

**SOCIETY FOR INTEGRATIVE AND COMPARATIVE BIOLOGY**  
**Executive Committee Meeting Minutes**  
**3 and 7 January 2015**  
**West Palm Beach Marriott**  
**West Palm Beach, Florida**

**Executive Committee Members, 3 Jan 2015:**

President – Billie Swalla  
President-Elect – Peter Wainwright  
Past President – Ken Sebens  
Secretary – Lou Burnett  
Program Officer – Sherry Tamone  
Past Program Officer – Jon Harrison, not present  
Treasurer – Karen Martin  
Member-at-Large – Beth Brainerd  
Member-at-Large – Cheryl Wilga  
Member-at-Large – Patricia Hernandez

Divisional Chairs

DAB – Diana Hews  
DCB – Mark Denny  
DCE – Mary Mendonça  
DCPB – Stephen Secor  
DEDB – Sally Leys  
DEDE – Marty Martin  
DEE – Mike Sears for Mike Angilletta  
DIZ – Jim McClintock  
DNB – Jim Belanger, not present  
DPCB – Mike Alfaro, not present  
DVM – Alice Gibb  
Editor, *ICB* – Harold Heatwole  
Student Postdoctoral Affairs Committee Chair – Sean Lema  
Educational Council Chair – Bob Podolsky  
Broadening Participation Committee Chair – Michele Nishiguchi  
Executive Director (*ex officio*) – Brett Burk

**Others present:**

*Committee Chairs*

Beth Brainerd – Nominating Committee Chair  
Darwin Jorgensen – Development Committee Chair  
Jake Socha – Public Affairs Committee Chair

*Guests*

David Drupa – BAI  
Steve Ellis – NSF  
Anthea Letsou – NSF  
Suzanne Miller – *ICB*

Jim Olds - NSF  
Callum Ross – Chair-Elect, DVM  
Ian Sherman – Oxford University Press  
Bill Zamer - NSF

1. **Call to Order.** The meeting was called to order at 2:30 p.m. by President Billie Swalla. President Swalla welcomed and introduced the members of the Executive Committee and guests.
2. **Record of Executive Committee Actions**
  - a. **Approval of minutes of the 2014 Executive Committee Meeting**  
The minutes of the 2014 Executive Committee meeting were approved as submitted.
  - b. **Actions of the Executive Committee between annual meetings.** The following actions between the annual meetings were read into the minutes for the record:
    1. **Approval of ICB Editorial Board Appointments.**
      - a. 14 Feb 2014; Associate members 17 of 25 members voting; Berry Pinshow for a term to begin immediately; 17 approved, 0 disapproved, 0 abstained.  
Julia Sigwart for a term to begin 7 Jan 2015; 17 approved, 0 disapproved, 0 abstained.
      - b. 15 Aug 2014; Ken Field, Division of Ecoimmunology and Disease Ecology; 20 of 25 members voting; 20 approved, 0 disapproved, 0 abstained.
    2. **Advice to ICB Editor Hal Heatwole** – 6 Apr 2014; on the inclusion of a manuscript by William E. Zamer and Samuel M. Scheiner “A Conceptual Framework for Organismal Biology: Linking Theories, Models and Data” as either an “invited” paper or a “grand challenge” paper; 17 of 25 members voting; 7 recommended as “invited” paper; 10 recommended as “grand challenge” paper.
    3. **Appointment of ICB Editor, Lynn Marty Martin** – 3 Dec 2014; 20 of 25 members voting; 17 approved, 1 disapproved, 2 abstained.
3. **Officer Reports.**
  - a. Program Officer – Sherry Tamone (**Program Officer Report**, [Appendix 3.a.Program Report](#))
  - b. Secretary – Lou Burnett (**Secretary Report**)
    1. The Secretary reported on a number of items associated with the organization and management of the Society ([Appendix 3.Secy.a.Secretary Report](#)).
    2. The newsletter schedule for 2015 was reviewed.
      - a. Spring 2015
        1. Mar 4 - submission due
        2. Mar 25 - review on-line draft
        3. Apr 1 - corrections due
        4. Apr 8 - newsletter goes on-line
      - b. Fall 2015
        1. Oct 9 - submission due

2. Oct 26 - review on-line draft
  3. Oct 30 - corrections due
  4. Nov 5 - newsletter goes online
3. The Secretary reviewed the Spring election schedule.
    - a. Elections occur in the spring ([Appendix 3.Secy.b SICB Election Schedule for Spring 2015](#) for SICB-wide and divisional elections). The full election schedule is available online: Resources > Elections > Election Schedule for SICB and Divisions or <http://www.sicb.org/resources/electionschedule.php3>.
    - b. The divisional chairs were reminded to appoint nominating committees for divisional offices in the fall prior to the annual meeting. Nominating committees may use the list of candidates who have previously run for offices (Resources > Elections > Election Candidates for SICB and Divisions or <http://www.sicb.org/resources/electioncandidates.php3>).
  4. SICB Bylaws changes last spring.
    - a. There were no bylaws amendments in 2014.
  5. Divisional Best Student Presentation awards procedures were reviewed.
    - a. Best Student Presentation procedures for administering the awards are posted on SIB web site Resources > Administration, Contacts & Handbooks > Administrative Procedures for Divisional Best Student Presentations. The description of the procedures has been revised ([Appendix 3.Secy.c, Administrative Procedures on Divisional Best Student Presentation Awards at the Annual Meeting](#)). Divisions will be given the power to edit the listing of student participants based on divisional criteria.
    - b. **Divisional Secretaries** must report the results of Best Student Presentation awards to the SICB Secretary **within 2 weeks** after the annual meeting for posting on the SICB web site and notification of winners.
    - c. Procedures for processing certificates and checks were reviewed. Divisional Chairs signed a circulating form for certificates to be presented.
  6. The Secretary reviewed a number of Resources available on the SICB web site.
  7. Post-meeting Survey. A post-meeting survey was sent to all attendees of the 2013 annual meeting and 490 individuals responded. The results of the survey were shared with the Executive Committee. The feedback was used to improve the annual meeting and the program of the meeting. A post-meeting survey is planned for this year.
- c. Treasurer – Karen Martin - **Treasurer Report**
    1. The Treasurer reported on the finances of the Society ([Appendix 3.Treas.a, Treasurer Report](#)).
    2. A budget for 2016 was presented and discussed. Further discussion occurred at the Executive Committee meeting on 7 Jan 2015.

3. The Treasurer announced that a survey evaluating Burk & Associates, Inc. and SICB Executive Officers will be sent after the annual meeting to all 2014 Executive Committee members, SICB committee chairs, and divisional officers. The survey closes on January 31, 2015.

#### 4. Special Reports

- a. National Science Foundation. Jim Olds, the Assistant Director of the Directorate for Biological Sciences joined the meeting via Skype and highlighted some of the programs in the directorate that are of interest to SICB.
  1. Budget. Reviewed the upcoming budget; includes \$10 million over FY2014. Money will go to the core programs. Optimistic about the future of NSF funding.
  2. NEON (National Ecological Observatory Network). Uplifted about the science. Views NEON as a large scientific instrument and not a program *per se*. Key aspects allows for high spatial, high resolution measurements. To be used across the waterfront of biology; represents integrative and comparative biology. NEON will, among other things, emphasize cyberinfrastructure.
  3. Brain Initiative. Top story in Washington Post on President's Brain Project. NSF will have a role in this initiative distinct from NIH. Using model systems there will be a distinct neuroscience component that can be geared toward the SICB community. A signature of brain project in the U.S. is that it is community driven.
  4. Genomes to Phenomes. This is a framework for the directorate as a whole, addressing problems of multiscale complexity. Plans to work hard in the directorate to create a common vision that uses the genome to phenome framework.

