Greetings, AMS members!

The annual meeting with SICB is approaching, and I hope to see many readers of this newsletter in West Palm Beach in early January. The meetings mark the end of my term as president, and I know you will join me in welcoming President-elect John Clamp as he begins his two-year term. While I remain on the executive committee as past-president, I want to take this opportunity to thank all in AMS for their support of the society. My special thanks goes to those on the executive committee, not only for their help to me but for their tireless work for the society and its activities. It has been a wonderful
group with which to work.

I also wish to thank Bruno Pernet, Editor-in-Chief of Invertebrate Biology, and his editorial team for their outstanding work with the journal. It is a point of pride for the society, for the significant contribution it makes to science and for the career development of those who publish within it.

I am pleased that over the past year the AMS has increased its support of students and microscopy through increased funding of the student travel awards, student research fellowships, and the new microscopy fellowships, the latter open also to early-career faculty. These awards reflect the commitment and mission of the AMS in supporting microscopy, research, and student training, and provide an avenue through which the AMS can contribute significantly to contemporary microscopical science.

The AMS, like many small societies, must continue to examine its mission and place in academia as scientific communication and disciplinary identity evolve rapidly. While once serving as the primary vehicle for microscopists to meet, discuss science, and disseminate their research, that role for the AMS has changed. The continued success of our journal and the legacy of the Transactions of the American Microscopical Society provide significant mission-in-action for the society; directing our funds to students and microscopical research, the AMS thus supports its members in training, research, and publication. But we must continue to think about the future of the society, consider our own evolving identity and priorities, and decide how we can best serve our mission. I look forward to supporting John Clamp as he leads us through these conversations.

My best wishes for the holiday period, and for our meeting in the warm climes of West Palm Beach.

Pat

Message from the Editor of IB — Bruno Pernet

Hello all,

I write this in November, with the final issue of Invertebrate Biology for 2014 all wrapped up and sent to the publisher for printing and distribution. The six editors – Mike Hart, Amy Moran, Louise Page, Heather Proctor, Greg Rouse, and Bob Thacker – and I are now turning our attention to the first issue of 2015. As usual, I thank the editors for all of the indispensable work that they do; I could certainly not do my job without them.

In that regard, I have one important piece of news: at the end of 2014, Heather Proctor will step down as an editor.
She has served diligently in that position for five years. I definitely appreciate all her hard work for the journal and for AMS; thank you, Heather!

Overall, 2014 has been a good but relatively slow year for the journal. Our 2013 impact factor, released in July, is 1.061, lower than the that of the few previous years, but still quite respectable for our discipline. Submissions in 2014 were well below average, with ~7 or so new manuscripts submitted per month (our submission rate is normally ~10 per month). The cause of this decline is not clear, though some evidence suggests that it is not specific to IB; that is, that similar journals have also had low numbers of submissions this year. Regardless, this motivates me to (as always) strongly encourage AMS members to support the journal by submitting their own best work to IB, or indirectly, by encouraging their colleagues to do the same. Besides being an obvious place to publish work on invertebrate biology, IB has lots of other selling points, among them efficient manuscript handling and thorough peer-review, high-quality image reproduction (including color), and no page charges. I’m happy to discuss advantages of publishing in the journal with any potential author, so please contact me if you have questions!

Cheers,
Bruno

Message from the Program Officer — Robert Thacker

I am looking forward to seeing everyone at the annual meeting with SICB, January 3-7, 2015 in West Palm Beach, Florida. Over 1200 abstracts were submitted, with 12 symposia and four full days of contributed sessions. The meeting will be held in the Palm Beach Convention Center.

There are many dining and entertainment choices within a short walk north of the convention center. When you register for the meeting, you may choose to order a box lunch for the AMS Luncheon and Business Meeting (Tuesday, January 6, from Noon to 1:30 pm) or you can bring your own brown-bag lunch.

AMS will have a booth in the exhibit hall, featuring entries for the Ralph and Mildred Buchsbaum Prize for Excellence in Photomicrography, information for students, and other society materials. I invite you all to drop by our booth, vote for your favorite photomicrograph, renew acquaintances and Society memberships, and participate in our events.

