NEWSLETTER



Edited by Kelly Weinersmith & the ASP Public Relations Committee Layout & Design by Joanna Cielocha

Welcome!

Welcome to the revamped American Society of Parasitologists Newsletter!

The Newsletter will now have four main sections: ASP Officer Messages, Member Spotlights, Field Notes (stories written by parasitologists about how we make our discoveries), and News. Timely news information, such as job announcements, will no longer appear in the Newsletter. News associated with deadlines will continue to be disseminated through ASP's list-serve, Facebook Page, and Twitter account. We will also be sharing photos from our annual and regional meetings on our Instagram account. Finally, ASP's homepage now features a blog, where we'll post Field Notes, Member Spotlights, and News on a regular basis.

If you have a story that you would like to share with us for a Field Note, or want to nominate a member for our Member Spotlight section, then please e-mail me (Kelly Weinersmith) at Weinersmith@Rice.edu

Thank You

Dr. Scott Gardner single-handedly collected ASPrelated news, formatted the newsletter, and edited the



newsletter for nearly 20 years! (20 years? What have I gotten myself into?!) The Society, PR Committee, and I would like to extend a heartfelt thanks to you, Scott, for your contributions over the years.

PRESIDENT'S CORNER

DR. JOHN HAWDON

Welcome to the President's Corner! With memories of sun, surf, and science from the meeting in Cancun in the distance, and the new semester underway, I am writing my first installment of what I hope will be an ongoing conversation with you, the membership, about the state of the ASP. I hope to use the President's Corner to keep you up to date on happenings in Council and the exciting initiatives that are underway at the ASP. Before I begin, I want to thank a few people. Thanks again to the Local Organizing Committee in Cancun, chaired by Victor Vidal-Martinez and Leo Aguirre-Macedo, for a wonderful meeting in a beautiful location. I also want to thank our Immediate Past President Susan Perkins for leaving the presidency in excellent shape. Thanks also to Secretary/Treasurer Lee Couch for her steadfast work and dedication to the Society. I also want to express my gratitude to everyone who stepped up to serve on Society committees. The strength of the Society depends on the commitment, energy, and involvement of its members. I have big plans for you, and will be contacting you soon.

We have several what I think are exciting initiatives underway in the Society, starting with the new ASP Newsletter. This is part of an overall effort to bring the ASP into the 21st century and increase our social media presence. Our newest committee, the Public Relations Committee, under the guidance and direction of co-chairs Kelly Weinersmith and Ben Hanelt, spearheads this modernization effort. In



President's Corner Cont'd

addition to the electronic Newsletter and new blog, the website is undergoing modernization, and the Committee is invigorating our Twitter and Facebook accounts with timely posts and interesting discussions. Thank you all for your efforts. I also want to take a moment to extend my appreciation and thanks to Scott Gardner for his long- time service to the Society as Newsletter Editor.

I am also excited about the changes that Rich Clopton, our new editor-in-chief, is bringing to the *Journal of Parasitology*, including a new co-publishing contract with Allen Press and a new article look, among many others. You can find more details about changes coming to the *Journal of Parasitology* below. I will just say thanks, Rich - it makes my life easier as President to know the Journal is in your capable hands.

Another big initiative underway is conversion of the ASP from 501(c)(6) to 501(c)(3) non-profit status. This has several advantages for us, including tax-exempt meetings and tax-deductible donations to the Society, which will make us more attractive to sponsors. To take advantage of this opportunity, I am charging the Business Advisory Committee with developing a Sponsorship Program for the Society to be displayed prominently on our website to help generate funds for our meetings and other programs. I also invite anyone with contacts in industry to reach out to them as potential ASP sponsors.

Another goal of mine is to increase our membership by increasing the value of an ASP membership. I am tasking the Committee on Education to work with the Membership and Public Relations Committees to develop educational resources for sharing with members in a password-protected members' only section of the website. This will include materials like parasitology course syllabi, lectures, specimens, and lab exercises that will help members develop or improve parasitology teaching. I also hope to post videos of talks and symposia in this area as a visual history of the Society, as well as other society information.