#### 5. Committee Reports

##### a. Journal, *Integrative and Comparative Biology*

1. Appointment of new editor – Billie Swalla reported on the appointment of the new editor of *Integrative and Comparative Biology* beginning in January 2016, replacing Hal Heatwole.
2. Hal Heatwole, *ICB* Editor reported on the status of the journal ([Appendix 5. ICB Editor Report](#)).
3. Editorial Board appointment. Editor Heatwole nominated Bruno Pernet to represent DIZ on the *ICB* Editorial Board as recommended by the division. The credentials of Bruno Pernet had previously been circulated. The appointment will be for a term 01/2015-01/2020.  

Mary Mendonça moved approval of the appointment (seconded by Sherry Tamone). The Executive Committee approved the appointment of Bruno Pernet by acclamation.
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4. Ian Sherman, Oxford University Press, reviewed the Publisher's Report previously circulated to the Executive Committee.

##### b. Standing Committee Reports (committee order as listed in the SICB Bylaws) ([Appendix 5](#))

1. Advisory – Sebens – report at second meeting.
2. Educational Council – Podolsky ([Appendix 5. Ed Council](#)).
3. Membership – Allen, ([Appendix 5. Membership Committee](#)).

4. Nominating – Brainerd, no report at this time
5. Editorial Board, *ICB* – Heatwole (included in Journal Report above)
6. Student/Postdoctoral Affairs – Lema ([Appendix 5.SPDAC](#)).
7. Student Support – Patek ([Appendix 5.Student Support Committee](#)).
8. Finance Committee – Martin (included in Treasurer Report)
9. Public Affairs – Socha ([Appendix 5.PAC](#)).
10. Program – Tamone (included in Program Officer Report)
11. Development – Jorgensen ([Appendix 5.Development Committee](#)).
12. Broadening Participation – Nishiguchi ([Appendix 5.BPC](#)).

6. **Divisional Reports.** ([Appendix 6](#))

1. Animal Behavior
2. Comparative Biomechanics
3. Comparative Endocrinology
4. Comparative Physiology & Biochemistry
5. Evolutionary Developmental Biology
6. Ecoimmunology & Disease Ecology
7. Ecology & Evolution
8. Invertebrate Zoology
9. Neurobiology
10. Phylogenetics & Comparative Biology
11. Vertebrate Morphology

7. **New Business**

- a. **Honorary Members.** As per the SICB Bylaws, the Membership Committee recommended approval of John Jungck as an honorary member; John Jungck was nominated by the Executive Officers on the recommendation of the Educational Council. Since the motion comes from a committee, it requires no second.

John Jungck shall be given an Honorary Membership in the SICB. The motion passed by acclamation.

- b. **Meeting App.** Brett Burk, SICB Executive Director, reviewed the app that was used for the meeting.
- c. **Orlando Meeting Venue in 2018.** President Swalla reminded the committee that there was discussion at its 7 January 2014 meeting of having an annual meeting in Orlando in 2018. The Executive Officers reviewed this discussion in late January 2014 and decided to withdraw the proposal to meet in Orlando.

8. **Adjournment.** The meeting adjourned at 5:30 p.m.

**Executive Committee Members, 7 Jan 2015:**

President – Billie Swalla  
President-Elect – Peter Wainwright  
Past President – Ken Sebens  
Secretary – Lou Burnett  
Program Officer – Sherry Tamone, not present  
Past Program Officer – Jon Harrison, not present  
Treasurer – Karen Martin  
Member-at-Large – Beth Brainerd  
Member-at-Large – Cheryl Wilga  
Member-at-Large – Patricia Hernandez

Divisional Chairs

DAB – Diana Hews  
DCB – Mark Denny  
DCE – Mary Mendonça  
DCPB – Stephen Secor  
DEDB – Sally Leys  
DEDE – Sarah Durant for Marty Martin  
DEE – Mike Sears for Mike Angilletta  
DIZ – Jim McClintock  
DNB – Jim Belanger, not present  
DPCB – Mike Alfaro, not present  
DVM – Alice Gibb  
Editor, *ICB* – Harold Heatwole  
Student Postdoctoral Affairs Committee Chair – Sean Lema  
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Executive Director (*ex officio*) – Brett Burk

**Others present:**

Committee Chairs

Jake Socha – Public Affairs Committee Chair  
Darwin Jorgensen – Development Committee Chair

Guests

David Drupa – BAI  
Suzanne Miller – *ICB*  
Ian Sherman – Oxford University Press

The Executive Committee meeting convened again at approximately 7:00 a.m. on 7 January 2015.

### **7. New Business (continued)**

- President Swalla conveyed that there were some discussions by members at the meeting about the timing of the SICB meeting. She indicated that SICB might suggest to NSF that the NSF proposal deadline be moved from early January to a later time. She also emphasized that meeting timing was done using data collected from the society, including the 2009 SICB Member Survey and the post-meeting surveys. The 2009 SICB Member Survey indicated overwhelmingly that early January was the best time for the society to meet. She announced that there will be another member survey of the entire membership in which meeting timing will be queried. Other questions will be included in the survey and the Executive Committee will be given the opportunity for input in developing the survey.

### **3. Officer Reports (continued)**

- b. **Treasurer.** Karen Martin reported that the proposed budget, discussed at the first meeting, is a balanced budget for 2016. The budget was proposed by the Finance Committee.

The Executive Committee approved the [SICB FY2016 Budget](#) by acclamation.

### **5. Committee Reports (continued)**

- b. Standing Committee Reports
  - 1. Advisory Committee – Ken Sebens, Past President, reported that the committee meet at a breakfast meeting. Billie Swalla reviewed the accomplishments of the SICB over the last year. The group was pleased with the way the society is working and had no major recommendations.

### **8. Recognition of Officers**

- b. A number of members of the SICB Executive Committee have terms ending at the end of this Executive Committee meeting. President Billie Swalla acknowledged the service of these individuals, which included the following.
  - 1. Billie Swalla – President
  - 2. Lou Burnett – Secretary
  - 3. Jon Harrison – Past Program Officer
  - 4. Beth Brainerd – Member-at-Large
  - 5. Mark Denny – Chair, DCB
  - 6. Jim McClintock – Chair, DIZ
  - 7. Jim Belanger – Chair, DNB
  - 8. Alice Gibb – Chair, DVM
  - 9. Bob Podolsky – Chair, Educational Council

- 9. Adjournment.** Peter Wainwright, the new SICB President, adjourned the meeting at approximately 8:00 a.m.

## Appendix 3.a. Program Report

### Sherry Tamone, Chair Program Committee and SICB Program Officer

Program Committee, Sherry Tamone, Jon Harrison, Allison Welch, Joseph Thompson, Rosemary Knapp, Jonathon Stillman, Louise Page, Sarah DuRant, Donald Miles, Bruno Pernet, Charles Derby, Rachel Colin, Manny Azizi, Robert Thacker, John Zardus,

The Program Committee met in West Palm Beach on October 4-5, 2014 to view the venue and to organize abstracts into cohesive sessions and select symposia for 2016 SICB meeting in Portland. The 1508 abstracts were organized into

- 1) 120 sessions
- 2) 4 days of posters (total posters)
- 3) 12 symposia
- 4) 2 special sessions (Teaching Marine Biology and Sally Woodin & Soft Sediment Ecology)
- 5) Plenary Session
- 6) 3 special lectures

There were 1508 submitted abstracts by October 4, 2015. 8 of these were pulled or were cancelled. Notification of abstract acceptance went out in November, and since then 34 talks or posters were cancelled. To date there are 1466 abstracts.

The Program Officer engaged in the following activities.

- Worked with the Chairs of the Public Affairs Committee, the Broadening Participation Committee, the Student and Postdoctoral Affairs Committee, and the Education Council to formalize workshops during the annual meeting. Workshops will be offered each of the 4 days of the meeting. Some of the workshops include topics on science policy, teaching and learning (TALX), communicating science, and presentations from NSF program directors.
- Worked with the 2015 symposium organizers to insure that they were in compliance with *ICB* journal requirements. Worked with symposium organizers to make sure that their symposia were publicized correctly on the web and in the program
- Worked with the SICB Management Company, Burk and Associates, Inc. and the SICB Webmaster to develop information for the meetings webpage and the published program.
- Worked with the presenters, Burk and Associates, Inc., and Webmaster to finalize the program in the face of multiple changes that occurred between October and December.
- Worked with organizers of the Bartholomew Award, Bern Lecture, and Moore Lecture to obtain abstracts and speaker descriptions for the web page and the program.
- Worked with Meeting Manager Lori Strong to develop the Notes from the Underground.