For members attending the meeting who plan on bringing children, SICB will be using Preferred Sitters; please register with them via email to preferredsitters@msn.com with the following information: Full name, telephone number, email address, children’s name, age and
any special instructions/needs. Preferred Sitters will respond within 48 hours with confirmation and will assign a "ticket number".

AMS will co-sponsor three symposia at the 2015 meeting:

**Soft Bodies, Hard Jaws: Phylogenetic Diversity of Prey Capture and Processing in Jawed, Soft-bodied Invertebrates**
Organizers: Rick Hochberg & Elizabeth Walsh, Monday, January 5.

**Origins of Neurons and Parallel Evolution of Nervous Systems: The Dawn of Neuronal Organization**
Organizer: Leonid Moroz, Monday, January 5.

**Breaking Boundaries for Evolutionary Synthesis: An Interactive, and Integrative Symposium Linking Crustacean and Insect Physiology**
Organizers: Jon Harrison & Sherry Tamone, Wednesday, January 7.

In addition, Dr. Michael Boyle will present the AMS Keynote Lecture, on the *Comparative development of life history diversity in Sipuncula*. This special lecture will be held on Monday, January 5, at 7:30 pm in the Convention Center’s Ballroom C.

Immediately following the AMS Keynote Lecture, we will join The Crustacean Society and the SICB Divisions of Invertebrate Zoology and Ecology & Evolution for a joint social.

**Please note that two changes to the program remain in our schedule this year:**

- Contributed talks are now 15 minutes in length (ideally, 12-minute presentations followed by 3 minutes of questions and discussion).

  A longer lunch break each day, from Noon to 1:30 pm.

  These changes will allow more participants to give oral presentations; hopefully, you will also have more time for meeting with colleagues over lunches. Please let me know if you have any feedback, positive or negative, about these changes.

Best regards,

Bob
The recipients of the AMS Summer Student Research Fellowships of 2014

Shelly McLarty, MS candidate, Walla Walla University, WA, USA

Gut Content and Pigment Analysis in the Marine Isopod Pentidotea resecata

The marine isopod, \textit{Pentidotea resecata}, can be found in two color varieties, green and brown. The color of green individuals closely matches that of their eelgrass (\textit{Zostera marina}) substrate. A previous study suggested that photosynthesis might occur in this species. In the present study we investigated the source of the green isopod’s coloration and potential for photosynthesis by checking for the presence of whole plant cells, intact chloroplasts, and chlorophyll pigments inside the animal. Spectrophotometry indicated the presence of pheophytin a, a degradation product of chlorophyll a, within isopod tissue. Microscopy was used to study the anatomy and contents of the isopod digestive system in order to localize any possible photosynthetic material. The hindgut frequently contained large chunks of undigested plant material, including whole plant cells with intact chloroplasts. However, we found no evidence of intact chloroplasts outside the plant cells or inside isopod cells. The gut included several pairs of midgut glands, which bulged with yellow-brown liquid in some individuals. Interestingly, the hemolymph appeared bright green in several individuals. Overall our results did not indicate the presence of photosynthetically active material inside the tissue of the isopod.

Left: Two eelgrass isopods, \textit{Pentidotea resecata}, prior to dissection.

Below: Eelgrass, \textit{Zostera marina}, cells containing chloroplasts in (A) a blade of eelgrass and (B) the hindgut of an eelgrass isopod. Both images photographed at 1000X.
Lauren Summer-Rooney, PhD Candidate, Queen’s University, Belfast, Ireland

Eye anatomy and vision in *Ophiocoma wendtii*

*Ophiocoma wendtii* is a common brittle star found in coastal reefs across the Caribbean that exhibits strong negative phototaxis and undergoes a dramatic colour change between night and day. Studies of their arms revealed the presence of enlarged calcite crystalline structures on the dorsal arm plates, which have the optical properties to act as a functional lens, focussing light onto nerve bundles beneath them. Although there are assumed to be photoreceptive elements within these bundles, their precise nature remains to be investigated in detail, however, these putative eyes are the first described for any brittle star and have earned the species a reputation for highly advanced vision among echinoderms. Thanks to funding from the American Microscopical Society, I will conduct a thorough anatomical and behavioural study of the eyes of *O. wendtii* at the Smithsonian Tropical Research Institute in Panama in spring 2015. Using a wide variety of techniques, including TEM, STEM and tomographic digital reconstruction, I will examine the eyes and surrounding soft tissues to identify photoreceptors and study the neural networks connecting them to the wider nervous system. Digital models of eye anatomy will incorporate information from histological sections using both TEM and light microscopy and present them in their full anatomical context, allowing the ‘virtual dissection’ of the eye for the first time. The network of eyes across the body will also be studied in detail, using serial sectioning and digital reconstruction of whole arms and specimens to determine if and how the information from different eyes is integrated across the body. It has been suggested that the eyes could act together as a disparate compound eye, which would be highly unusual and complex if true. Behavioural experiments examining spectral sensitivity and testing for spatial vision will also complement the anatomical findings, delivering a thorough study of vision in this species which should help shed new light on the visual system of these fascinating organisms.
The AMS at the third International Congress on Invertebrate Morphology