Finally, the leadership team and I are working to increase transparency and decrease costs of our meetings in an effort to stabilize our finances. Council approved, and I appointed, a committee chaired by Past President Perkins to evaluate the planning and execution of our annual meeting from start to finish. Their committee report will guide future efforts to streamline planning and decrease the cost of our meetings. I also intend to update the membership on committee efforts and Council proceedings throughout the year via this blog.

Thanks again to our members, who make the Society what it is, and as always, please reach out to me about concerns or ways to make our Society better.



The Journal of Parasitology

Upcoming Changes to The Journal of Parasitology By Kelly Weinersmith

The Journal of Parasitology (JP) is the official journal of the American Society of Parasitologists (ASP). For over 100 years JP has featured original parasite research and society news. According to the JP's editor, Dr. Richard Clopton: "Beginning in January 2019, we are relaunching The Journal of Parasitology for its second century of publication with a complete revision of our policies, charges, and distribution."

Upcoming changes will go into effect with the first 2019 volume and include:

- 1. No page charges when the corresponding author is a member of ASP.
- 2. Continuous online publication. Manuscripts will be available online as soon as the final, formatted version is available. This change will decrease turn-around time, and help JP meet its goal of a submission to publication timeline of 8-10 weeks.
- 3. Rather than creating six print publications throughout the year, we will create one ink-on-paper printing of *The Journal of Parasitology* in December of each year. *The Journal of Parasitology* will publish 6 issues online each year as before.

Also, Citation Styles for The Journal of Parasitology are now available for EndNote and Zotero.

The full text of *JP*'s new Policies and Instructions to authors can be found in Vol. 104 (4) and at the following link: http://www.journalofparasitology.org/doi/10.1645/18-93



REPORT ON THE 93RD ANNUAL MEETING OF THE AMERICAN SOCIETY OF PARASITOLOGISTS

The Marriott Cancun Resort, Mexico

June 21–24, 2018

By Kelly Weinersmith

ASP held its 93rd Annual Meeting of the American Society of Parasitologists at The Marriott Cancun Resort in Mexico on June 21-24. The views from the hotel were breathtaking, the food was delicious, and the ambiance outside was matched by amazing talks and wonderful company inside. Many thanks to ASP's Local Organizing Committee (led by Drs. Victor Manuel Vidal Martinez and Mérida Leopoldina Aguirre-Macedo) and to our Scientific Program Officers (Drs. Herman Eure and Kelli Sapp)!

President Susan
Perkins presided over
this conference. Her
President's Symposium
was themed The
"Holobiome:
Interactions Between
Parasites and the
Microbiome". The
invited speakers
discussed topics
ranging from how the
microbiome one
harbors early in life
influences the adult



ASP President Susan Perkins with Local Organizing Committee members Victor Manuel Vidal Martinez and Mérida Leopoldina Aguirre-Macedo.

immune system (Dr. Sarah Knutie), why we need to understand inter-kingdom interactions to understand disease (Dr. Derek McKay), and the role of microbes in host and parasite ecology and evolution (Dr. Nolween Dheilly).

That afternoon Dr. William Campbell gave the aptly named William B. Campbell Lecture, entitled "Ivermectin: From Mouse to a House". Dr. Campbell's work on Ivermectin won him the Nobel Prize in 2015. A collaboration with Merck and The Carter Center resulted in the dissemination of Ivermectin to treat Onchocerciasis (River Blindness), and the reduction or eliminated of this disease in several countries! Dr. Campbell predicts the elimination of Onchocerciasis from Africa between 2020-2025. He also regaled us with stories of meeting political leaders, including President Barack Obama (who gifted him the Giant Microbes heart worm!) and the King and Queen of Sweden.

The afternoon belonged to ASP's amazing students. Caroline Keroack (ASP Student Representative) presided over the ASP Students' Symposium, whose theme this year was "Field work fails (and triumphs!): How to research effectively in the Field". Dr. Janet Koprivnikar reminded us that "The worst data is that which you failed to collect & then need later on". Dr. Matt Bolek told us about the non-traditional methods (including purchasing butterflies through eBay and doing microdissections late at night at his kitchen table) he used to elucidate the life cycle of a protozoan

pathogen of butterflies. Dr. Sara Brant warned us that when doing international fieldwork, you need to know who you are and what you're capable of (e.g., can you deal with guns and political unrest in a foreign country?). Dr. Janine Caira gave advice that we should heed for all aspects of our life, including 1) Keep your sense of humor, 2) Be persistent, 3) Patience is a virtue, and 4) Identify your mistakes early...so you can correct them early. Additionally, collect where you have permits because it's great to not go to jail. The Student Symposium was followed by the Steve Upton Social for ASP Students and THE VORTEX: Science Speed Meet for Early Career Scientists.