## **Appendix 3.Secy.a, Secretary Report**

### **Lou Burnett, Secretary**

The items reported here are ones in which the secretary had significant involvement.

**Officer and Committee Manuals.** Additions and updates were made to the manuals for officers and committees containing standard operating procedures. Like all societies, the turnover of officers and the training of new officers is an ongoing challenge. Manuals will appear on the SICB web site > Resources > Administration, Contacts & Handbooks > Officer Handbooks and Committees and Other. The following are available.

- President Manual (updated)
- Secretary Manual (updated)
- Program Officer (in progress)
- Treasurer Manual
- Member-at-Large Manual (updated)
- Divisional Officer Manuals
  - Divisional Chairs Manual
  - Divisional Secretaries Manual (updated)
- Committee Manuals
  - Membership Committee (updated)
  - SICB-wide Nominating Committee
- Other
  - Administrative Procedures for Divisional Best Student Presentations (updated)
  - SICB Awards List and Timelines

**Evaluation of Burk and Associates Inc.** The Executive Officers conducted an annual evaluation of the SICB management company.

**Bylaws Updates.** There were no bylaws amendments in 2014.

**Newsletter.** The newsletter schedule is published on the agenda. Please put these dates on your calendars. The deadlines are serious. Spring is time for Society-wide and divisional elections. Please make sure your nominating committees have a complete slate of officers and at least two candidates for each position. Divisional secretaries will work with the chairs to provide complete candidate biographies with photos.

**Member Updates.** We have continued to use SICB Member Updates to provide members with monthly information on the activities of the society. We receive many requests from divisions and committees to post announcements and these are included in the monthly updates.

**Executive Officers.** The executive officers of the society had significant interaction with each other throughout the year with a total of 34 conference calls and a September planning meeting in West Palm Beach, Florida.

### Appendix 3.Secy.b, SICB Election Schedule for Spring 2015

#### SICB-Wide Elections in 2015

Member-at-Large
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#### Divisional Elections in 2015

Division of Animal Behavior	Chair
Division of Comparative Biomechanics	Secretary Program Officer
Division of Comparative Endocrinology	Chair-Elect Secretary-Elect
Division of Comparative Biochemistry & Physiology	Secretary
Division of Evolutionary Developmental Biology	Secretary
Division of Ecoimmunology & Disease Ecology	Chair*
Division of Ecology & Evolution	Secretary-Elect
Division of Invertebrate Zoology	Secretary
Division of Neurobiology	Secretary
Division of Phylogenetics & Comparative Biology	none
Division of Vertebrate Morphology	Program Officer-Elect

## Administrative Procedures

### Divisional Best Student Presentation Awards at the Annual Meeting (updated 3 Nov 2014)

These procedures outline the responsibilities of the Divisional Chair, the divisional representatives, the SICB business office, and the SICB Secretary in administering the Best Student Presentation Awards.

1. **Awards Committee Appointment.** Divisions should review their procedures and the Chair should appoint an awards committee no later than the summer prior to the annual meeting. This is a part of the SICB calendar.
2. **Judging.** Appointment of judges is the responsibility of the Divisional Chair or the Chair's delegate. Information on the individuals who wish to be considered for judging is collected as a part of the annual meeting registration process. Additional names may be obtained by divisions. Divisions should emphasize in the fall newsletter the importance of having judges. Instructions on how to volunteer for judging should be provided.
  - a. **List of individuals volunteering to judge.** Names collected through registration will be given to each Chair in the form of a link provided by the SICB webmaster ([Link 1](#)). Through this link a separate spreadsheet can be downloaded for each division. The spreadsheet gives the name of the volunteer judge, the email address, SICB membership status (remember only Postdoctoral and Full Members are allowed to judge), and division(s) for which the individual is willing to serve as a judge.
  - b. **Contact the Judges.** Judges should then be contacted by email and asked to sign up for presentations they are willing to judge. The webmaster will provide the appropriate link for sign-up ([Link 2](#)). On this page judges can view their assignments. Some divisions have rules governing the number of judges required for each paper or poster, so additional work might be required by the division to obtain the desired coverage.
  - c. **List of Presentations and Assigned Judges.** A listing of the presentations and the assigned judges for each division can be obtained through a link provided by the webmaster: [Link 3](#).
  - d. **Collecting Scores.** Scoring can be submitted to the division by paper/email/other means, or by asking the judges to enter their score into an online form: [Link 4](#). **This electronic form can be used regardless of whether the judges have signed up on-line in the step above. The two databases are independent. A division could invite a judge ad hoc at the meeting and have her/him enter the scores on the on-line scoring form.**
  - e. **Viewing the Results.** A list of presentations and their scores by division can be found at the following link: [Link 5](#).
3. **Awards associated with prizes with budgetary implications.** The review of the procedures must include provisions in the divisional budgets for cash awards, memberships, or other prizes that the division will award to student award winners. Wiley-Blackwell has generously underwritten the Best Student Presentations such that each division is allocated \$300 for the student awards (\$150 for best oral presentation and \$150 for best poster presentation). Wiley-Blackwell also provides student winners with a

free one year subscription to an appropriate one of their journals. The following journals are associated with the divisions.

- |   |                            |
|---|----------------------------|
| Division of Animal Behavior                   | Ethology                   |
| Division of Comparative Biomechanics          | J. of Zoology              |
| Division of Comparative Endocrinology         | J. Exp. Zoology A          |
| Division of Comparative Physiol. & Biochem.   | J. Exp. Zoology A          |
| Division of Evolutionary Developmental Biol.  | J. Exp. Zoology B          |
| Division of Ecoimmunology & Disease Ecology   | Functional Ecology         |
| Division of Ecology & Evolution               | Ecology Letters            |
| Division of Invertebrate Zoology              | Invertebrate Zoology       |
| Division of Neurobiology                      | Developmental Neurobiology |
| Division of Phylogenetics & Comparative Biol. | Evolution                  |
| Division of Vertebrate Morphology             | J. Morphology              |
- Certificates.** SICB headquarters will make available certificates for each division to present to the student award winners. A sample of the certificates will be provided to the Chairs of each division before or during the annual meeting. At this time, Chairs should order special wording. Certificates will be printed by the business office once student award winners are known.
  - Reporting winners to SICB.** Divisions handle the mechanisms of judging in different ways. However, the winners of the competitions should be announced on the SICB web site as soon as possible after the annual meeting. *To this end, it is the responsibility of the **divisional Secretary** to report the names of the winners (with the presentation number) to the SICB Secretary within two weeks after the annual meeting.*
  - Notifying students of their award.** It is the responsibility of the divisional Chair to notify the students of the status of their awards. The Chair should announce the winners to all students in the division who entered the contest. This can be done simply by an email congratulating the student winners. In this communication, each Chair can indicate that the winners will receive a certificate, a check and a subscription to one of the Wiley journals. A list of student participants and their email addresses can be found at the following link: [Link 6](#).
  - Certificates (and checks) will be sent to award winners by the SICB business office.** Once the student winners are known, the certificates will be completed for each division by SICB headquarters and mailed along with the check to the award winner.

## **Appendix 3.a.Treas, Treasurer Report**

### **Karen Martin, Treasurer**

This has been an interesting year for the financial welfare of our Society, for a number of reasons. First and foremost, we continue to be financially stable and able to meet our obligations as well as continue to support our students and symposia during our annual meeting. For the fifth year in a row, no increase in meeting registration fees is anticipated. Membership dues will remain the same for the ninth year.

During FY 2014 a change in the membership year from Jan –Dec to Apr-Mar caused some effects on the receipt of dues. While this change was much needed to align our membership year with the timing of abstract submission and our annual meeting, one result in 2014 was that some members delayed renewing memberships until reminded by the abstract deadline in August, meaning that their dues were not received until after FY 14 ended. In spite of this, most members got back on board with the new program and the revenues from dues were nearly identical in FY 14 as in FY 13.