AMS sponsored a photo contest at the third International Congress on Invertebrate Morphology (ICIM3), held at Humboldt-Universität zu Berlin August 3-7, 2014. The 73 entries (38 color, 35 grayscale) were a focal point in the central reception room, generating much discussion during the coffee breaks. The great interest and enthusiasm for the contest was evident in the number of votes cast: more than 250 ballots (representing at least 125 attendees) were cast over 2 days. Viktor Starunov of St. Petersburg State University won the color division for a beautifully composed image of terebellids, and Maria Herranz of the Universidad Complutense de Madrid won the grayscale division with an amazing and slightly terrifying image of a kinorhynch mouth. Both of these winners are graduate students.

Left: Winning color image by Viktostarunov. Two juvenile terebellids (Polychaeta: Terebellidae), > CLSM. TRITC-conjugated phalloidin staining (red), acetylated alpha-tubulin (green) and serotonin (blue) immunostaining.

Right: Winning black and white image by Maria Herranz. Apical view of the head (introvert and mouth cone) of Meristoderes boylei (Kinorhyncha). Scanning electron microscopy, scale bar, 10 μm.

Thanks to Meg Daly (Ohio State University) for running the competition!
Ralph and Mildred Buchsbaum Prize for Excellence in Photomicrography

If your research requires the use of microscopy, or you just love photographs of small things (or small parts of big things), then we encourage you to consider submitting your photomicrographs to the 2015 Buchsbaum Photomicrography Contest at the upcoming SICB conference in West Palm Beach!

The contest is a memorial to Ralph Buchsbaum, pioneer in cell and tissue culture of animals and champion of photomicrography, and its goal is to encourage microscopical-biological photography. Micrographs may be of any biological specimen and use any form of microscopy, e.g. CLSM, TEM, SEM, DIC, etc. The contest is open to all SICB participants, 3 entries per participant. Micrographs will be displayed at the AMS booth and voting will be open to all SICB attendees.

Submissions can be color or B&W and must be hardcopy prints up to 8 x 10 inches. All photographs should be unlabeled, unsigned and mounted on poster board or printed on heavy-duty paper. A single line of information identifying the subject (e.g., “Cilia of a trochophore”) and microscopical technique (“Tubulin stain, CLSM”) should be below the photograph. Details can be found on the American Microscopical Society’s website: http://amicros.org/.

Winning entries in the color and B&W categories each receive a cash award, a ticket to the AMS luncheon at the following year’s SICB conference, and the envy of all your peers.

The American Microscopical Society supports student research in several ways

• Travel Awards to AMS / SICB joint annual meeting ($250) 3–7 January 2015, West Palm Beach, FL (www.sicb.org)

• Summer Research Fellowships ($1000)

• Microscopy Training Fellowships ($1000)

For further information: contact AMS President Pat Reynolds (preynold@hamilton.edu) or visit the AMS website: http://amicros.org/.

AMS Best Student Oral Presentation Competition

The AMS Best Student oral presentation with microscopy competition will be run at SICB 2015! We will soon have a full list of our entrants, a schedule of their presentations, and we will be organizing judges. If you would like to be a judge for these presentations, please contact the Society’s President, Pat Reynolds (preynold@hamilton.edu).
Minutes of the Executive Committee Meeting of
The American Microscopical Society
January 4, 2014 Austin Texas

The annual meeting of the Executive Committee of the American Microscopical Society convened at a little after 8:00 p.m. on January 4, 2014 in Austin, Texas. In attendance were President Patrick Reynolds, Treasurer John Pilger, Editor-in-Chief of Invertebrate Biology (IB) Bruno Pernet, Program Officer Robert Thacker, Secretary Megan Schwartz, Members-at-Large Liz Walsh and Elizabeth Davis-Berg, and Website Coordinator, Amy Johnson. Member-at-Large Scott Santagata was absent due to travel delays. President-elect John Clamp, Graduate Student Representative Christopher Laumer, and a representative from Wiley-Blackwell, the publisher for IB, were unable to attend the meeting.

