

JUNE 11 – JULY 2, 2020

PARASITE
HOUR

A WEEKLY VIRTUAL SEMINAR SERIES
HIGHLIGHTING THE RESEARCH OF
EMERGING PARASITOLOGISTS

THURSDAYS 1–2 PM CDT



WHAT IS PARASITE HOUR?

Parasite Hour is a unique opportunity to stay connected to our parasitological community during the time of COVID-19. It is a weekly seminar series in which emerging parasitologists share their research in the form of virtual oral presentations. Parasite Hour will take place Thursday afternoons from 1–2 PM US central time. The series will premiere on Thursday June 11th and will run for four weeks in total. Over the course of the series, ten emerging parasitologists will present their findings on a wide range of parasitological themes in the form of 12-minute talks. After each talk, those who have tuned in to watch will have three minutes to ask questions and provide feedback.

HOW CAN I TUNE IN?

Parasite Hour will be hosted via the Zoom video conferencing platform. If you are not familiar with Zoom, please visit support.zoom.us/hc/en-us to explore the online Zoom help center. (Please note: To use Zoom you must install a small plugin on your computer, so if you are new to Zoom, it is recommended that you install the plugin and familiarize yourself with the platform well in advance of the first session to ensure you do not miss any part of Parasite Hour.) Every Monday, the meeting ID & password and a link for joining that week's session will be distributed via the American Society of Parasitologists (ASP) members email listserv. These credentials will only be valid for that week's session. Please think carefully before choosing to share these credentials; ensuring the security and decorum of these sessions should be a top priority of each attendee.

Please keep your microphone and video feed off for the duration of the session so as not to distract from the presentations. Use Zoom's "applause" reaction to show appreciation for presenters after each talk, and use Zoom's "raise hand" function to indicate that you have a question during question-and-answer periods. If you are called on to ask a question, you may unmute your microphone to contribute, and then use Zoom's "lower hand" function. Alternatively, you may type your questions using the Zoom chat function.

PRESENTATION SCHEDULE

WEEK 1: ECOLOGY

JUNE 11, 2020

1. **Brandon Ruehle**–Hunger games: Resource competition in fish under the context-dependent influence of parasitism.
2. **J. Trevor Vannatta**–Use it before you lose it: A quantitative exploration of host reproduction and disease for the undergraduate classroom.

WEEK 2: EPIDEMIOLOGY

JUNE 18, 2020

3. **Jules N. Kouadio**–Prevalence and distribution of human and bovine schistosomiasis in Côte d'Ivoire: Results from a cross-sectional survey.
4. **Etienne K. Angora**–Population genetics of schistosomes in humans in Côte d'Ivoire.
5. **Jennifer Giovanoli Evack**–Genetic diversity and transmission dynamics of schistosomes in Ivorian cattle.

WEEK 3: GENOMICS & TRANSCRIPTOMICS

JUNE 25, 2020

6. **James P. Bernot**–A new phylogeny of the Pancrustacea.
7. **Perryn S. Kruth**–Dormant to deadly: A molecular investigation of gene expression in hypobiotic *Eimeria tenella* sporozoites.

WEEK 4: VARIOUS TOPICS

JULY 2, 2020

8. **Margaret L. Doolin**–Do natural parasite infections affect the microbiome of a toxin-feeding herbivore? (Host-Parasite Interactions).
9. **Jessica L. Rotolo**–Molecular and biological characterization of two new species of *Eimeria* causing clinical coccidiosis in commercial chukar partridge (*Alectoris chukar*) (Life-Cycles).
10. **Bruna Trevisan**–Genomic skimming and the systematics of Rhinebothriidae (Taxonomy & Systematics).