The journal continues to do well under the editorship of Hal Heatwole. Revenues were over \$319K from Oxford Press, against expenses of about \$102K. The anticipated passing of the editorial baton upon his retirement should be smooth, and no financial concerns are anticipated from that process.

The Austin meeting brought in \$384K in revenue against \$380.6K in expenses, thus finishing in the black by about \$3500. This razor-thin positive margin indicates that revenues and expenses are fairly evenly matched for the annual meeting, showing good management and sound predictions. For 8 of the past 10 years, the annual meeting has finished in the black. (The exceptions were Orlando in 2006 and Phoenix in 2007.)

One issue of concern for the Finance Committee and the Treasurer has been the stagnation of the many named funds that provide assistance for student research and travel, and for meeting awards and speakers. Analysis of these funds over the past 8 years revealed lack of growth or loss in many of the funds, at the same time that the unrestricted funds for the society have been increasing. With the cooperation of our management team, the way that interest and dividends are calculated for these funds will be changed going forward. In addition some losses from previous years after poor performance of the stock market have been restored from unrestricted funds to named funds as appropriate. No funds have been lost as a result of this revision of book keeping practices; we were able to adjust balances to the appropriate amounts. With the current formula, prudent use of the funds should allow maintenance of principal and slow, steady growth. In addition we are working on a more transparent way to report the funds that will allow the Executive Committee, the divisions, and donors to better understand them. This will be addressed in FY 2015.

Total invested funds were \$1,311,418 as of Dec. 30, 2014, up from \$1,220,128 at this time last year, an increase of \$91,290, or about 7.5%.

Donations to SICB in 2014 totaled \$19,137--- including a generous gift of stock from Jarid Simons for the Hyman fund worth over \$13,500.

Finally, after the close of FY2014 a complete audit of the society's financial records was done. For the past years an annual independent financial review, but not an audit, has been done. Because of the timing, the final tallies for FY 2014 are still somewhat tenuous, but based on the preliminary report, all is well and no problems were uncovered. Revenues exceeded expenses by approximately \$159K last year.

A balanced budget will be presented for approval for FY 2016 for the second year in a row, with no anticipated increase this year in membership dues or conference registration fees. Additional details will be presented at the Business Meetings of the Executive Committee and the Society.

# SICB FY 2016 Budget Summary

## As Approved by the Executive Committee

<b>Revenue</b>	<b>7/1/2015-6/30/2016 <u>2016 Approved</u></b>
Administrative	\$166,000.00
Annual Meeting	\$358,175.00
Endowment Fund	\$16,350.00
Committees	
Journal	\$317,000.00
Grants	\$0.00
Divisional Budget	\$14,499.99
<b>Total Revenue</b>	<b>\$872,024.99</b>
<b>Expenses</b>	
Administrative	\$314,519.71
Annual Meeting	\$344,713.48
Endowment Fund	\$34,800.00
Committees	\$26,770.00
Journal	\$87,000.00
Grants	\$0.00
SICB Memberships	\$4,400.00
Divisional Budget	\$48,399.99
Contingency Fund	\$10,000.00
<b>Total Expense</b>	<b>\$870,603.18</b>
<b>Net Income (Loss) - Current</b>	<b>\$1,421.81</b>

### **General Information about the Budget:**

The SICB naming convention for our fiscal years is to name them according to the year end. So, the fiscal year presented here covers the period 7/1/2015 to 6/30/2016 and is referred to as SICB FY2016.

The SICB budget is prepared by the staff and Finance Committee annually, and then vetted by the Executive Officers. It is then presented at the SICB Conference to the Executive Committee for consideration, discussion and approval.

The summary above is a snapshot of the approved budget summary page (Income Statement tab in the worksheet). Some detail as to the contents of the line items is given below. If you would like full details or have any questions or comments, please do not hesitate to contact the Treasurer at [Treasurer@SICB.org](mailto:Treasurer@SICB.org) or the Executive Director at [ExecDir@SICB.org](mailto:ExecDir@SICB.org).

## Notes about the line items:

### *Revenue*

- Administrative – This is where the member dues are shown in the budget. They make up the vast majority of this line item with very small contributions from mailing list sales and miscellaneous.
- Annual Meeting – While this one seems obvious, it is important to remember which meeting is being budgeted. SICB FY2016 contains the Portland meeting. The revenue for the meeting is made up of 15-20 active categories depending on the year with the vast majority of the revenue coming from the several registration categories (i.e. regular, student, non member). The only other large revenue source is vendors.
- Endowment Fund – This page forecasts some of the revenue that is donated annually to the various funds. We generally exceed this revenue by a considerable margin. Additional revenue for the funds is reflected on the Balance Sheet and comes from the performance of our investments.
- Journal – We have a favorable agreement with our publisher, Oxford University Press, and receive a majority of the net revenue from the operations of *ICB*. Our revenue has been increasing slightly each year.
- Grants – This category shows the revenue for the symposia. As a rule, we budget this at \$0 for revenue and expenses since the specifics for the year being budgeted are not yet known.
- Divisional Budget – On the revenue side, this shows the dues being collected by divisions directly (in the case of two of our divisions). It also shows the revenue to the divisions from the allocations of a portion of the overall membership dues (\$5 allocated proportionally by divisional membership ratio).

### *Expenses*

- Administrative – This category includes the operations for the organization. The largest item in this line item is the management fee to Burk & Associates for their management of SICB. Their performance is reviewed annually by the Executive Officers in a formal process. Other significant costs in this category include the web page maintenance and webmaster costs, merchant fees associated with credit cards, investment advisor fees and auditor fees.
- Annual Meeting – There are many costs associated with the annual meeting. The vast majority of the costs are associated with functions (primarily food and beverage costs), student support costs and audio visual costs.
- Endowment Fund – These are expenses associated with some of our endowment funds. Of particular note on this line item are the two student support items – FGST and GIAR which comprise almost the entire category (\$30K of the \$34.8K).
- Committees – This is where the committee funds are located. Well over half of this budget is allocated to our Broadening Participation Committee. The Public Affairs Committee and Education Council use almost all of the remaining funds in this category.
- Journal – The operations of *ICB* are contained in this line item. We pay a stipend to the Editor and have traditionally paid for a Managing Editor part time position.
- Grants – See note on Grants revenue above.
- SICB Memberships – This notes the organizations to which SICB belongs that have a fee associated with them. The three currently budgeted are the National Science Collection Alliance, the American Institute of Biological Sciences and the National Center for Science Education.
- Divisional Budget – This is where the divisional monies from the SICB general funds are noted – they support symposia, socials and best student papers. The revenue recognized as noted above is also shown as an expense here as an accounting mechanism to transfer it to the divisional funds.
- Contingency Fund – This is intended to provide some flexibility over the course of the year for things not considered at the time of the budget. The average use of it is about 1/3 the total, but it has been needed in some years fully.





*INTEGRATIVE AND  
COMPARATIVE BIOLOGY,  
REPORT FOR 2014*

By Harold Heatwole  
Editor in Chief

## CHANGES TO EDITORIAL BOARD

### COMPLETING THEIR TERMS AND ROTATING OFF OF THE BOARD

- ❖ Prof. Vino Kumar, University of Delhi, Delhi, India
- ❖ Prof. Conrad A. Mattee, Stellenbosch University, Stellenbosch, South Africa

### BEGINNING HER TERM IN 2015

- ❖ Dr. Julia Sigwart, Director of Marine Laboratory at Queen's University, Belfast, Northern Ireland
- ❖ That leaves one vacancy. Please suggest potential nominees to me. I make the nomination, the EC approves (or not), and the President appoints.