President Patrick Reynolds opened the meeting by welcoming the members of the Executive Committee and reviewing the minutes from the 2013 San Francisco meeting, which were unanimously approved.

Secretary’s Report, Megan Schwartz
The Secretary’s report summarized election results from fall 2013 in which John Clamp was elected to the President-Elect position and Shanna Hanes was elected to the Member-at-Large position vacated by Liz Walsh. Membership held steady at 224 with an increase of seven student members and a loss of eight regular and two lifetime members. There were no reported member deaths.

Treasurer’s Report, John Pilger
John Pilger reported on the transition of the AMS accounts and documents from former treasurer Bruce Conn. The Treasurer spent much of the year sorting these documents, culling and familiarizing himself with revenue and expenditure streams. In addition, John reported that he has digitized the AMS accounts from 2010 to present in Quicken.

During the transition between Treasurers, two accounts were closed; a Douglas County Bank money market and a CD. These funds were deposited into the operations account. Historically, operations are sustainable at approximately $15,000 per year, so the additional balance will be invested. Due to a change implemented by the IRS, the AMS had to file a 501 3c in 2012 to have the Society’s non-profit status reinstated. The IRS remains behind on processing 501 3c applications and the AMS status as a non-profit with the IRS has yet to be decided. In the meantime, the IRS recommended that the AMS accountants prepare a 2012 tax return. If status as a non-profit is reinstated, tax submission in future years will simply be a post-card.

Records for the 2013 Photomicroscopy awards checks to Vladimir Gross, Sarah, Atherson and Alexander Hackman, are missing. In the future, all payment, investment and revenue transactions will need to have electronic or paper documentation in the form of an invoice or request for payment.

The treasurer noted that the AMS website hosting payment needs to be taken care of and transferred from the Web Coordinator to the Treasurer. Additionally, profit sharing between IB and WB revenue was down considerably.

Program Officer’s Report, Robert Thacker
Robert Thacker reported on AMS activities at the 2014 meeting. These included the co-sponsoring of three symposia: The cell’s view of animal body plan evolution (organized by Deirdre Lyons), Shaking, dripping, and drinking: surface-tension phenomena in organismal biology (organized by David Hu), and Parasitic manipulation of host phenotype, or how to make a zombie (organized by Kelly Weinersmith). Symposia support is typically about $2000 from each division and the funds can be distributed as the society wishes. Members of the AMS are encouraged to suggest new symposia for future meetings.
The AMS also supported a joint social with the Divisions of Invertebrate Zoology, Ecology & Evolution, Evolutionary Developmental Biology, Phylogenetics & Comparative Biology, and The Crustacean Society. Each division contributed $800, a set amount, to this social event.

Additional activities include the Executive Committee meeting as well as a combined business meeting and luncheon. A total of 26 AMS members registered for the luncheon, in years past this has been as high as 40 members. After some discussion there was general consensus that the AMS Luncheon in San Francisco was far too expensive, and student tickets should be subsidized. The luncheon price has been an on-going issue and several of the Executive Committee members suggested alternatives including going to a “grab and go” lunch, moving offsite or hosting a breakfast. Pricing for the AMS luncheon will not be known until September. The program officer also noted that the 2015 meeting in West Palm Beach will be going to a 90 minute lunch period.

The AMS is staffing a booth which displays the Buchsbaum Photomicroscopy Contest entries, posters from the student fellowship awardees, Nikia Rice (Florida Institute of Technology), and Desmond Ramirez (University of California Santa Barbara), as well as the AMS fellowship program. The photomicroscopy contest was organized by Member-at-Large Elizabeth Davis-Berg, and had many submissions. This year the contest has been advertised within the SICB meeting app and Facebook page. The AMS did not have a keynote speaker for this meeting.

