 - 2020 Visiting Assistant Researcher, MBRD, University of California San Diego

2015 - 2016 Huxley Fellow, Department of BioSciences, Rice University

NON-ACADEMIC WRITING

Weinersmith KL and Weinersmith ZA (March 8, 2024*). A City on Mars: Have We Really Thought This Through? BBC Science Focus. <https://www.sciencefocus.com/space/is-a-mars-base-practical>

*Article appeared in the print edition of BBC Science Focus magazine as well.

Weinersmith ZA and **Weinersmith KL**. (January 21, 2024) Space Isn't the Final Frontier. Foreign Policy. <https://foreignpolicy.com/2024/01/21/space-isnt-the-final-frontier/>

Weinersmith **KL** and Weinersmith ZA. (December 27, 2023*) The Beautiful Desolation of Life on Mars — On Earth. The New York Times.

<https://www.nytimes.com/2023/12/27/opinion/mars-simulation-desert-mdrs.html>.

*Article appeared in the print edition of the NYTimes as well.

Weinersmith KL and Weinersmith ZA. (November 9, 2023) Sorry, Billionaires. Space Won't Be Our Climate Haven. Atmos. <https://atmos.earth/sorry-billionaires-space-wont-be-our-climate-haven/>

Weinersmith KL and Weinersmith ZA. (November 7, 2023) *A City on Mars: Can we settle space, should we settle space, and have we really thought this through?* *Penguin Press* (US), *Penguin Random House* (UK), *Blackie Books* (Spanish translation for release in Spain), *WeLearn* (Thai translation), *Insignis* (Polish translation), *Riva Verlag* (German translation) and *Hangzhou Blue Lion* (Simplified Chinese characters translation for release in mainland China).

New York Times Bestseller • A *New York Times* Book Review Editor's Choice • A *Barnes & Noble's Best Science & Nature Books of 2023* • Nominated for the *Los Angeles Times* 2023 Book Prize for in the Science & Technology category • Nominated for a Hugo in the Best Related Works category • *Scientific American's* #1 Book for 2023 • A *Times* Best Science and Environment Book of 2023

Weinersmith KL and Weinersmith ZA. (November 5, 2023) *Space Billionaires Should Spend More Time Thinking About Sex*. *The New York Times*.

<https://www.nytimes.com/2023/11/05/opinion/space-billionaires-sex.html>

This essay discusses how little we know about how reproduction and development on Mars is likely to go, and the ethical implications of starting a space settlement before this work is done.

Weinersmith ZA and Weinersmith KL. (September 9, 2023). Book review of Laura Trethewey's *The Deepest Map*. *Foreign Policy*. <https://foreignpolicy.com/2023/09/09/book-review-the-deep-map-oceans-seabed-conservation-mining/>

Weinersmith ZA and **Weinersmith KL**. (2020). *Fuga Dal Pianeta Terra* (Escape from Planet Earth). *Wired Italy*. *Written in English, translated to Italian*.

Weinersmith KL. *The Other Animals*. (2019) Audible. Edited by Rachel Hamburg.

This was a piece of short fiction, available as an audiobook.

Weinersmith KL and Weinersmith ZA. (2017) *Soonish: Ten Emerging Technologies That'll Improve and/or Ruin Everything*. *Penguin Press* (US), *Penguin Random House* (UK).

**NYTimes* Bestseller. Featured on *NPR's Science Friday*, *NPR's Marketplace*, *Science*, *Nature*, *Forbes*, *Wired*, *Smithsonian Magazine*, *Freakonomics*, *Wired*, *Scientific American*, *The Wall Street Journal*, *Popular Science*, *Slate*, *Time Magazine*, *The Guardian*, *BBC Wales*, *C-SPAN*, and more. Translated into >10 languages.

Weinersmith KL and Weinersmith ZA. (October 14, 2017) *The perils of augmented reality*.

Boston Globe. <https://www.bostonglobe.com/ideas/2017/10/14/the-perils-augmented-reality/o8xQtfulwfsQ5urFrqyBDM/story.html>

ACADEMIC WRITING

*Indicates author is a high school, undergraduate, or graduate student I mentored or co-mentored.

Weigmann DD, **Weinersmith KL**, Baylis JR, Newman SP, Angeloni LM (in press). Null models confirm nest site fidelity by male smallmouth bass, *Micropterus dolomieu*. *BMC Zoology*.

Stegens E*, Weigmann DD, Angeloni LM, Baylis JR, Laroche RAS, Newman SP, Egan SP, Sass GG, **Weinersmith KL** (2024). Mark-recapture surveys impact nest site fidelity but not reproductive timing of male smallmouth bass. *North American Journal of Fisheries Management* 44 (1): 132-144. <https://doi.org/10.1002/nafm.10964>

Weinersmith KL, Weinersmith ZA, Abramitzsky R, Lehr J (2024). To each according to their space-need: Communes in outer space. *Space Policy* 67: 101592.
<https://doi.org/10.1016/j.spacepol.2023.101592>

Weinersmith KL, Nadler LE, Bengston E, Turner AV, Birda A*, Cobian K*, Dusto JA*, Helland-Riise SH, Terhall JM*, Øverli Ø, Hechinger RH (2023). Experimental infections with *Euhaplorchis californiensis* and a small cyathocotylid increase conspicuous behaviors in California killifish (*Fundulus parvipinnis*). *Journal of Parasitology* 109 (4): 362-376.
<https://doi.org/10.1645/23-35>

Laroche RAS*, **Weinersmith KL**, Davis ML*, Angeloni L, Baylis JR, Newman SP, Egan SP, Weigmann DD. (2023). Size-associated energetic constraints on the seasonal onset of reproduction in a species with indeterminate growth. *Oikos* 6: e09739.
<https://doi.org/10.1111/oik.09739>

Ward AKG, Bagley RK, Egan SP, Hood GR, Ott JR, Prior KM, Sheikh SI, **Weinersmith KL**, Zhang L, Zhang YM, Forbes AA. (2022). Speciation in Nearctic oak gall wasps is frequently correlated with changes in host plant, host organ, or both. *Evolution* 76 (8): 1849-1867.
<https://doi.org/10.1111/evo.14562>