***SICB SYMPOSIA PUBLISHED IN  
VOLUME 54 (2014)***

- S1 – Epigenetics: Molecular Mechanisms through Organismal Influences**  
Organized by Warren W. Burggren
- S2 – Stress Condition and Ornamentation**  
Organized by Geoffrey E. Hill
- S3- The Cell's View of Animal Body Plan Evolution**  
Organized by Deirdre C. Lyons, Mansi Srivastava, and Mark Q. Martindale
- S4 – Methods and Mechanisms in Ecoimmunology**  
Organized by C.J. Downs, J.S. Adelman, and G.E. Demas
- S5 – Terrestrial Locomotion: Where Do We Stand, Where Are We Going?**  
Organized by Richard W. Blob and Timothy E. Higham
- S6 – A New Organismal Systems Biology: How Animals Walk the Tight Rope Between Stability and Change**  
Organized by Dianna K. Padilla, Billie Swalla, and Brian Tsukimura
- S7 – Parasitic Manipulation of Host Phenotype, or How to Make a Zombie**  
Organized by Kelly Weinersmith and Zen Faulkes
- S8 – Adaptation or Developmental Constraint? Uniting Evolutionary Theory and Empirical Studies of Phenotypic Plasticity**  
Organized by Haruka Wada and Kendra B. Sewall
- S9 – The Micro and Macro of Nutrient Effects in Animal Physiology and Ecology**  
Organized by Robin W. Warne and Dan Hahn
- S10 – Shaking, Dripping, and Drinking: Surface Tension Phenomena in Organismal Biology**  
Organized by David L. Hu, Rachel Levy, and Lydia Bourouiba

## ***NUMBERS OF PAPERS IN 2014 SICB SYMPOSIA***

S1	9	8*
S2	10	10*
S3	11	7*
S4	10	8*
S5	11	11*
S6	10	10*
S7	11	12**
S8	11	9*
S9	12	9*
S10	12	10*
Non SICB Symposia		6*
Total	107	99

Two papers (1.9%) were Rejected; six (5.6%) granted exemptions

\*included an introductory paper

\*\*Included a complimentary session paper

## Numbers of Authors by Country

❖ <b>2013</b>		❖ <b>2014</b>	
❖ Australia	7	❖ Australia	5
❖ Austria	1	❖ Belgium	2
❖ Belgium	3	❖ Canada	11
❖ Brazil	4	❖ Denmark	1
❖ Canada	4	❖ France	1
❖ China	1	❖ Germany	6
❖ Colombia	1	❖ Israel	2
❖ Denmark	1	❖ Italy	1
❖ England	1	❖ Japan	1
❖ France	4	❖ Korea	3
❖ Germany	10	❖ Spain	3
❖ Israel	1	❖ Switzerland	3
❖ Italy	4	❖ United Kingdom	7
❖ Japan	1	❖ United States	234 (84%)
❖ Netherlands	1	❖ <b>Total</b>	<b>280</b>
❖ New Zealand	1		
❖ Norway	2		
❖ Panama	1		
❖ Sweden	1		
❖ Switzerland	1		
❖ United Kingdom	9		
❖ United States	104 (63%)		
❖ Venezuela	2		
❖ <b>Total</b>	<b>165</b>		



*PROJECTED FOR 2015*

111 symposium papers submitted

19 (17%) exemptions requested

13 (12%) granted by editorial board

As of 17 December 2014

## New Editorial Procedures for 2015

### AUTHORS RECEIVE:

- ❖ 1. Statement of editorial policy of ICB
- ❖ 2. Checklist to use in assessing whether they have addressed the editorial requirements for ICB.
- ❖ 3. Explanations of grammatical points that are faults in > 50% of papers received and that lead to ambiguity.

PAPERS ARE EDITED BEFORE BEING SENT OUT FOR SCIENTIFIC REVIEW. AVOIDS POTENTIAL REVIEWERS REFUSING TO EXAMINE POORLY WRITTEN PAPERS.

## **Educational Council Report**

Bob Podolsky, Chair

In 2014 the Educational Council members--Sarah Boyer, Michele Johnson, Bram Lutton, Bob Podolsky (chair), Nancy Staub, and Joe Thompson--continued to develop several initiatives that are now regular parts of the annual program. Our main new achievement was putting together several initiatives to create an “educational theme” for the annual meeting, a practice that we hope will continue in the future. The theme this year, “Quantitative Biology,” includes a symposium on teaching quantitative biology, a TALX (Teaching and Learning X) workshop associated with the symposium, a John A. Moore Lecture by Dr. John Jungck, and demonstrations by QUBES (Quantitative Undergraduate Biology Education and Synthesis). This year’s M. Patricia Morse award winner, Dr. Linda Walters of the University of Central Florida, will be recognized at the start of the Moore Lecture. A record number of undergraduates (106) have signed up to welcome attendees with the 5<sup>th</sup> annual arrival day poster display. This year we have an official start time to begin the interactive part of the event and Ed Council members will be on hand to facilitate student interactions. We continue to try to develop the member educational database and new parts of the SICB digital library. Finally, we have been participating in the launch of the Professional Societies Alliance for Life Science Education (PSALSE), an organization that is coordinating educational activities among 24 life science professional societies. The Educational Council expects to derive new ideas from PSALSE for supporting educational activity among SICB members, particularly in the growing areas of K-12/public outreach and science communication.



## Membership Committee Report

Jonathan Allen, Chair

Chair	Jonathan Allen	(01/2012-01/2015)
Member	Marcus Davis	(01/2013-01/2016)
Member	Jeanette Yen	(01/2014-01/2017)
Ex Officio-Secretary	Lou Burnett	(01/2006-01/2015)

The primary role of the Membership Committee is to consider matters related to the recruitment of new members and the procedures and policies of membership in the Society. The Membership Committee is also responsible for reviewing the credentials of nominees for honorary memberships and make recommendations on their approval to the Executive Committee.

During 2014, the Membership Committee took the additional step of reviewing the Emeritus and Lifetime Membership rolls to determine which of these members were still living and thus properly included in our membership. We received a list of 204 emeritus and lifetime memberships from Brett Burk and worked to search for notices of any deceased members. Of the members on our list, 53 of them were identifiable as deceased (some we could find no record of either way) meaning 26% of our emeritus and lifetime members can be removed from our rolls. I have attached an excel spreadsheet to this report that highlights in red the members we identified as deceased. The deaths of several of the members dates back to the 1990's. This information, combined with the high percentage that were removed from the rolls, causes us to recommend more frequent (every three years?) checks of the list of lifetime/emeritus members to keep it up to date.

In more general terms, membership in the Society remains strong, but significantly below the recent historical highs we have experienced. The November, 2014 membership report shows a total membership of 1955. This is considerably lower than the November 2013 figure of 3176. However the recent change in the calendar for joining the society means it is likely that the 2013 figures are inflated by combining members who joined for *both* the 2013 and the 2014 meetings. A more appropriate comparison may be 2012, which still had stronger numbers than the current year, with a November total of 2651. Thus, compared to 2012, there has been a 26% decline in our membership.

The Membership Committee plans to actively discuss options for reaching out to current and past members of the Society to try and reverse these losses. The Executive Committee has suggested an email campaign to reach out to past members one on one to encourage them to rejoin the Society. A closer look at the membership reports shows that Full Members have remained relatively constant over the past decade, hovering around 1000. The recent gains in membership have largely occurred through increases in Graduate student memberships and Student-in-Training memberships. In addition, the Membership Committee plans to discuss whether the 'loyal member' discounts associated with membership are sufficient to encourage regular, but not constant, members to maintain their memberships in years they do not attend meetings. For example, should the society explore increasing incentives for full members who attend in 2 out of 3 or 3 out of 4 years to maintain their membership in the off-years?

Finally, the Membership Committee voted unanimously to support the Educational Council's nomination of John Jungck as an Honorary Member of the Society. I have attached his abbreviated CV to this report.