Editor-in-Chief’s Report, Bruno Pernet

The Editor-in-Chief reports that Invertebrate Biology continues to be successful and stable. There are several new members on the editorial board; Paulyn Cartwright (University of Kansas), Euichi Hirose (University of Ryukyus), and Richard Palmer (University of Alberta) all joined the editorial team. Submission remained stable at 126 for 2013. Manuscript handling time to first decision is approximately 40 days and acceptance rate was up to 34%, with many better quality submissions. For the first time, there is a backlog of manuscripts. Production was slightly slower, between 46-57 days to first appearance online, due to a new production editor. The impact factor fell slightly to 1.1.

There are two potential operational changes. Wiley-Blackwell would like IB to go online only. The cost savings is approximately $17,000 per year. After general discussion, the Executive Committee approved continuing to let members choose between online only or online with print version of IB. In addition, Bruno reported that he is still working on WB to reduce their online open access fees, currently $3000, to $1500 for AMS members. Reduced open access fees are available to other societies.

It was noted that several authors and editors have asked for access to high-resolution covers; WB provides a cover gallery. The possibility of putting high-resolution covers on the AMS website was discussed.

Publisher’s Report, given by Bruno Pernet for Hannah Smith

Bruno highlighted several key features of the report submitted by WB. Overall full text article downloads were up 11% from 2012, at just over 23,000 by the end of November. WB anticipated 28,000 downloads by the end of 2013. Online licensed subscriptions were down slightly from 2012. WB has a new digital initiative beginning in 2014 called “Anywhere Article”, a future version of HTML articles that will improve readability and portability to devices.

There was general discussion following the report because of possible discrepancy in profit-sharing in 2012, this will be examined by the treasurer.

Website committee report, Amy Johnston

The website coordinator reported that she is looking into potentially adding personalized AMS graduate student pages where they can showcase their research. Shanna Hanes was identified as a possible person to work with on this. In addition, the Amy would like to make IB covers available from the AMS cite. There was discussion about setting up an AMS Facebook page and Elizabeth Davis-Berg volunteered to undertake this.
**Student award committee report, Patrick Reynolds**

The AMS awarded two summer research fellowships, one to a MS student and one to a PhD student. Each award was $1000. All 12 entries were good quality. Additionally, unanimous approval was given for three student travel awards of $250 (an increase from $150) to attend SICB in West Palm Beach.

Further discussion centered on starting a research training network for students of microscopy to learn from experts. An AMS award of this type could potentially fund all travel and living expenses to work and learn in an expert’s lab. Depending on the budget, the EC unanimously approved two awards of $1000 for developing microscopy skills at workshops. There was discussion about starting an award for post-docs, pre-tenure faculty or later career faculty wishing to incorporate microscopy into their work.

**Unfinished Business**

There was a second brief discussion concerning the online open charges for AMS members, and Bruno relayed the difficulty he is having negotiating with the Publisher on this matter.

**Other business**

The level of AMS’s student support for the International Conference on Invertebrate Morphology III (ICIM3) to be held in Berlin in the summer of 2014 was discussed. A motion passed to award an AMS Student Member with $1500 in general support, and three student awards of $1000.

AMS representation at ICIM3 was then discussed and it was decided that the Society would sponsor a booth at the meeting. The President would contact the organizers of ICIM3 about this. Emeritus status for Dr. Clayton Cook, President of the AMS in 2000 and 2004, was unanimously approved.

The EC discussed the AMS past-presidential address, which has not been a part of the last two SICB meetings. Several ideas were suggested and included inviting a keynote speaker, soliciting speaker nominations from the membership, and giving the speaker an honorarium. A motion was passed to provide an invited speaker with the meeting registration fee as well as an honorarium of $1000.

**Committee Membership for 2014**

The AMS requires several committees each year to operate; these are the committees were formed at the end of the meeting.

Nomination Committee: President Patrick Reynolds, Secretary Megan Schwartz, President-elect John Clamp.
Website Committee: Members-at-Large Elizabeth Davis-Berg and Shanna Hanes.
Student Awards Committee: President Patrick Reynolds, Secretary Megan Schwartz, and a Member-at-Large.

The President recognized retiring Executive Committee members, Kathy Coates and Liz Walsh, and thanked them for their service. The meeting was adjourned at approximately 10:15 pm.