Matt Bolek engaged in conversation with students.

The 28th Annual ASP Student Auction was presided over by Drs. Tim Ruhnke and John Hawdon, and \$7,625 was raised for student travel grants! Highly sought-after items included original artwork by Dr. John Janovy, Dr. William Campbell, and Bari Ramoy. Dr. Campbell's painting "Worms in Paradise" brought in a whopping \$1,125! Additional highlights included a visit from the conference's mascot: a giant hookworm! Many of us enjoyed getting our photos taken with the hookworm throughout the conference.

The next day Dr. James B. ("Sparky") Lok gave the Bueding & von Brand Lecture, entitled "Functional genomic study in Strongyloides and related parasitic nematodes by transgenesis and CRISPR/CAS9 mutagenesis." Dr. Lok discussed his work to develop transgenesis in Strongyloides and his investigations of the molecular biology of nematode infection and development, including successfully using CRISPR/Cas9 to edit the genome of a parasitic nematode for the first time.

ASP's President's Address was given by Dr. Susan Perkins, and was entitled "Parasitology: Diversity and Inclusion for the Future." She noted that biologists understand the importance of biodiversity, and this message should permeate our lives, as

Annual meeting report, cont'd.

diversity is important in our institutions and our lives well. Studies show that diverse groups solve problems better and faster than less diverse groups. Her message was clear - "Diversity isn't just a buzzword. It's smart." Dr. Perkins then discussed the extent to which woman have been able to take on leadership positions in ASP, and how often we reward their accomplishments. I was surprised to learn that only six of ASP's ninety-four Presidents have been women! While the percent of awards given to women ASP members is abysmally low historically, our track record for recognizing work done by the women in our society is clearly improving since 2010. While we have reason to feel good about improvements we've made, we still have work to do.

Drs. Julián Hillyer and Jonas G. King presided over the Insect-Pathogen Interaction Symposium ("Immunological and physiological interactions between insects and pathogens"). Dr. Hillyer organized this symposium by gathering together talks on a common theme from the list of submitted abstracts. The symposium was a great success, and we encourage other members to consider organizing a symposium from papers on a common theme for our 2019 meeting.



Attendees of the Insect-Pathogen Interaction Symposium

AWARDS

Drs. Pieter Johnson won the H.B. Ward Medal, Janine Caira won the Clark P. Read Mentor Award, Dennis Minchella won the Distinguished Service Award, and Kyle Gustafson won the Ashton Cuckler New Investigator Award. Congratulations to the winners!

We also celebrated the achievements of our student members who won awards! Award winners included Graham Goodman (University of Utah - graduate student) and Ethan Woodyard (Mississippi State University - undergraduate student) who were awarded Student Research Grants. The winners of this



Tim Ruhnke emcees the Student Auction with help of the meeting mascot, a giant hookworm.

year's Student Paper Competition were Cristina Llopis-Belenguer (Universitat de Valéncia) and Jasmine Childress (University of California, Santa Barbara) for the Outstanding Student Paper awards, and Graham Goodman (University of Utah) and Demi Gagnon (University of Manitoba) for the Meritorious Student Paper awards. This year we also presented awards for Best Student Posters. The winners were Jessica Rotolo (University of Guelph), Bianca Valdes Fernandez (University of Puerto Rico), Matthew Moser (University of California, Santa Cruz), Sisina Macchiarelli (SUNY Oneonta), and Ylce Yoselin Ucan Maas (Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional). Marc Dresden Student Travel Grants were also awarded to Tyler Achatz, Christina Anaya, Mariana Avila, Alexis Brown, Laura Chappell, Jasmine Childress, Danielle de Carle, Margaret Doolin, Emily Durkin, Olwyn Friesen, Demi Gagnon, Kaitlin Gallagher, Graham Goodman, Alexandra Grote, Rita Grunberg, Meghan Guzman, Ciara Hayes, Jacquelin Hernandez Villalobos, Ryan Koch, MartinaLaidemitt, Cristina Llopis-Belenguere, Scott Malotka, Keira Mckee, Marissa Moran, Sara Cowan, Michael Nakama, Marcos Ramos-Benitez, Jessica Rotolo, Caleb Ruiz Jimenez, Ana Santacruz, Charles Schaub, Ben Schultz, Ryan Shannon, Brenda Solorzano-Garcia, Asma Sultana, Brittany White, and Monique Winterhoff.