## Candidate for Honorary Membership

John R. Jungck

John R. Jungck is a Professor of Biological Sciences and holds joint appointments in the Department of Mathematical Sciences and the Bioinformatics/Computational Biology Program at the University of Delaware. He is Director of the Interdisciplinary Science Learning Laboratories. He is the former Editor of *Biology International*, *Bioscene: Journal of College Biology Teaching*, and the *American Biology Teacher*. He currently serves on the Editorial Boards of several journals including the *Bulletin of Mathematical Biology*, *Evolutionary Bioinformatics*, *CBE Life Science Education*, and the *American Journal of Undergraduate Research*. He has also been the Editor of a special issue of *Mathematical Modelling of Natural Phenomena*. He is a leader in biology education reform, a mathematical molecular evolutionary biologist, and a computer software developer of biological simulations, tools, and databases. His research interests are in mathematical and theoretical biology (bioinformatics, the origins of genetic codes, image analysis and simulation of patterns in nature, and evolutionary analysis of complex data sets) and interdisciplinary education. He is the immediate past Vice President of the International Union of Biological Sciences, immediate past President of the IUBS Commission on Biology Education, and former Chairperson of the U. S. National Academy of Science's National Committee of IUBS. His international commitments include long-term relations with NECTEC in Thailand, the Allan Wilson Centre for Molecular Evolution and Ecology in New Zealand, and BIOMAT – a consortium of South American mathematical biologists. He is the founder of the BioQUEST Curriculum Consortium (<http://bioquest.org>), and the Principal Investigator (PI) of several major funded initiatives: BEDROCK (Bioinformatics Education Dissemination: Reaching Out, Connecting, and Knitting-together), Cyberlearning at Community Colleges, the SELECTION Working Group of the National Evolutionary Synthesis Center (NESCent), and of a subcontract for NUMB3R5 COUNT! (Numerical Undergraduate Mathematical Biology Education ...). He has served on Boards of such groups as the National Institute for Mathematical Biology Synthesis (NIMBioS) and Emerging Behaviors of Integrated Cellular Systems (EBICS). His awards/honors/offices include AAAS Fellow, Honorary Doctorate from the University of Minnesota, ASCB Bruce Alberts Award, AIBS Education Award, EDUCOM Educational software and curriculum awards, former Chairperson of the Education Committee of the Society for Mathematical Biology, former president of the Association of College and University Biology Educators, former president of Phi Beta Kappa and Sigma Xi chapters, and a Fulbright Scholar in Thailand.

Some recent publications of John R. Jungck:

John R. Jungck and Anton E. Weisstein. (2013). Mathematics and evolutionary biology make bioinformatics education comprehensible. *Briefings in Bioinformatics* 14 (5): 599-609.

Maria Victoria Schneider and John R. Jungck. (2013). International, interdisciplinary, multi-level bioinformatics training and education. *Briefings in Bioinformatics* 14 (5): 527.

John R. Jungck. (2013). Genesis of What Is Life?: A Paradigm Shift in Genetics History *CBE Life Science Education* 12:151-152.

John R. Jungck. (2013). Artful Science: From STEM to STEAM. *Biology International* 53: 3-

John R. Jungck. (2012). Mathematics Make Microbes Beautiful, Beneficial, and Bountiful. In Sima Sariaslani and Geoffrey M. Gadd, Editors. *Advances in Applied Microbiology*, Volume 80, Pages 37-80. ISBN: 978-0-12-394381-1

Noppadon Khiripet, Wongarnet Khantuwan, and John R. Jungck. (2012). Ka-me: a Voronoi image analyzer. *Bioinformatics* 28 (13): 1802-1804.

John R. Jungck. (2012). Global Conservation Education: Participatory, Open, and Place-Based Approaches to Outreach. *Biology International* 50: 3-4.

John R. Jungck. (2012). If Life is Analog, Why Be Discrete? Middle-Out Modelling in Mathematical Biology. In Rubem P Mondaini, Editor. *BIOMAT 2011 World Scientific: Singapore*, pages 376-391. ISBN-13: 9789814397704

John R. Jungck. (2012). "Incorporating Quantitative Reasoning in Common Core Courses: Mathematics for The Ghost Map." *Numeracy: Advancing Education in Quantitative Literacy*, Volume 5, Issue 1, Article 7, pages 1-32.

## **Student/Postdoctoral Affairs Committee Report**

Sean C. Lema, Chair

The SPDAC has again focused its activities this year on promoting the training and career success of SICB's student and postdoctoral researcher members by extending and enhancing resources for this important component of SICB membership. In those efforts, SPDAC revised and updated the "External Grants and Fellowships" resource on the SICB website (<http://www.sicb.org/grants/externalgrants.php>), which lists over 120 grant and fellowship opportunities of relevance to SICB members. The SPDAC intends to enhance the visibility of this resource beyond the annual meeting using a new Facebook SPDAC page ([www.facebook.com/sicbspdac](http://www.facebook.com/sicbspdac)) and a new Twitter account (@SICB\_SPDAC). The SPDAC expects to make these new social networking resources avenues for continued communication with SICB's student and postdoctoral membership throughout the year.

SPDAC will again be operating an "informational booth" in the Exhibitor Hall during the West Palm Beach meeting. This booth will be used to provide meeting attendees with information and handouts on topics relevant to SICB's student and postdoc membership. Topics covered by these handouts include the following: how to write a CV, how to write a job cover letter, the do's and don'ts of grant writing, the do's and don'ts of submitting manuscripts, how to survive in academia, etc. The information contained within these handouts originated from the contributions of SICB members that participated in SPDAC workshops at previous annual meetings; this year the SPDAC reformatting those lists of tips and pointers into several handouts that will be provided at the SPDAC booth to SICB attendees of the annual meeting.

This year's SPDAC Workshop in West Palm Beach will focus on the topic of "The Ins and Outs of Writing Fundable Grants." This workshop will focus on informing student and postdoctoral attendees about the qualities that characterize highly effective grant proposals. Specific topics to be discussed include how to find grant opportunities, what constitutes a fundable – and tractable – multi-year proposal, how to use preliminary data effectively in a proposal, and how to frame the broader impacts of the scientific research being proposed. In addition, logistics such as writing budget justifications and working with a campus grants development office will also be discussed. SICB members scheduled to assist in the small group discussions that will occur during this workshop include:

**Dr. Creagh Breuner**, University of Montana  
**Dr. Ryan Early**, University of Alabama  
**Dr. John Godwin**, North Carolina State University  
**Dr. Donald Mykles**, Colorado State University  
**Dr. Vladimir Pravosudov**, University of Nevada, Reno

In addition, **Steven Ellis** (NSF) has kindly offered to attend this year's SPDAC Workshop to provide an update on funding opportunities at NSF for students and postdocs, and it is expected that several other Program Managers from NSF will come to the Workshop to interact with student and postdoc attendees. The SPDAC would like to extend gratitude to each of these

contributors for volunteering their time and effort toward the training of SICB's student and postdoctoral members.

## Student Support Committee Report

Sheila Patek, Chair

This year, we received 118 grant applications, down from 171 applications in the previous year. Twelve faculty grant reviewers are currently in the process of deciding on this year's winners. The winners will be announced during the SICB 2015 conference.

### Notes/recommendations from current committee:

- Consider having students submit a short report, graphic, or some other brief post of the outcome of these funds.
- Add a flag to the SICB program so that we can see which student talks were funded by this program.
- Add a flag to the nametag to show grant recipient status.

### Nominations for future SSC committee:

- Jim Strother
- Rindy Anderson
- Tonia Hsieh

### Current committee members:

Brian Helmuth	b.helmuth@neu.edu	2014-2016	Northeastern U.
Eric McElroy	McelroyE@cofc.edu	2014-2016	College of Charleston
John Bertram	jbertram@ucalgary.ca	2014-2016	U. Calgary
Jonathan Allen	jdallen@wm.edu	2014-2016	William and Mary
Tony Frankino	frankino@uh.edu	2014-2016	U. Hawaii
Christine Byrum	ByrumC@cofc.edu	2015-2017	College of Charleston
Matt Lovern	matt.lovern@okstate.edu	2015-2017	Oklahoma state
Husak, Jerry	jerry.husak@stthomas.edu	2015-2017	U. St. Thomas

*I recommend maintaining a committee of 13 members, including Chair.* Thus, to maintain this number, four new members need to be recruited as well as the new Chair.