Zhang YM, Sheikh SI, Ward AKG, Forbes AA, Prior KM, Stone GN, Gates MW, Egan SP, Zhang L, Davis C, **Weinersmith KL**, Melika G, Lucky A. (2022). Delimiting the cryptic diversity and host preferences of *Sycophila* parasitoid wasps associated with oak galls using phylogenomic data. *Molecular Ecology* 31(16): 4417-4433.
<https://doi.org/10.1111/mec.16582>

Ward AKG Busbee RW, Chen RA, Davis CK, Driscoe AL, Egan SP, Goldberg BAR, Hood GR, Jones DF, Kranz AJ, Meadely Dunphy SA, Milks AK, Ott JR, Prior KM, Sheikh SI, Shzu S-A, **Weinersmith KL**, Zhang L, Zhang YM, Forbes AA. (2022). The arthropod associates of 155 North American cynipid oak galls. *Zoological Studies* 61 (57). doi:10.6620/ZS.2022.61-57.

Brandão-Dias PFP, Zhang YM, Pirro S, Vinson CC, **Weinersmith KL**, Ward AKG, Forbes AF, Egan SP. (2022). Describing biodiversity in the genomics era: A new species of Nearctic Cynipidae gall wasp and its genome. *Systematic Entomology* 47(1): 94-112. <https://doi.org/10.1111/syen.12521>

Press for this article in The Hill, SyFy, Houston Chronicle, Exame (Brazil), Daily Mail (U.K.), The Rice Thresher, Rice News, Futurity, International Business News, and Texas Monthly. Also featured on Houston Matters on NPR, and selected by the Royal Entomological Society for a special issue to mark the UN Biodiversity Conference (COP-15).

Nadler LE, Bengston E, Eliason EJ, Hassibi C, Helland-Riise SH, Johansen IB, Kwan GT, Tresguerres M, Turner AV, **Weinersmith KL**, Øverli Ø, Hechinger RF. (2021). A brain-infecting parasite impacts host metabolism both during exposure and after infection is established. *Functional Ecology* 35(1): 105-116. <https://doi.org/10.1111/1365-2435.13695>

Weinersmith KL, Forbes AA, Ward AKG, Brandão-Dias PFP, Zhang YM, Egan SP. (2020) Arthropod community associated with the asexual generation of *Bassetia pallida* (Hymenoptera: Cynipidae). *Annals of the Entomological Society of America* 113(5): 373-388.
<https://doi.org/10.1093/aesa/saaa009>

Helland-Riise SH, Vindas MA, Johansen IB, Nadler LE, **Weinersmith KL**, Hechinger RF, Øverli Ø. (2020). Brain-encysting trematodes (*Euhaplorchis californiensis*) decrease raphe serotonergic activity in California killifish (*Fundulus parvipinnis*). *Biology Open* (9): bio049551.

Helland-Riise SH, Nadler LE, Vindas MA, Bengston E, Turner AV, Johansen IB, **Weinersmith KL**, Hechinger RF, Øverli Ø. (2019). Regional distribution of a brain-encysting parasite provides insights on parasite-induced host behavioral manipulation. *Journal of Parasitology*. 106 (1): 188-197.

Ward AKG, Khodor OS, Egan SP, **Weinersmith KL** and Forbes AA. (2019). A keeper of many crypts: the parasitoid *Euderus set* manipulates the behavior of a taxonomically diverse array of oak gall wasp species. *Biology Letters*. 15: 20190428.

Press for this article in NYTimes, Smithsonian.com, New Scientist, Fox News, Phys.org, and Science.

Weinersmith KL, DeCarion DD, Bibian A, Young M, Sih A and Conrad JL. (2019). Diets of Largemouth Bass (*Micropterus salmoides*) in the Sacramento San Joaquin Delta. *San Francisco Bay and Watershed Science*. 17 (1): 1-16.

Weinersmith KL. (2019). What's gotten into you?: A review of recent research on parasitoid manipulation of host behavior. *Current Opinion in Insect Science*. 33: 37-42.

Egan SP, Hood GR, Zhang L, Comerford M and **Weinersmith KL** (2018). Borders on the rise: A review of the evolutionary impacts of border barriers on natural populations. *Public Policy Brief - Baker Institute of Public Policy*.

Weinersmith KL, Brown CE*, Clingen KB*, Jacobsen M*, Topper LB* and Hechinger RF. (2018). *Euhaplorchis californiensis* cercariae exhibit positive phototaxis and negative geotaxis. *The Journal of Parasitology* 104: 329-333.

Egan SP, **Weinersmith KL**, Liu SM*, Ridenbaugh RD, Zhang YM and Forbes AA. (2017). Description of a new species of *Euderus* Haliday from the southeastern United States (Hymenoptera, Chalcidoidea, Eulophidae): the crypt-keeper wasp. *Zookeys* 645: 37-49.

Weinersmith KL, Liu SM*, Forbes AA and Egan SP. (2017). Tales from the crypt: a parasitoid manipulates the behavior of its parasite host. *Proceedings of the Royal Society B* 284: 20162365.

Press for this article in National Geographic, Nature, Science, BBC World, CBS, Gizmodo, New Scientist, Live Science, Popular Science, The Atlantic, and more. F1000 Recommended Article.

Barber I, Mora AB, Payne EM, **Weinersmith KL**, and Sih A. (2017). Parasitism, personality and cognition in fish. *Behavioural Processes* 141: 205-219.

Weinersmith KL and Earley RL. (2016). Better with your parasites? Incorporating lessons from evolved dependence and conditionally helpful parasites to behavioural ecology. *Animal Behaviour* 118: 123-133.

Weinersmith KL, Hanninen AF*, Sih A, McElreath R and Earley RL (2016). The relationship between handling time and cortisol release rates changes as a function of brain parasite densities in California killifish. *Journal of Fish Biology* 88: 1125-1142.