Many congratulations to ASP's students for your awards, and for the wonderful talks you gave and posters you presented! You're the future of our society, and we're so proud of all you've accomplished in the past year.



Did you know that parasitism evolved over 200 times? Dr. Sara Weinstein came to this number after painstakingly collecting information on the evolution of parasitism across all animal phyla, and published her findings in "Independent origins of parasitism in Animalia" (co-authored by Armand Kuris) in Biology Letters. The reach of this finding extended far beyond just the scientific community (with coverage appearing in places like National Geographic and Smithsonian Magazine).

Sara earned her PhD in 2017 at the University of California Santa Barbara, under the mentorship of Drs. Armand Kuris and Kevin Lafferty. In addition to studying the evolution of parasitism, Sara studied *Baylisascaris procyonis*, a nematode for which racoons are the definitive hosts (becoming infected either by direct contact with parasite eggs in the environment, or from consuming infected paratenic hosts) and humans are accidental hosts. In addition to studying *B. procyonis* infection in raccoons, rodents and humans, she determined that susceptible paratenic hosts avoid contaminated areas, suggesting that parasites might create a "landscape of fear". She then expanded on the concept of ecology of fear and disgust in a perspective piece for Science. But who cares about Science? Our favorite metric is the number of times someone has published in our Society's journal, and Sara published four papers from her PhD work on B. procyonis in the Journal of Parasitology! Sara is currently a Smithsonian-Mpala Postdoctoral Fellow with the Smithsonian Institution and the University of Utah.

You may also know Sara from her parasite-related artwork. She is the creator of the "I heart parasites" and "parasite world" shirts that so many of us (myself included) have purchased at ASP conferences. She has been an ASP member for 8 years, and was ASP's Student Council Representative for 1 year while working on her PhD.

We learned that Sara is currently "chasing giant poisonous rats (and their parasites) in Kenya" and had just "collected a bunch of ectoparasitic earwigs from the butt of a giant pouched rat", and at that point it was clear who we needed to cover for our first Member Spotlight. Below Sara tells us a bit about her dissertation work, and what she's up to currently.



1. What discovery did you make while doing your PhD that you're most excited about?

In Santa Barbara County, CA (my PhD study area), 90% of raccoons host adult raccoon roundworm, 40% of deer mice host juveniles, and 7% of people have antibodies to this raccoon parasite. There is an amazing, generally underappreciated, amount of raccoon roundworm out there in the environment (and in us).

2. We hear you're playing with poisonous rats in Africa. What's up with that?

I am currently studying host-parasite-poison interactions in the African crested rat, *Lophiomys imhausi*. This unique African rodent uses cardenolide toxins from the poison arrow tree (*Acokanthera schimperi*) as a predator defense. Cardenolides are highly lethal to most animals and little is known about this poison sequestration behavior or the mechanisms by which the rat (and its parasites) survive exposure. I've spent the last 8 months in Kenya trapping and sampling wild crested rats to examine how host and parasite mutations and microbial metabolism facilitate this unusual behavior.



Member Spotlight Cont'd

3. Do you have a story about a favorite research moment you'd like to share? Perhaps a particularly memorable "aha moment"? Or a particularly memorable failure?

A particularly memorable failure— my first year as a grad student I decided that I wanted to try to study the unknown part of the dicyemid life cycle. After hatching out several hundred (cannibalistic) octopuses, getting 2 months into a series of exposure trials, and developing some local dicyemid PCR primers, the entire octopus colony was taken out by a bacterial infection. Between the octopus epidemic and my inability to function on a boat, a terrestrial PhD seemed like a good idea.

4. What's next for you?

This fall I will be returning to the states as an NIH postdoc fellow at the University of Utah, continuing work on the poison rat project and starting a new project on parasite-gut microbe interactions in toxin feeding desert woodrats. I am really looking forward to some elephant free fieldwork!