**Recommendation for new Chair:** Ryan Earley (on the committee for the past three years) has been a stellar, dedicated, thoughtful SSC member. He is willing to consider serving as Chair.

**Migration of existing website:** Due to a security concern with the existing site, Duke does not want to maintain the site. The security of the site meets all of Duke's strict standards with one exception. Duke wants the site to not allow anonymous student registration at the site. Given the large numbers of students accessing the site, I have not wanted to add an "approval" step to students registering at the site. That being said, that is a minor tweak to the site that would bring it into compliance with just about any university's security server standards.

**Support for existing website:** I am willing to provide paid support for the website until Summer 2015 when my treasured web support undergraduate moves to a job at Microsoft. Thus, it would be good to move the site to a new server before then and utilize my staff for any testing.

## Public Affairs Committee Report

Jake Socha, Chair

Members: Jake Socha (Chair), Andie Ward, Molly Jacobs, Mike Simon, Tonia Hsieh, David Hu, Sherry Tamone (Ex officio), and Lou Burnett (Ex officio). Socha has been asked to find a replacement for the Chair position, and is currently engaged in a search. New members for the committee are also being recruited.

The Public Affairs Committee continues to work to connect the membership with the broader public. The committee met four times, in person on Jan. 6 and via Skype on June 19, August 27, and November 5.

The committee engaged in the following activities during the year:

**1. We worked with 4 students in the Science Journalism Internship program.** Mike Simon and Tonia Hsieh served as editors, and Jake Socha served as overall editor. The program kicked off with a breakfast meeting on the first day of the Austin conference. This class of science journalism interns completed their stories by April 2014, published on the front page of the SICB web site. These stories remained on the front page throughout the year.

The stories are:

*Vertebrate reproductive evolution is laid bare by the ever-erect, spring-loaded alligator penis.* By Justin Havird, Department of Biological Sciences, Auburn University

*The "Old Friends" hypothesis: Reopening a can of worms.* By Brenna Doheny, Marine Biomedicine and Environmental Sciences, Medical University of South Carolina

*The softer side of nature: caterpillars inspire new-age robots.* By Beth Mortimer, Department of Zoology, Oxford University

*Sexy single female fruit fly in search of experienced male.* By Casey Gilman, Biology Department, University of Massachusetts, Amherst

**2. We conducted a workshop on citizen science at the 2014 Austin meeting,** titled “Storymaking with the WSP Model (with Randy Olson).” Randy was the plenary speaker, and this workshop was tied directly to his plenary talk. He worked directly with workshop participants to guide them through his "Word, Sentence, Paragraph" model of storymaking to transform their science and experiences in science into narratives and stories that engage audiences and enhance communication. Lunch was provided. The event was attended by ~30 people, who had to sign up in advance using a smartphone app. Mike Simon was responsible for organizing this workshop, which was viewed very positively by the participants.

**3. We organized a workshop for the 2015 West Palm Beach meeting,** titled “Speak your Science: How to Engage with Policy Makers.” This workshop will be a panel-type program, with three panel members: Dr. Jason O. Day, Legislative Director for Rep. Daniel Lipinski (IL-3); Dr. Meredith White, postdoctoral researcher with the Bigelow Laboratory for Ocean Sciences and a member of Maine's recently formed Ocean Acidification Study Commission; and Dr.



Michael Simon, Principal Data Scientist with Arcadia Healthcare Solutions, former AAAS Science and Technology Policy Fellow. Lunch will be served to the participants. Molly Jacobs and Mike Simon organized the workshop.

**4. We developed eight press releases for the upcoming 2015 WBP meeting.** This is the second year that press releases have been developed based on individual presentations.

The process for selection of presentations was done differently this year. The PAC Chair (Jake Socha) attended the programming meeting in October and asked for suggestions for highlight as presentations of interest came up during the meeting. A total of 44 suggestions were provided. The PAC identified 14 presentations to highlight, with a goal of producing 8 stories. The Executive Committee approved this list. Some of the initial invites to presenters were turned down due to presenters not wanting their work to be broadcast publicly before publication.

To do the work, the PAC Chair invited previous students in the Science Journalism Internship to be story writers. The volunteer writers were: Medhavi Ambardar, Julie Charbonnier, Katrina Jones, Shane Hanlon, Kara Feilich, Brenna Doheny, Emily Elderbrock, and Justin Havird. Editing was done by PAC members Jake Socha and Tonia Hsieh, with Socha as overall editor. The press releases follow this report. Note that the stories are embargoed until the following dates, coinciding with the individual presentations:

Presentations highlighted with press release via Newswise:

January 4: Kathleen Hunt, Molly Wright, Lindsey Dougherty

January 5: Emily Ellis, Cory Williams

January 6: Colleen Farmer, Jessica Garb

January 7: Jenny Ouyang

**5. Four new students were chosen to participate in the Science Journalism Internship program** for the upcoming 2015 WBP meeting. The students are:

Laura Booth, Columbia University

Alexis Lanza, University of Florida

Devin Merullo, University of Wisconsin, Madison

Ieva Roznere, Ohio State University

**6. We attempted to recruit Neil DeGrasse Tyson as plenary speaker for the 2016 meeting.**

This effort was unsuccessful, with Tyson's handlers communicating that Tyson's minimum appearance fee is \$75k.

**Contact:** Brett Burk

**Headline:** Mystery of funky ‘disco’ clam’s flashing revealed

**Subhead:** By Katrina Jones, Harvard University

**Embargo date:** Release on January 4, 2015

**Keywords:** SICB, biology, science, evolution, disco clam, display

**Images:** 2

**Summary:** New research shows that flashes of light from an unusual clam help it to fend off predators and perhaps to attract prey. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 4, 2015.

**Photo legends and credits:**

Disco clam photo: *The ‘disco’ clam *Ctenoides ales* sends ripples of light along the edge of its mantle to produce a flashing display, but why? Credit: Lindsey Dougherty*

SEM photo: *Scanning electron microscope image of the tissue of a ‘disco’ clam, showing white reflective tissue on the right, and red absorbent tissue on the left. Credit: Lindsey Dougherty*

In the dark, underwater caves of the Indo-Pacific Ocean, a lucky diver may be treated to a rare underwater light show: the flashing of the clam *Ctenoides ales*, also known as the ‘disco’ clam. How and why these invertebrates produce their spectacular display is a mystery. New research by Lindsey Dougherty of the University of California, Berkeley, suggests that scaring off predators or luring prey may be the primary motivations for the disco clam’s flashy behavior.

Dougherty first became fascinated with disco clams when she was shocked by their display during a dive in Indonesia. “It was on that trip I first saw the disco clam, and immediately fell in love,” reminisced Dougherty.

Upon her return, Dougherty was surprised to discover that despite their attention-grabbing behavior, it was not known why the flashing is produced. She and her collaborators, Professor Roy Caldwell and undergraduate Alexandria Neibergall, set out to investigate.

The disco clam is an active, filter-feeding mollusk that lives in crevices or small caves in Indo-Pacific coral reefs. Their flashing is so bright that it had been thought to be the result of bioluminescence, the production of light within the tissue. But deeper investigation has revealed a much more unique mechanism behind the displays.

Using high-powered transmission electron microscopy, Dougherty discovered that the flashes are caused by specialized tissues that form a double layer, reflective to light on one side, but absorbent on the other. When the tissue is rapidly rolled and unfurled by the clam, the reflecting light gives the appearance of flashing. These tissues are so reflective that they can even flash using the low levels of blue light found in the caves. They are the only species of bivalve to have evolved structural coloration of this kind, and this latest project set out to discover why.

Dougherty and colleagues had three hypotheses about why the clams flash: to attract a mate, to scare off predators, or to attract prey. They tested these hypotheses using experiments on live

clams in the lab. They wanted to know: can the clams see each other? Do they respond with flashing to other clams, predators, or prey?

They examined the structure and proteins in the clam's tiny eyes using a powerful microscope and concluded that its vision is likely too poor to allow it to observe displays by other clams. This suggests that the clams are not visually attracted to one another, and that the flashing is most likely used for repelling or attracting other species.