- Renick VC, **Weinersmith KL**, Vidal-Dorsch DE and Anderson TA. (2016). Effects of a pesticide and a parasite on neurological, endocrine, and behavioral responses of an estuarine fish. *Aquatic Toxicology* 170: 335-343.
- Conrad JL, Bibian AJ, **Weinersmith KL**, DeCarion D, Young MJ, Crain P, Moyle PB and Sih A (2016). Invasion of Brazilian waterweed (*Egeria densa*) facilitates expansion of an estuarine population of largemouth bass (*Micropterus salmoides*). *Transactions of the American Fisheries Society* 145: 249-263.
- Johnson EL, **Weinersmith KL** and Earley RL (2016). Changes in the reproductive physiology of mangrove rivulus *Kryptolebias marmoratus* following exposure to environmentally relevant concentrations of ethinyl estradiol. *Journal of Fish Biology* 88: 774-786.
- Weinersmith KL** and Faulkes Z (2014). Parasitic manipulation of hosts' phenotype, or how to make a zombie-an introduction to the symposium. *Integrative and Comparative Biology* 54: 93-100.
- Weinersmith KL**, Warinner CB*, Tan V*, Harris DJ, Mora AM, Kuris AM, Lafferty KD and Hechinger RF (2014). A lack of crowding? Body size does not decrease with density for two behavior-manipulating parasites. *Integrative and Comparative Biology* 54: 184-192.
- Ferrari MCO, Ranåker L, **Weinersmith KL**, Young MJ, Sih A and Conrad JL (2014). Effects of turbidity and an invasive waterweed on predation by introduced largemouth bass. *Environmental Biology of Fishes* 97: 79-90.
- Conrad JL, **Weinersmith KL**, Brodin T, Saltz JB and Sih, A (2011). Behavioural syndromes in fish: a review with implications for ecology and fisheries management. *Journal of Fish Biology* 78: 395-435.
- Cote J, Fogarty S, Brodin T, **Weinersmith KL** and Sih A (2011). Personality-dependent dispersal in the invasive mosquitofish: group composition matters. *Proceedings of the Royal Society, Series B* 278: 1670-1678.
- Cote J, Fogarty S, **Weinersmith KL**, Brodin T and Sih A (2010). Personality traits and dispersal tendency in the invasive mosquitofish (*Gambusia affinis*). *Proceedings of the Royal Society, Series B* 277: 1571-1579.
- Press for this article in Nature's Research Highlights and in Conservation Magazine.*
- Wiegmann DD, **Weinersmith KL** and Seubert SM (2010). Multi-attribute mate choice decisions and uncertainty in the decision process: a generalized sequential search strategy. *Journal of Mathematical Biology* 60 (4): 543-572.
- Smith KL**, Miner JG, Wiegmann DD and Newman SP (2009). Individual differences in exploratory and antipredator behaviour in juvenile smallmouth bass (*Micropterus dolomieu*). *Behaviour* (146): 283-294.

SELECTED PODCAST INTERVIEWS

CBC's The Sunday Magazine with Piya Chattopadhyay (July 14, 2024). <https://www.cbc.ca/listen/live-radio/1-57-the-sunday-magazine/clip/16081365-the-case-colonizing-space>

The Hub with David Speer (May 30, 2024). <https://thehub.ca/podcasts/on-mars-it-will-be-even-harder-kelly-weinersmith-on-the-challenges-and-opportunities-of-settling-space/>

Clear + Vivid with Alan Alda (April 29, 2024). <https://clear-vivid-with-alan-alda.simplecast.com/>

Nature Hits the Books (Nature's podcast) with Benjamin Thompson. April 19, 2024. <https://www.nature.com/articles/d41586-024-01158-6>

Let's Learn Everything with Ella, Tom, and Caroline. March 14, 2024. <https://maximumfun.org/episodes/lets-learn-everything/58-kelly-zach-weinersmith-mars-ecology-and-space-communes/>

Reversing Climate Change with Ross Kenyon. March 7, 2024. <https://nori.com/podcast-episodes/space-settlements-climate-change-zach-kelly-weinersmith-a-city-on-mars>

Wild with Sarah Wilson. March 5, 2024. <https://shows.acast.com/62538867ad55de001281af36/episodes/elly-weinersmith-why-settling-mars-is-a-really-dumb-idea>

Chatter: The Lawfare Podcast with Scott Anderson. January 25, 2024. <https://www.lawfaremedia.org/article/chatter-a-city-on-mars-with-dr.-kelly-and-zach-weinersmith>

Savage Lovecast with Dan Savage. December 21, 2023. <https://savage.love/lovecast/2023/12/21/sex-politics-25-a-city-on-mars/>

Factually... with Adam Conover. November 15, 2023. <https://www.youtube.com/watch?v=dZ08Bz6TNml>

Mindscape with Sean Carroll. November 13, 2023. <https://www.preposterousuniverse.com/podcast/2023/11/13/256-kelly-and-zach-weinersmith-on-building-cities-on-the-moon-and-mars/>

The Space Show with David Livingston. November 12, 2023 & July 25, 2021. <https://www.thespaceshow.com/guest/dr.-kelly-weinersmith>

Planetary Radio (by the Planetary Society) with Mat Kaplan. November 8, 2023. <https://www.planetary.org/planetary-radio/2023-a-city-on-mars>

Zombified with Athena Aktipis and Dave Lundberg-Kenrick. July 4, 2023. <https://zombified.fireside.fm/parasitized>

Freakonomics Radio with Stephen Dubner. November 29, 2017. <https://freakonomics.com/podcast/are-we-running-out-of-ideas/>

The Guardian's Science Weekly Podcast with Ian Sample. November 15, 2017. <https://www.theguardian.com/science/audio/2017/nov/15/tomorrows-technology-from-asteroid-mining-to-programmable-matter-science-weekly-podcast>

RADIO INTERVIEWS

KUER (Salt Lake city) - RadioWest with Doug Fabrizio March 26, 2024. Is it actually a good idea to colonize Mars? <https://radiowest.kuer.org/show/radiowest/2024-03-26/is-it-actually-a-good-idea-to-colonize-mars>

Australian Broadcasting Corporation (ABC) - Conversations with Richard Fidler. March 17, 2024. Sex, law, and life on Mars. <https://www.abc.net.au/listen/programs/conversations/kelly-weinersmith-life-on-mars-elon-musk/103519898>

NPR – All Things Considered with Scott Detrow. March 10, 2024. Why NASA wants human guinea pigs to test out Martian living. <https://www.npr.org/2024/03/10/1237298886/why-nasa-wants-human-guinea-pigs-to-test-out-martian-living>