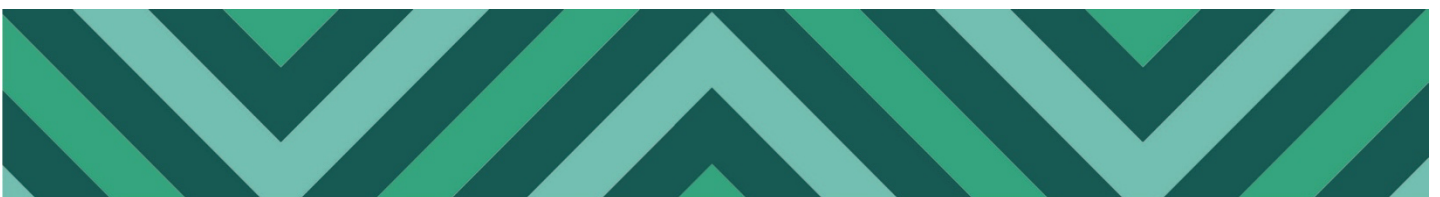
1. Hunger games: Resource competition in fish under the context-dependent influence of parasitism

Brandon Ruehle¹ and Robert Poulin¹

¹Department of Zoology, University of Otago

Graduate student
Week 1: Ecology–June 11, 2020

1. Site of infection determines the impact of two trematode taxa on competitive interactions in their fish hosts.
2. Increasing eye-fluke, *Tyloodelphys darbyi*, intensity causes the host to be closer to a food source.
3. Infection by *T. darbyi* and *Apatemon* sp. encysted throughout the body increases the probability of hosts sharing territory decreases and the likelihood of males being darker in color increases.



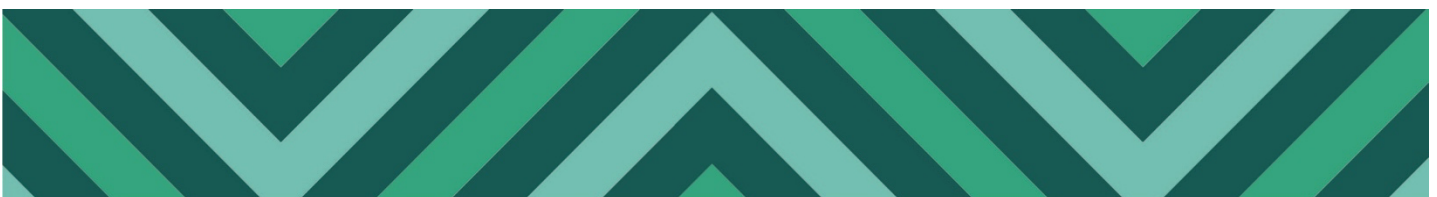
2. Use it before you lose it: A quantitative exploration of host reproduction and disease for the undergraduate classroom

J. Trevor Vannatta¹, Dennis Minchella¹ and Sarah Orlofske²

¹Department of Biological Sciences, Purdue University; ²University of Wisconsin–Stevens Point

Week 1: Ecology–June 11, 2020
Graduate student

1. Parasitology and ecology students can benefit from enhanced quantitative and theoretical skills.
2. Simulation models present a unique opportunity to visualize ecological interactions at a rapid pace.
3. We present an agent-based model developed for undergraduate classrooms.
4. Students can explore basic ecological principles, such as consumer-resources dynamics, and further explore how the addition of a castrating parasite may impact these systems.
5. The flexibility of our modelling approach not only allows students to gain an understanding of parasite ecology, but can also be adapted so that students can design and implement their own experiments anytime, anywhere using free software.



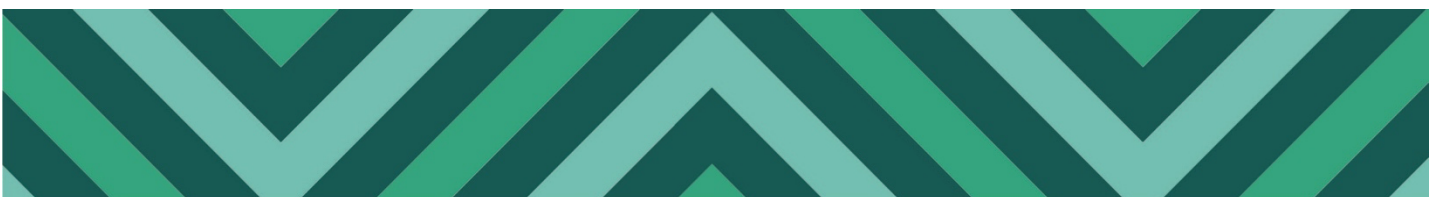
3. Prevalence and distribution of human and bovine schistosomiasis in Côte d'Ivoire: Results from a cross-sectional survey