5. Do you have any advice you'd like to share with the next generation of parasitologists?

Take advantage of phenomenal expertise of ASP members and don't be afraid to ask for help with methods, IDs, or ideas.

FIELD NOTES

A Failed Trip...At First Glance

By Maggie Doolin, Ph.D. Student, University of Utah Edited by Jillian Detwiler

In my limited experience, well-planned field work always kicks off with lots of hope and promise. There should be that initial optimism in order to weather the stressors and failures that will likely be encountered along the way. Though I had spent time in the field for a day or a few days here and there, I got my first taste of the ups and downs of a longer collecting trip in the summer of 2017. My Master's advisor (Florian Reyda) and I planned a trip around the eastern half of the USA to collect specimens that - I told myself – were integral to our phylogenetic study of the large acanthocephalan genus Neoechinorhynchus. The steps were so simple. Rent a car, drive to type localities of six Neoechinorhynchus species, collect some well-infected hosts and scoop out the worms. After two weeks and 4500 miles, we would return home, tired but accomplished. We had local contacts mapped out at nearly each stop. So much fun! How could we not succeed?



Well, the first step to successful collecting is to first find the target organism! The animals did not cooperate. Although we did collect the fish hosts at most sites, we only encountered *Neoechinorhynchus* at one water body. Even using three different fish collection methods, spending long hours in the field, and partnering with local contacts to really get in the heads of our aquatic targets, we only returned with 50 worms of 1 of the species of interest. This was about 90 miles traveled and \$90 of grant money spent for each of these worms, and indeed I handled them with more care than I had ever used to process any of our worms before. This trip has fondly become known as the "Big Miss" in our lab since four of the type localities were in Mississippi, and we obtained no worms from that state.

Even after such feelings of failure, I still reflect upon my experiences positively. There was more than just worm collection going on throughout those two weeks. Cultural exchanges and ground-level observations of the USA reminded me that fieldbased biology happens to include the immense benefit of exploration. I developed a new appreciation for the beautiful, multidimensional country in which I live, and I learned that no matter where I am, connecting with local guides is integral to a positive experience in the field. In northern Mississippi, we were assisted by a commercial fisherman, Jerome Haddon, who had made a living for 60 years exclusively by catching bottom-feeding fish in the Yazoo River. He was skeptical of our interest in his fish guts, but really welcoming to us with few questions asked. Without Jerome. I am sure we would have felt even more like Northern outsiders in the close-knit and unfamiliar southern community where we worked. For two days, we dissected fish in front of his garage, listened to the stories he told in his soft southern accent, and watched in awe as he fileted the extremely bony buffalo fish (Ictiobus sp.) with the precision of a master. A few times, he even understood what I was saying in my "Northern accent," which I took as small victories! Personal connections like these relieved some disappointment from the negative collection results and also encouraged us that we were looking in the same places any local expert would look (because we were led by the local experts).

Field Notes Cont'd



In the end, what appeared as a failure immediately after the trip included many memorable experiences and positive outcomes. First off, we did succeed in bringing back one species of *Neoechinorhynchus*, and we had negative infection data from dozens of fish hosts at several distinct field sites that revealed factors in infections (e.g. seasonality, host feeding ecology) that will be considered in future collection trips. Second, I hold the cultural experiences and strong connections to the field sites near and dear. Lastly, after the trip ended I learned one of the many benefits of collaboration with colleagues in my own field of study. Parasitologists with whom Florian had communicated before we left for the field contributed several *Neoechinorhynchus* specimens to our study that summer. These contributions greatly expanded the number and range of species that were represented in our systematic study of the genus. There was plenty of frustration, but not totally a Big Miss.



WE ARE REVIVING PARASITE DAY!

By Kelly Weinersmith

On March 4, 1999 (the anniversary of H.B. Ward's Birthday), ASP's Education Committee kicked off the first "Parasite Day". As part of this event ASP members engaged with their local communities, reaching a total of 59 groups or classes and ~1,370 people. Notably, Dr. Scott Seville visited a kindergarten class dressed up as a giant tapeworm, and this moment was captured on the front page of the Casper Star Tribune. (Amazingly, Scott still had this newspaper clip! We're thrilled he was willing to share it with us!).