Bloomberg Businessweek. January 18, 2024. <https://www.bloomberg.com/news/audio/2024-01-18/bloomberg-businessweek-apple-upgraded-by-bofa-podcast>

KPCW – Cool Science Radio with Lynne Ware Peek and Katie Mullaly. December 21, 2023. Is living in space a real possibility or just billionaires' folly? <https://www.kpcw.org/show/cool-science-radio/2023-12-21/is-living-in-space-a-real-possibility-or-just-billionaires-folly>

KERA (North Texas' PBS and NPR member station) – Think with Kryz Boyd. November 27, 2023. You don't want to live on Mars. <https://think.kera.org/2023/11/27/you-dont-want-to-live-on-mars/>

Utah Public Radio – Access Utah with Tom Williams. November 20, 2023. 'A City on Mars' with Kelly Weinersmith on Monday's Access Utah. <https://www.upr.org/show/access-utah/2023-11-20/a-city-on-mars-with-kelly-weinersmith-on-mondays-access-utah>

Houston Public Media – Houston Matters with Michael Hagerty. November 7, 2023. We still have a long, long way to go before there's ever 'A City on Mars'. <https://www.houstonpublicmedia.org/articles/shows/houston-matters/2023/11/07/468709/we-still-have-a-long-long-way-to-go-before-theres-ever-a-city-on-mars/>

CBC Radio – Quirks and Quarks with <http://www.cbc.ca/radio/quirks/u-s-scientists-turn-north-for-help-making-tomatoes-great-again-and-more-1.3954868/the-mind-control-of-the-crypt-keeper-wasp-1.3954965>

BBC's Radio 4 – Free Thinking with Rana Mitter. October 27, 2017. <https://www.bbc.co.uk/programmes/b09fp701>

NPR's Science Friday with Ira Flato. October 27, 2017. <https://www.sciencefriday.com/articles/if-a-robot-offers-you-a-cookie/>

KGNU (Boulder-Denver) – How on Earth with Shelley Schlender. October 24, 2017. <https://howonearthradio.org/archives/6249>

NPR's Marketplace with Kai Rysdal. October 17, 2017. <https://www.marketplace.org/2017/10/17/tech/economics-future-technology-explained-comics/>

GRANTS, FELLOWSHIPS, AND AWARDS

2018 [Genentech grant awarded to Egan and Weinersmith](#)

NSF Award #IOS-1755421: “Collaborative Research: Expression and dynamics of reproductive tactics in a wild population of smallmouth bass”. Co-PIs: Wiegmann, Egan, and Weinersmith

2015 Huxley Faculty Fellowship in Ecology and Evolutionary Biology from Rice University

2013 National Science Foundation symposium funding [IOS #1338574]
Awarded for “Meeting: SICB 2014 parasitic manipulation symposium, Austin, Texas 3-7 January 2014”. Lead PI: Zen Faulkes (\$12,238)

2012 American Society of Parasitologists Outstanding Student Paper Award
Awarded for talk entitled “Two manipulative trematode parasites modify the physiology and behavior of California killifish (*Fundulus parvipinnis*)”

American Association of University Women Dissertation Fellowship
Parasites and personality: Interactions between the behavior and physiology of hosts and their parasites (\$20,000)

UCD and Humanities Graduate Research Award in Ecology (\$1,500)

UCD Graduate Group in Ecology Block Grant Fellowship (2 quarters)

2011 National Science Foundation Doctoral Dissertation Improvement Grant [IOS #1110639]

Dissertation Research: Reciprocal interactions between host behaviors, steroid hormones, and parasites (\$14,600)

Animal Behavior Society Student Research Grant

Parasites and personality: Behavioral and hormonal interactions between California killifish and their behaviorally manipulative trematode parasites (\$1,500)

SciFund Challenge Round 1: An Experiment in Crowdfunding

Zombie Fish (\$5,000): My proposal received popular press attention from LiveScience.com, prominent science bloggers and journalists Ed Yong and Carl Zimmer, and my video proposal received over 27,000 views from members of the general public.

University of California Davis Department of Environmental Science and Policy Travel Grant (\$1,000)

2010 UCD Graduate Group in Ecology Block Grant Fellowship (2 quarters)

2009 Natural Reserve System Mildred E. Mathias Graduate Student Research Grant (\$1,500)

UCD Peter J. Shields and Henry A. Jastro Research Fellowship (\$1,500)

2008 University of California Davis Department of Environmental Science and Policy Travel Grant (\$1,000)

2007 UCD Graduate Group in Ecology Block Grant Fellowship (4 quarters)

SERVICE AND LEADERSHIP

OUTREACH

- 2021 – present** Daniel and Jorge Explain the Universe
I guest host ~1 episode per month.
- 2017 – present** Cards Against Humanity Science Ambassador Scholarship
Board Member for the Science Ambassador Scholarship, which is a full-tuition scholarship for women in STEM.
- 2022** 34th National Convention of the American Society of Engineers of Indian Origin
Panelist in the Space Access & Tourism session.
- 2021** National Youth Science Foundation’s STEM Seminar Series (March 2021)
Gave a virtual lecture plus Q&A entitled: Careers in Parasitology & Nature’s Zombie Makers
- American Society of Parasitologists Parasite Week (March 2021)
Gave a virtual zoom lecture on parasitism to a class of high school students in Florida, and answered their questions about careers in parasitology.
- 2011-2019** Science...sort of podcast
Science podcast co-host.
- 2019** Lecture for Charlottesville Master Naturalists class (April 2019)
- “Town Hall” at the University of Oklahoma (November 2019)
“How Soonish Taught Me That Most of My Opinions Are Wrong”
- Skype Question and Answer Sessions with Students
Session with Cris Hawken’s high school classroom
Session with Mark Martin’s college classroom
- 2018** Kids’ Tech University at Bowling Green State University
Presented “When Sci-Fi Comes to Life: When Parasites Control Host Behavior” to a group of 9-12 year-olds, and mentored students through activities in the afternoon. (March 2018)
- 2017** Tales from the Crypt
Press for “Tales from the Crypt: a parasitoid manipulates the behaviour of its host” generated press from *The Atlantic*, *National Geographic*, *BBC World*, *BBE Earth*, *CBC Quirks & Quarks*, *Science*, *Nature*, *New Scientist*, *Live Science*, *Future Proof (Ireland’s NewsTalk FM radio)*, *Popular Science*, *Gizmodo*, *San Francisco Chronicle*, *Phys.org*, *The Scientist*, *CBS News*, and *Yahoo News* (among others).
- We also did a Reddit Science AMA, which had a total reach of 1.19 million people, with 4,749 people clicking through to read the answers (according to data provided by Reddit r/Science moderators).
- BASIS San Antonio North Central presentation
Gave a presentation to and fielded questions from San Antonio middle school students about my research and careers in science research.
- Comments to Journalists

Provided comments on recently published manuscript for article written by Ed Yong for The Atlantic (“How the Zombie Fungus Takes over Ants’ Bodies to Control Their Minds”).