Jules N. Kouadio¹, Jennifer Giovanoli Evack², Etienne K. Angora², Louise Y. Achi¹, Mamadou Ouattara¹, Bassirou Bonfoh¹, Jürg Utzinger², Jakob Zinsstag², Oliver Balmer² and Eliézer K. N'Goran¹

¹Department of Biosciences, Université Félix Houphouët-Boigny; ²University of Basel

Week 2: Epidemiology—June 18, 2020
Graduate student

1. Schistosomiasis remains prevalent in children and cattle in Côte d'Ivoire.
2. Prevalence of human schistosomiasis was higher in the South and West Côte d'Ivoire.
3. Prevalence of bovine schistosomiasis was higher in the northern part of the country.



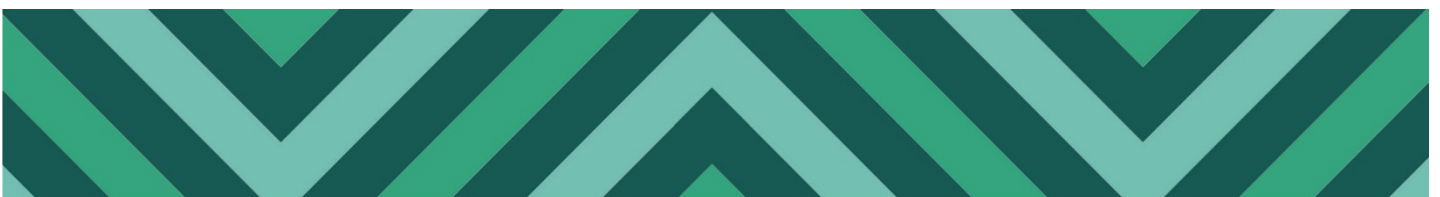
4. Population genetics of schistosomes in humans in Côte d'Ivoire

Etienne K. Angora¹, Jennifer Giovanoli Evack¹, Jules N. Kouadio², Hervé Menan², Jakob Zinsstag¹, Jürg Utzinger¹, Oliver Balmer¹ and Jérôme Boissier³

¹Department of Epidemiology and Public Health, Swiss Tropical and Public Health institute, University of Basel, Switzerland; ²University of Félix Houphouët Boigny, Côte d'Ivoire; ³University of Perpignan, France

Week 2: Epidemiology–June 18, 2020
Graduate student

1. High prevalence of *Schistosoma haematobium* x *Schistosoma bovis* hybrids is observed.
2. Pure *Schistosoma bovis* identified in humans suggest zoonotic transmission.
3. Genetic diversity and population structuring of schistosomes are reported at population level.



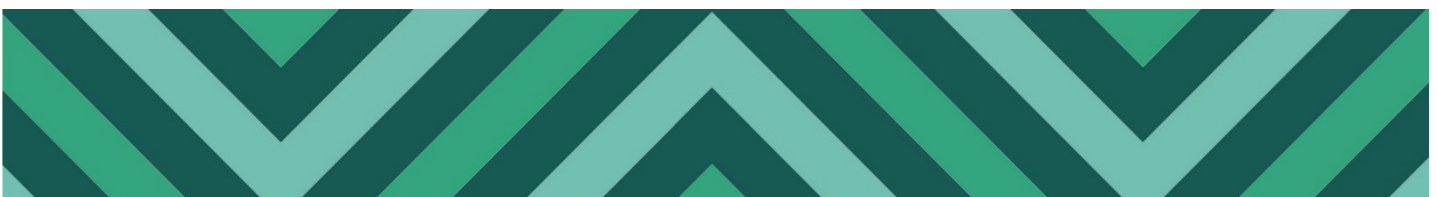
5. Genetic diversity and transmission dynamics of schistosomes in Ivorian cattle

Jennifer Giovanoli Evack¹, Jules N. Kouadio², Etienne K. Angora¹, Louise Y. Achi³, Mamadou Ouattara², Bassirou Bonfoh⁴, Walter Salzburger⁵, Eliézer K. N'Goran², Jakob Zinsstag¹, Jürg Utzinger¹ and Oliver Balmer¹