ASP's Public Relations Committee is reviving this event, with the goal of making this a sustained annual initiative. For March 4, 2019 we're just working on gettings things off the ground. We're encouraging members to reach out to local schools, and we're in talks with online outreach groups about the possibility of teaming up to connect parasitologists with classrooms interested in learning about parasitology.



Photo Credit: Casper Star Tribune

We'd love to hear back from you about what you did for Parasite Day, and what you think worked well or did not work well.

For future years, we to make outreach easier. We currently have plans to create three types of resources for our members.

First, we want to create kits containing parasitology slides that will be shared with ASP members and brought to local events. To this end, we're soliciting material from our members. If you have parasitology specimens that you would be willing to send to us (which the PR Committee would subsequently prep, organize into kits, store, and ship to members for events), then please e-mail me. Include in the email information about the parasite species you could send, the current way in which the specimens are preserved (on a slide, stored in jars of ethanol, etc), and the number of specimens you would be willing to donate. This is a great way to clear out some space in your lab, and put those old dusty samples to good use! We'll collate the list of possible donations, and will later touch base about which specimens we can use and where they should be shipped (we're working on finding money to cover shipping costs as well).

Second, we want to create digital content that our members can use for outreach. This includes files for posters and powerpoint presentations (some of which will be affiliated with the slide kits we're creating) aimed at various age groups. If you have a poster or a presentation you'd be willing to share, please e-mail me and tell me about it. We will give credit to you if these posters and powerpoint presentations are used subsequently.

Third, we're looking for people who would be willing to act as resources locally. For example, do you have access to specimens that local scientists could use for outreach? Are you an outreach expert who would be happy to talk to budding outreach folks about what works? If you think of some way you could facilitate outreach efforts for folks in your vicinity, then please e-mail me and I'll put your name and info about how you're willing to help on a list that we'll share on the Members Only section of our website.

We'll be sending out more information about Parasite Day in the coming months. Consider getting in touch with us as well if you're working on the Broader Impacts statement for an NSF grant. We would be happy to have labs to collaborate with to make Parasite Day a resounding, and annual, success!

Please send all emails to Kelly Weinersmith at Weinersmith@Rice.edu.

REGIONAL SOCIETY NEWS

New England Association of Parasitologists (NEAP)

The 2018 New England Association of Parasitologists is holding their annual meeting on Saturday, November 17th at Smith College, Massachusetts.

Annual Midwestern Conference of Parasitologists (AMCOP)

AMCOP gave 3 awards to its student members this year. Ryan Koch from Oklahoma State University won the C. A. Herrick Award (sponsored by ELANCO Animal Health) for outstanding student poster. Chi Peng from Berea College won the R. M. Cable undergraduate Award. The G. R. LaRue award for outstanding student talk when to Tyler Achatz from University of North Dakota. Tyler's talk was also chosen as the best overall presentation. Congratulations to Tyler, Ryan, and Chi! The 2019 AMCOP meeting will take place at Minnesota State University in Mankato, MN from June 6-9.

Southeastern Society of Parasitologists (SSP)

The 2019 Annual Meeting of the Southeastern Society of Parasitologists will be held at the University of Georgia from April 11-13, 2019. More information will be available in early 2019.

Southwestern Association of Parasitologists (SWAP)

The 52nd Annual Meeting of the Southwestern Association of Parasitologists will be held at the University of Oklahoma Biological Station April 25-27, 2019. The call for abstracts will be available in early 2019.

Southern California Society of Parasitologists (SCSP)

The 2019 Annual Meeting of the Southern California Society of Parasitologists will be held at California State University, Northridge on May 3, 2019 in conjunction with the Southern California Academy of Sciences. More information will be available in early 2019.

Upcoming Meeting Dates & Locations

- We hope to see everyone at next year's annual meeting July 11–14, 2019 in Rochester, Minnesota at the Mayo Clinic Doubletree Hotel
- The 2020 meeting will be held in in Kansas City, Missouri.

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Kelly Weinersmith (co-chair)
Ben Hanelt (co-chair)
Christopher Blanar
Matthew Bolek
Joanna Cielocha
Jillian Detwiler
Maggie Doolin
Susan Perkins