2016 Interviewed by Science News for Students

Interviewed by Kathryn Hulick Gargolinski for an article in *Science News* Media Group’s *Science News for Students* about parasites that manipulate host behavior. The article “Real Zombies” will be released this Halloween.

Rice Civic Scientist Program

Visited Mr. Michael Tee’s AP Environmental Science class at Davis High School, and gave a talk about my journey into science and parasitology.

2015 Synapse: The University of California San Francisco Student Paper

Interviewed for article on Synapse entitled, “Renaissance woman: Kelly Weinersmith on science, outreach and family”

Interviews for popular science articles:

Buzzfeed – “6 of Nature’s Most Horrifying Mind-Controlling Parasites” by Tom Chivers

New Scientist – “Zoologger: Necrophiliac spider mite prefers its mate dead” by Agata Blaszcak-Boxe

2014 Great Adaptations – A Children’s Book About Evolution

Collaborated with a poet and an artist to share the story of how *Euhaplorchis californiensis* manipulates the behavior of California killifish. This book is aimed at getting children excited about the concepts of evolution and adaptation, and so far over 1,500 copies have been sold.

University of California San Francisco Women in the Life Sciences

I was invited to speak to the UCSF WiLS group about work-life balance, my graduate school experience, applying for postdoctoral positions, and my outreach activities.

Bay Area Science Festival

Co-hosted a live-recording of the science podcast Science...sort of, which was attended by an audience of ~40 people. I also hosted the Festival of Bad Ad Hoc Hypotheses, or BAHFest, which was attended by over 1,000 people. This festival brings people together to laugh about plausible-sounding evolutionary theories that are clearly false.

2013 #SciFund Outreach Training Course

Co-organized and taught a free, online course to train scientists on techniques commonly used for outreach. I wrote a series of blog posts on the topic for the #SciFund blog, and my efforts were featured in Slate Magazine’s Bad Astronomy blog.

K-12 Outreach

Spoke with National Honors Society students at Youngker High School about careers in science.

Australian Society of Parasitologists: Parasitologists in the Spotlight

I was an invited guest on this Google On Air Hangout, which run by the Australian Society of Parasitologists and covered the topic of parasite manipulation of host phenotype.

2011 Women in Science Panel at Geek Girl Con (Seattle, WA)

I organized and moderated a panel on women in science at a conference aimed at getting young women excited about geek culture (including geek science culture).

Adventures in Animal Behavior: A Science Event at Wonderlab (Bloomington, IN)

I organized a station where visitors (largely elementary school students and their parents) could view trematode parasites emerging from their snail intermediate hosts while learning about parasites with complex life cycles.

2008 Reviewer of the Science Framework for California Public Schools
I made general comments on the text, reviewed the information for accuracy, and made suggestions regarding recent scientific advances that may be pertinent to the curriculum.

ACADEMIC SERVICE

2008-present Manuscript review
Animal Behaviour (6/2017, 7/2019, 3/2020, 8/2020, 9/2020, 10/2021, 6/2023)
Behaviour (12/2011)
Behavioral Ecology (6/2013)
Behavioral Ecology and Sociobiology (10/2008)
Biology Letters (07/2019)
Coral Reefs (06/2021)
Current Zoology (1/2018)
Ecological Entomology (12/2017, 4/2018)
Environmental Biology of Fishes (5/2018)
Ethology (6/2020)
Evolution (3/2016)
Functional Ecology (6/2022)
International Journal of Parasitology (3/2015)
Journal of Applied Ecology (10/2018, 07/2021)
Journal of Ethology (11/2011)
Journal of Experimental Biology (3/2023)
Journal of Experimental Zoology (5/2015)
Journal of Molluscan Studies (7/2019)
Journal of Parasitology (9/2015, 6/2016, 6/2018)
Marine Biology (4/2016, 7/2016)
Nature of Science (12/2019)
Physiology & Behavior (8/2015)
PLoS One (1/2018)
Proceedings of the Royal Society B (5/2020, 5/2024)
The American Naturalist (2/2013, 1/2018)

2022 – Present American Society of Parasitologists
Newsletter Editor
Member at Large

Helminthological Society of Washington
President

2024 American Society of Parasitologists
Public Relations Committee (co-chair)

2023 American Society of Parasitologists
Ad Hoc Committee on the ASP Bernie Fried Undergraduate Student Research Grants (chair)

- 2018-2021** American Society of Parasitologists
 Public Relations Committee (co-chair)
 Newsletter Editor
 American Society of Parasitologists blog editor
 Organizer of Parasite Day 2019 (which reached ~1,370 students)
 Executive Committee Member at Large (2020-2024)
- Helminthological Society of Washington
 Member at Large
- 2017-2018** American Society of Parasitologists
 Public Relations Committee (co-chair)
 Student Awards Committee (fill-in judge for annual conference)
- 2015-2017** American Society of Parasitologists
 Student Awards Committee (member)
 Chair of the Ad Hoc Committee on Social and Digital Media
- 2013-2014** Symposium organization
 Co-organizer of symposium entitled “Parasitic manipulation of host phenotype, or how to make a zombie” for the SICB 2014 conference (Austin, TX). Talks from this symposium were featured in an article in *Science: Pennisi E* (2014). Parasitic puppeteers begin to yield their secrets. *Science* 343: 239.
- American Society of Parasitologists Communications Committee
 I co-ran the Twitter account for the American Society of Parasitologists.
- 2008-2009** Ecology Graduate Student Association (EGSA)
 Co-chair of the EGSA.
- 2007-2008** Graduate Student Senate (GSA)
 EGSA representative.
- 2006-2007** Biology Graduate Student Association (BGSA):
 President of the EGSA.
- University Committee on Ogg Science Library
 Committee member.
- 2005-2006** Graduate Student Senate
 BGSA representative.