¹Swiss Tropical and Public Health Institute, University of Basel; ²Centre Suisse de Recherches Scientifiques en Côte d'Ivoire, Université Félix Houphouët-Boigny, Côte d'Ivoire; ³Centre Suisse de Recherches Scientifiques en Côte d'Ivoire, Ecole d'élevage et des métiers de la viande de Bingerville, Côte d'Ivoire; ⁴Centre Suisse de Recherches Scientifiques en Côte d'Ivoire, Côte d'Ivoire; ⁵Zoological Institute, University of Basel

Week 2: Epidemiology—June 18, 2020
Graduate student

1. Molecular species identification shows pure *Schistosoma bovis* infecting cattle in Côte d'Ivoire; no *S. bovis* x *S. haematobium* hybrids were found.
2. Genetic population structuring of schistosomes from cattle in Côte d'Ivoire are described.
3. Genetic distinction between miracidia from live farm cattle and flukes from slaughtered cattle were observed at one sampling site.



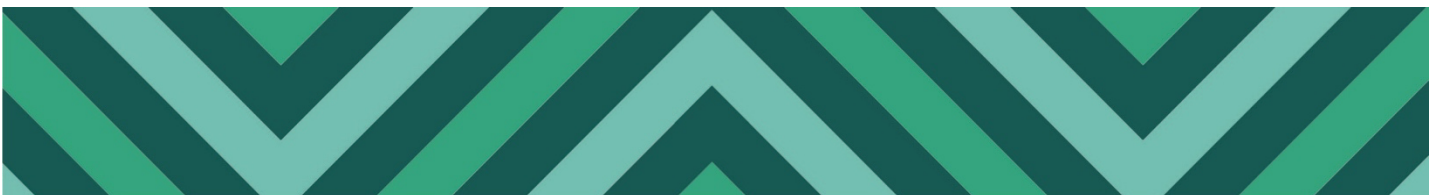
6. A new phylogeny of the Pancrustacea

James P. Bernot¹, Christopher L. Owen², Jørgen Olesen³ and Keith A. Crandall¹

¹Genomics and Bioinformatics, George Washington University; ²Systematic Entomology Laboratory, USDA; ³Natural History Museum of Denmark

Week 3: Genomics & Transcriptomics—June 25, 2020
Graduate student

1. We present a new phylogeny of the Pancrustacea based on 500 genes from 100 arthropod transcriptomes and genomes.
2. While our results support some classical higher crustacean taxa, we recover novel position for many taxa including hexapods, decapods, and copepods.
3. These results have major implications for our understanding of crustacean and hexapod evolution.



7. Dormant to deadly: A molecular investigation of gene expression in hypobiotic *Eimeria tenella* sporozoites

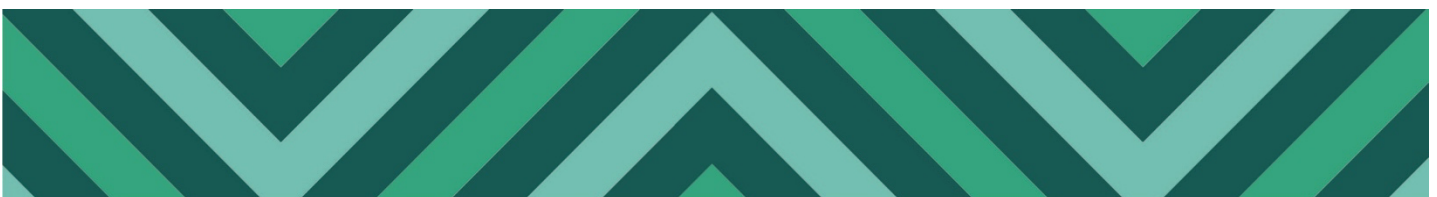
Perryn S. Kruth¹, Taylor Lane¹ and John R. Barta¹

¹Department of Pathobiology, University of Guelph

Week 3: Genomics & Transcriptomics–June 25, 2020

Graduate student

1. Hypobiosis promotes survival in both endogenous and exogenous environments and is critical to parasite transmission.
2. Oocysts of *Eimeria* spp. can persist in the environment for extended periods of time (up to years).
3. Sporozoites within oocysts are effectively sealed off from the outside world – few molecules (oxygen, water, etc.) pass through oocyst and sporocyst walls.
4. To survive for extended periods of time without outside resources, *Eimeria* sp. sporozoites must greatly decrease metabolic activity while continuing essential activities such as DNA repair.
5. We have sequenced the transcriptome of aged *Eimeria tenella* oocysts and here discuss our findings and ongoing research.