TEACHING AND MENTORING EXPERIENCE

TEACHING

- 2018 & 2020 & 2024** Guest lecturer for Public Science Communication Seminar (NSCI 320/520 at Rice University)
 Created and presented a lecture about public science communication through the mediums of podcasts, events, and books.
- 2015-2024** Guest Lecturer for Evolution class at Rice University (BIOS 334)
 Created and presented a lecture about parasites and evolution.
- 2016** Co-instructor for Field Bird Biology Lab (EBIO 337 at Rice University)
Instructor for Lab Module in Ecology (EBIO 316 at Rice University)

Instructor for Parasitology Reading Group (EBIO 542 at Rice University)

- 2015** Co-instructor for Field Bird Biology Lab (EBIO 337 at Rice University)
Lectured, led field trips, and supervised independent research projects for this one credit hour course. A subset of students were guided through the process of creating a bird habitat restoration plan, which will be implemented at the Hogg Bird Sanctuary.
- Instructor for Lab Module in Ecology (EBIO 316 at Rice University)
I lectured and led field ecology lab experiments for this course. The students also conducted a large class project which is in review at *Parasites & Vectors*.
- 2013** Guest lecturer for Behavioral Ecology (Bowling Green State University)
Created and presented lectures on behavioral syndromes and group social behavior for this graduate student course.
- 2012** Guest lecturer for Anatomy and Physiology (University of Alabama)
Created and presented a lecture on interactions between parasites and host physiology.
- 2011** Summer Session Research Mentorship Program (University of California Santa Barbara)
Mentored 3 high school students through an intensive 6 week research program. Two students earned co-authorship on the publication being prepared from the data they collected.
- 2008** Teaching assistant for General Ecology (University of California Davis)
Moderated discussions and debates, led review sessions, and assisted in grading.
- 2007** Teaching assistant for Animal Behavior (Bowling Green State University)
Oversaw in-class experiments and assisted the students in designing and executing individual animal behavior projects.
- 2006** Guest lecturer and teaching assistant for Population and Community Ecology (Bowling Green State University)
Delivered three lectures and a series of presentations on mathematical and statistical techniques in ecology. Graded assignments associated with these presentations and course examinations.
- 2005** Teaching assistant for The Environment of Life (Bowling Green State University)
Oversaw in-class experiments and graded lab reports.

GRADUATE COMMITTEES

Graduation year

- 2024** **Robert Laroche.** *Understanding Patterns of Phenotypic Variation in a Contemporary Population and Ancient Lineage of Fish.* PhD Degree from Rice University.
- 2023** **Brian Okwiri.** *"Factors impacting survival following parental care in male smallmouth bass (Micropterus dolomieu)".* Master's Degree from Bowling Green State University.

Bennett Perry. "Exploring host-parasite interactions in the *Euhaplorchis californiensis-Fundulus parvipinnis* system". Master's Degree from Nova Southeastern University.

2021 **Mazie Lee Davis.** "Does experience influence nest characteristics or timing of reproduction by male smallmouth bass (*Micropterus dolomieu*)?" Master's Degree from Bowling Green State University.

STUDENT MENTORING

*Students are or will be co-authors on manuscripts arising from our collaborations.

2021 - 2024 Brian Okwiri* (Master's, Bowling Green State University), Erica Stegens* & Gabrielle Philips* (Undergraduate, Bowling Green State University), and Robert LaRoche* (PhD, Rice University)

Skills taught: I co-advised these students. I worked with all students to become familiar with the literature on alternative reproductive tactics, generate protocols for determines ages and growth rates of smallmouth bass from fish scales, discussed experimental design, and analyses in R.

2019 - 2021 Mazie Lee Davis* (Master's, Bowling Green State University), Brian Okwiri* (Master's, Bowling Green State University), and Robert LaRoche* (PhD, Rice University)

Skills taught: I co-advised these students. I worked with all students to become familiar with the literature on alternative reproductive tactics, generate protocols for determines ages and growth rates of smallmouth bass from fish scales, and discussed experimental design.

2018-2019 Abhinav Birda*, Jasmine Terhall*, James Riddell, Jessica Cameron, Reyna Carillo, Matthew Campos, and Khang Tong (Scripps Institution of Oceanography)

Skills taught: Video processing and quantification of fish behavior.

2017-2018 Brandon Mukogawa, Veranca Shah, Sarra Larif, Adrian Castillo, Jasmine Terhall, Abhinav Birda, Karina Cobain*, Kaia Quigg, Jennifer Dusto*, Paige Mathias, DeAundre Puritty, Morgan Prince, and Courtney (Quartz) Clark (Scripps Institution of Oceanography)

Skills taught: Video processing and quantification of fish behavior.

Sydney Cottingham* (Louisiana State University)

Skills taught: Detection of helminth parasites in lower digestive tract of lesser scaup

2016-2017 Sean Liu* (Rice University)

Skills taught: Branch dissections for the Tales from the Crypt paper

Jasmine Akiko Garcia (Scripps Institution of Oceanography)

Skills taught: Quantification of fish behavior, manuscript preparation, poster presentation.

2016 Marcella Pinnel, Alice Zhu, and Laura Nicholson* (Rice University)

Skills taught: Techniques for analyzing videos of animal behavior.

2012-2014 Jelani Grace* and Walter Smith (University of Alabama)

Skills taught: Killifish hormone collection and measurement, killifish dissection and parasite quantification, and quantification of fish behavior.

2013-2014 Cameron Calhoun*, Lee House*, Morgan Lancaster*, and Tyler King* (University of Alabama)

Skills taught: Killifish dissection and parasite quantification, and quantification of fish behavior.