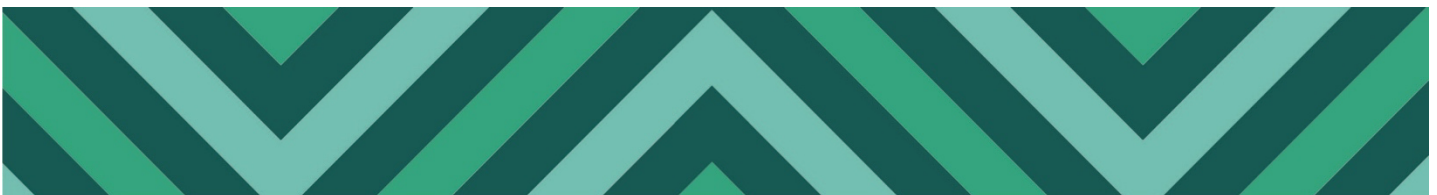
8. Do natural parasite infections affect the microbiome of a toxin-feeding herbivore?

Margaret L. Doolin¹, Sara B. Weinstein¹ and M. Denise Dearing¹

¹School of Biological Sciences, University of Utah

Week 4: Host-Parasite Interactions—July 2, 2020
Graduate student

1. White-throated woodrats (*Neotoma albigula*) in Castle Valley, UT host one nematode and one coccidian parasite.
2. Woodrat microbiomes differ between sampling seasons, and do not seem to differ based on parasite infection.
3. The woodrat system is used to explore functional implications of parasite-microbiome interactions in a wild herbivore that relies on its microbiome for essential digestive processes.



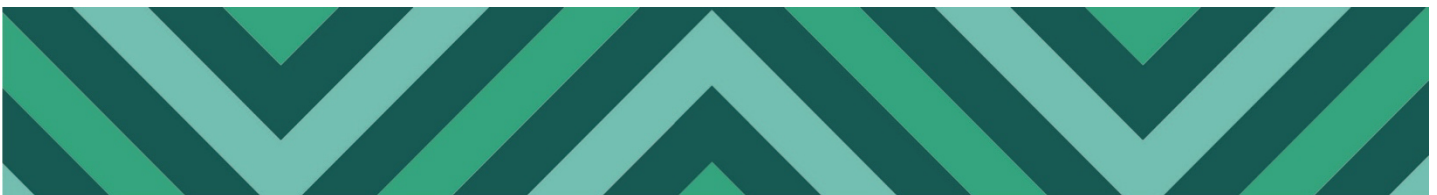
9. Molecular and biological characterization of two new species of *Eimeria* causing clinical coccidiosis in commercial chukar partridge (*Alectoris chukar*)

Jessica L. Rotolo¹, Rachel K. Imai¹, Ryan P. Snyder¹, Jean-Michel Répérant² and John R. Barta¹

¹Department of Pathobiology, University of Guelph; ²Ploufragan-Plouzané-Niort

Week 4: Life-Cycles–July 2, 2020
Graduate student

1. Two new *Eimeria* species that infect commercial chukar partridge (*Alectoris chukar*) are described.
2. Molecular and biological descriptions of each *Eimeria* species are presented.
3. Characterization of both pathogenic *Eimeria* species inform prospective methods for their control in commercial partridge flocks.



10. Genomic skimming and the systematics of Rhinebothriidae

Bruna Trevisan¹ and Fernando P.L. Marques¹

¹Department of Zoology, University of São Paulo

Week 4: Taxonomy & Systematics–July 2, 2020
Graduate student

1. Thirty-seven mitogenomes of cestodes were sequenced (27 at once single sequencing).
2. Their complete mitogenomes maps are presented.
3. The gene order of the Rhinebothriidae suggests that they are conserved.
4. Perspectives on the use of data generated by the Genome Skimming for the Rhinebothriidae systematics.