- 2012-2013** Madeline Haddock* (University of Alabama)
Skills taught: Killifish hormone collection and measurement, killifish dissection and parasite quantification, and quantification of fish behavior.
- 2011-2012** Zöe Zilz (University of California Santa Barbara)
Skills taught: Killifish dissection and parasite quantification.
- 2011** Jessie Lei, Virginia Tan*, Chloe Warinner* (High school students mentored at the University of California Santa Barbara)
Skills taught: Parasite collection, killifish dissection and parasite quantification, and parasite volume measurements.

INVITED TALKS

- 2024** Planned:
ASCEND
Seattle Museum of Flight
- Completed:
- Manchester-by-the-Sea, MA Public Library: MBTS Reads 2024 Lecture – May 28, 2024
A City on Mars
- University of Nebraska: School of Biological Sciences Seminar Series – May 9, 2024
What’s Gotten Into You?: Parasite Manipulation of Host Phenotype in Two Systems
- 2024 Humans to Mars Summit – May 7, 2024
A City on Mars: A Conversation with co-author Kelly Weinersmith
- Vytah Space Business Conference (Bratislava, Slovakia)
Keynote – A City on Mars
- Rice Space Institute Spaceport Lecture
A City on Mars: Can We Settle Space, Should We Settle Space, and Have We Really Thought This Through?
- 2023** North Carolina State University: Applied Ecology Department Seminar
What’s Gotten Into You?: Parasite Manipulation of Host Phenotype in Two Systems
- 2022** Iowa City Darwin Day: Science Fest
As an invited speaker, I gave two presentations:
Welcome to Zombieland: Real Tales of Parasites Manipulating Host Behavior
Dangerous, Smelly, and Covered in Dust: The Future of Humans in Space
- 2020** Purdue University: Department of Biological Sciences
What’s Gotten Into You?: Parasite Manipulation of Host Phenotype in Two Systems
- Rockhurst University: Visiting Scholar Lecture
How Little We Know: Why Most of Our Opinions Are Probably Wrong

- University of Calgary's Host-Parasite Interactions Seminar
What's Gotten Into You?: Parasite Manipulation of Host Phenotype in Two Systems
- 2019** University of Virginia's Department of Biology EcoLunch
An unusual niche: Parasites, behavior, and a new local space for field work
- University of Oklahoma Biology Department Seminar
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.
- 2018** Bowling Green State University Biology Department Seminar
Soonish: Ten Emerging Technologies That'll Improve And/Or Ruin Everything
- University of California Merced Cognitive and Information Sciences program's Minds, Technology, and Society seminar invited speaker
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.
- University of Central Florida Department Seminar
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.
- Zombie Medicine Conference (Arizona State University)
Welcome to Zombieland: Real tales of parasites manipulating host behavior
- 2017** The Royal Institution
Spoke on two consecutive nights about our book, Soonish
- Talks at Google (NYC)
Soonish: 10 Emerging Technologies That'll Improve and/or Ruin Everything
- 2016** Rice Science Café
Talk entitled "Brain-Infecting Parasites: What can zombie-makers teach us about the brain, immune system, and behavior?" given to a general audience at the Black Labrador Pub.
- 2015** Smithsonian Magazine's Future is Here Festival
Will the zombie-makers of today yield the neuroscience drug discoveries of tomorrow? <https://www.smithsonianmag.com/videos/will-the-zombie-makers-of-today-yield-the-neur/>
- Bowling Green State University Biology Department Seminar
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.
- University of Michigan Early Career Scientists Symposium
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.
- 2014** University of California San Francisco Evolution Seminar Series
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.
- Rice University Ecology and Evolutionary Biology Department Seminar
Parasite manipulation of host phenotype: mechanisms, behavior, ecology, and evolution.

2011

University of Eastern Finland Host-Parasite Workshop

Trematode parasites manipulate the behavior and physiology of California killifish (*Fundulus parvipinnis*).

PRESENTATIONS AT PROFESSIONAL MEETINGS

Presenter's name in bold. *Denotes presentation by student I mentored or co-mentored.

Laroche RAS*, Weinersmith KL, Angeloni LM, Egan SP and Wiegmann DD (2023). Parental genotype and environment influence offspring reproductive traits in smallmouth bass (*Micropterus dolomieu*). Oral presentation. Evolution conference. Albuquerque, NM.

Laroche RAS*, Weinersmith KL, Angeloni LM, Egan SP and Wiegmann DD (2022). Parental genotype and environment influence offspring reproductive traits in smallmouth bass (*Micropterus dolomieu*). Oral presentation. Animal Behavior Society conference. Costa Rica.

Laroche RAS*, Weinersmith KL, Angeloni LM, Egan SP and Wiegmann DD (2021). The influence of energetics and competition on smallmouth bass reproductive behavior. Oral Presentation. Society for Integrative and Comparative Biology. Virtual Conference.

Weinersmith KL, Forbes AA, Ward AKG and Egan SP (2020). Tales from the crypt: A parasitoid manipulates the behavior of its gall wasp hosts. Oral Presentation. Animal Behavior Society. Virtual Conference.

Laroche RAS*, Weinersmith KL, Angeloni LM, Egan SP and Wiegmann DD (2020). The influence of energetics and competition on smallmouth bass reproductive behavior. Oral Presentation. Animal Behavior Society. Virtual Conference.

Cottingham SL, Stroud CM, England CJ, Weinersmith KL and **Ringelman KM** (2019). Gastrointestinal parasites of Less Scaup wintering in Lake Pontchartrain, Louisiana. Poster Presentation. North American Duck Symposium. Winnipeg.

Weinersmith KL (2019). "Oh! That looks fun too!" Or, how to cobble together a career when everything sounds fun. Invited Oral Presentation for the Student Symposium. Oral Presentation. American Society of Parasitologists Annual Conference. Rochester, MN.

Weinersmith KL, Ward AKG, Khodor OS, Egan SP and Forbes AA (2019). A keeper of many crypts: the parasitoid *Euderus set* manipulates the behavior of a taxonomically diverse array of oak gall wasp species. Oral Presentation. Helminthological Society of Washington Annual Conference. Winchester, VA.

Hernandez RN*, Weinersmith KL and Hechinger RF (2019). Commencing evasive maneuvers: California killifish, moe, dart, and scratch more during trematode exposure and attack. Oral Presentation. Southern California Society of Parasitologists Annual Conference.

Weinersmith KL, Nadler LE, Helland-Riise SH, Dusto J, Bengston E, Turner A, Øverli Ø and Hechinger RF (2018). The influence of *Euhaplorchis californiensis* on California killifish (*Fundulus parvipinnis*) behavior across contexts and ontogeny. Oral Presentation. American Society of Parasitologists Conference. Cancun, Mexico.

Helland-Riise SH, Turner AV, Bengston E, Vindas MA, Johansen IB, Nadler L, Weinersmith KL, Hechinger RF and Øverli Ø (2018). Behavioral differences in California killifish experimentally infected with the brain parasite *Euhaplorchis californiensis*. Oral Presentation. Society for Experimental Biology Conference. Florence, Italy.

***Cottingham SL**, Ringelman KM, Stroud CM and Weinersmith KL (2018). Gastrointestinal helminth abundance in lesser scaup (*Aythya affinis*) wintering on Lake Pontchartrain, Louisiana. Oral Presentation. American Society of Parasitologists Conference. Cancun, Mexico.

***Cottingham SL**, Ringelman KM, Stroud CM and Weinersmith KL (2018). Gastrointestinal helminth abundance in lesser scaup (*Aythya affinis*) wintering on Lake Pontchartrain, Louisiana. Oral Presentation. Southeastern Society of Parasitologists. Mississippi State University. Starkville, MS.

***Cottingham SL**, Stroud CM, Weinersmith KL, and Ringelman KM (2017). Gastrointestinal helminth abundance in lesser scaup (*Aythya affinis*) wintering on Lake Pontchartrain, Louisiana. Poster Presentation. Louisiana Wildlife Society.

Winner of the Gamma Sigma Delta's Undergraduate Research Grant Poster Award (first place) & the Agriculture Residential College Student's Choice Award.

Weinersmith KL, Liu SM, Forbes AA, and Egan SP (2016). Tales from the Crypt: A parasitoid changes emergence behavior in a crypt-forming gall wasp. Oral Presentation. American Society of Parasitologists conference.

Weinersmith KL, Renick VC, King T, Payne E, Sih A, and Earley RL. (2015). Does a brain-infecting parasite influence host behavioral type and behavioral correlations? Oral presentation. American Society of Parasitologists conference.

Weinersmith KL. Science outreach through blogging and podcasting (2015). Invited talk for the American Society of Parasitologists Students' Symposium.

Weinersmith KL, Warinner CB, Tan V, Harris DJ, Mora AB, Kuris AM, Lafferty KD and **Hechinger RF** (2014). A lack of crowding? Density does not negatively affect parasite body size for two trophically transmitted trematodes of California killifish (*Fundulus parvipinnis*). Oral presentation. American Society of Parasitologists conference.

Weinersmith KL, Hanninen AF, Sih A and Earley RL. *Euhaplorchis californiensis*, a brain-infecting trematode parasite, is associated with changes in physiology and behavior in its killifish second intermediate host (2014). Oral presentation. Society for Integrative and Comparative Biology-Symposium: Parasitic manipulation of host phenotype or how to make a zombie.

Grace J*, Haddock M, Weinersmith K & Earley RL. Parasite manipulation of host personality in California killifish (2013). Poster presentation. University of Alabama Undergraduate Research Conference.

Haddock M*, Grace J, Weinersmith K & Earley RL. Parasites and personality: do trematodes manipulate boldness in California killifish (2013)? Poster presentation. University of Alabama Undergraduate Research Conference.

Weinersmith KL, Earley RL, Hanninen AF, Hechinger RF, Kuris AM, Lafferty KD and Sih A. Two manipulative trematode parasites modify the physiology and behavior of California killifish (*Fundulus parvipinnis*) (2012). Oral presentation. American Society of Parasitologists conference. **Received the Outstanding Student Paper Award from the American Society of Parasitologists.*

Weinersmith KL, Cote J, Fogarty S, Brodin T, and Sih A. Personality matters: individual and population-level personality traits influence dispersal decisions in the invasive western mosquitofish (*Gambusia affinis*) (2011). Oral presentation. American Fisheries Society Conference: Symposium on "Cognitive, Sensory, and Behavioural Frontiers Exploring Fish Movement and Habitat Use".

Conrad JL, **Weinersmith KL**, Young MJ, de Carion D, Bibian A, Moyle PB and Sih A. Invaders helping invaders: Expansion of largemouth bass in the Sacramento-San Joaquin Delta facilitated by Brazilian waterweed, *Egeria densa* (2011). Oral presentation. American Fisheries Society Conference: Symposium on "Cognitive, Sensory, and Behavioural Frontiers Exploring Fish Movement and Habitat Use".

Weinersmith KL, Hanninen A, Sih A and Earley RL. Trematode parasites are associated with steroid hormone profiles in California killifish (2011). Oral presentation. Animal Behavior Society Conference.

Weinersmith KL, Conrad JL, Young MJ, de Carion D, Bibian B and Sih A. Does submerged aquatic vegetation effect largemouth bass diet composition and growth rates in the Sacramento-San Joaquin Delta (2011)? Oral presentation. Cal-Neva American Fisheries Society Conference: Interagency Ecological Program Symposium.

Conrad JL, Weinersmith KL, Young MJ, de Carion D, Hestir EL, Santos MJ, Crain P, Ustin SL, Moyle PB and Sih A. More big bass: understanding the role of largemouth bass as top predators of the littoral zone (2010). Oral Presentation. Bay-Delta Science Conference.

Smith KL, Wiegmann DD and Seubert S. Multi-attribute mate choice decisions and uncertainty in the decision process: A generalized sequential search strategy (2008). Oral presentation. Animal Behavior Society Conference.

Smith KL, Wiegmann DD and Seubert S. Multi-attribute mate choice decisions and uncertainty in the decision process: A generalized sequential search strategy (2008). Oral presentation. Animal Behavior Conference at the University of California Davis.

Smith KL, Wiegmann DD and Seubert S. Multi-attribute mate choice decisions and uncertainty in the decision process: A generalized sequential search strategy (2008). Oral presentation. Trout Lake Research Station Limnology and Marine Science Seminar Series.