Next, they tested the effect of the flashing on predators, which in the wild might be octopi, predatory snails, or mantis shrimp. For this study, they conducted 'looming' trials, during which the researchers moved a false predator in the direction of the clams, and gauged their reactions. "In this case, the false predator was just a styrofoam lid. But it turns out a styrofoam lid is indeed pretty scary to the clams, because their flash rate almost doubled from just under 2 Hz to just under 4 Hz," said Dougherty.

Intriguingly, the researchers also found high levels of sulphur, the key ingredient in sulphuric acid, in the clam's tentacles. Additionally, a peacock mantis shrimp that was attacking the disco clam seemed to recoil from its tentacles and enter a catatonic state. This preliminary information suggested to Dougherty that the clams may be producing noxious, acidic mucus to repel predators.

Finally, phytoplankton prey were introduced into the tank. As the clam's tentacles began to sense the presence of prey, their flash rate increased significantly. Many species of plankton are indeed phototactic and therefore attracted to light, though it is unclear whether the disco clam's prey species are able to see their flashing, a topic of a future field study.

Working with these clams in the wild, despite their visual appeal, also has its drawbacks. "Doing an experiment is one thing, but doing an experiment underwater, even a simple one, is exponentially more difficult," Dougherty explains. "Coral reefs are fragile environments; you have to be very conscious of what you are doing."

Then there are the technical issues: "Even once you do get the camera set up, I've had hermit crabs walk over and run into the GoPro camera and knock it over. Every day is an adventure with underwater research!"

Dougherty presented this research at the 2015 annual conference of the Society of Integrative and Comparative Biology in West Palm Beach, Florida. Video of the disco clam can be found at: [https://www.youtube.com/watch?v=D\\_siqfXOSaA&feature=youtu.be](https://www.youtube.com/watch?v=D_siqfXOSaA&feature=youtu.be)

**Contact:** Brett Burk

**Headline:** Being a couch potato could have led to marital bliss in mantis shrimps

**Subhead:** By Justin Havird, Colorado State University

**Embargo date:** Release on January 4, 2015

**Keywords:** SICB, biology, science, evolution, mantis shrimp, monogamy

**Images:** 0

**Summary:** New research shows that being monogamous is an advantage for mantis shrimp, helping them to avoid predators. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 4, 2015.

From the viewpoint of natural selection, monogamy might be considered a dead end. Species should be more successful when individuals mate with as many partners as possible, leading to a greater number of offspring with more genetic diversity. But researchers at the University of California (UC), Berkeley, are turning to an odd example—the mantis shrimp—to dig for deeper reasons for why some animals mate with one partner for life.

Social monogamy, where one lives and shares resources with a single partner for an extended period of time, is rare in nature. So why did it evolve at all?

“Probably most commonly discussed is a need for biparental care,” says Dr. Molly Wright at UC Berkeley, who studies the evolution of animal behavior. She’s referring to the idea that in socially monogamous animals, both sexes tend to take care of the young. Even though such partnerships tend to produce fewer or less genetically diverse offspring, these offspring have a better chance of surviving to maturity because both mom and dad are caring for them.

Although this trade-off makes sense, there’s one problem. Scientists have only found evidence for it in a narrow range of species, mainly in birds and mammals.

Mantis shrimps, an ancient lineage of crustaceans, are decidedly neither birds nor mammals. Also known as ‘stomatopods’, they have been largely studied for their amazing eyes, considered to be the most complex among animals, and their claws, which deliver the fastest punch in the animal kingdom. Their punches are actually so fast that they create cavitation bubbles in the water, which produce light and heat upon collapse.

The charismatic mantis shrimps have even garnered their own popular [“True Facts” video](#) on YouTube and [an internet cartoon](#).

However, Wright was more interested in the true fact that some species of mantis shrimps practice social monogamy. She noticed something odd while studying them for her PhD in the coral reefs of French Polynesia:

“We saw that stomatopods were living at higher densities farther away from coral heads, and that wasn’t what we were expecting.” Wright expected to see more burrows near the coral, where the small fish and invertebrates that mantis shrimp feed on are abundant.

The unexpected finding that mantis shrimp seemed to prefer being far away from their food source prompted Wright to note that the corals were also where the larger fishes that eat mantis shrimps are found. Avoiding predators may be especially important for socially monogamous mantis shrimp species, because unlike some of their promiscuous relatives, they have a less armored shell.

“Our surprising data made me wonder what role predation was playing in shaping social monogamy and mating systems in general,” Wright says.

Wright tested two competing ideas to figure out if avoiding predation might have been the driving force behind the evolution of monogamy. If biparental care evolved early in the monogamous mantis shrimps, either at the same time or slightly before the evolution of social monogamy, then the classic hypothesis of a need for biparental care would apply to mantis shrimps. On the other hand, if social monogamy co-evolved with a sedentary lifestyle characterized by sit-and-wait predation, it would suggest monogamy is tied to the mantis shrimp avoiding becoming prey.

To test these competing ideas, Wright mapped life history traits onto an evolutionary history of mantis shrimps. Her results strongly went against the classic hypothesis, since she found that a sedentary, sit-and-wait lifestyle went hand-in-hand with social monogamy, but biparental evolved after social monogamy.

She reasons that after the evolution of a sedentary lifestyle, mantis shrimps would have been most vulnerable to predators when they ventured out to find a mate.

The solution? Settle down in the suburbs away from the hustle and bustle of the reef.

Similar to bachelors and bachelorettes growing tired of the loud music at the bar scene, it seems mantis shrimps may have opted for living a longer life, albeit with only a single mate.

Although Wright admits, “I generally try to be careful about what I say about human mating systems,” one can’t help but draw a parallel between marriage and a sedentary lifestyle in our species as well, and Wright hopes that her research will ultimately clarify the evolution of mating systems across animals.

Wright presented this research at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida.

**Contact:** Brett Burk

**Headline:** Baleen hormones increase understanding of bowhead whale reproduction

**Subhead:** By Emily Elderbrock, University of Memphis

**Embargo date:** Release on January 4, 2015

**Keywords:** SICB, biology, science, bowhead whale, baleen, hormones, pregnancy

**Images:** 0

**Summary:** New research shows rapid evolution has helped to make the venom of black widow spiders so toxic. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 4, 2015.

Wild animals provide a unique challenge for physiologists because they are difficult to capture and monitor in their natural habitats. As a result, scientists are increasingly learning about organisms by extracting steroid hormones out of keratinized tissues. This includes hormones such as testosterone, progesterone, and cortisol that are deposited in feathers, human hair, and reptile claws as these tissues grow. A onetime capture and removal of a single sample can provide a scientist with a record of fluctuating amounts of hormone in the body over the growth period of the collected sample. This technique provides a wealth of information about an animal, including its reproductive history. Development of this method is now underway to monitor the reproduction of one of the largest organisms on earth, the bowhead whale.

“The fundamental problem is that there is no capture method for a live whale!” explains Dr. Kathleen Hunt about the current lack of understanding of whales. When she first began working with the bowhead whales, Hunt, a research scientist with the New England Aquarium, was shocked at how little was known about them. Basic information, such as how often they give birth, when they mate, and even how long they live, is unknown. But Hunt and her colleagues at the New England Aquarium in Boston and North Slope Borough in Alaska are working to change this. By using the method of measuring hormones in tissues made of keratin (like hair or fingernails), they hope to learn about the bowhead whales’ current physiological condition, as well as obtain a record of their reproductive activity over the last 15-20 years.

Understanding the reproductive cycle of bowhead whales will allow researchers to monitor the overall condition of the population. In right whales, a species closely related to the bowheads, the interval between pregnancies is an indication of whether or not the population is in trouble. For example, if the period between calves becomes longer, this can be an indication that something is amiss. With an increase in commercial shipping and oil spills, as well as other large anthropogenic effects, it is difficult to predict how the bowhead whale’s population may be influenced. Bowhead whales are currently legally hunted, and being able to monitor the overall success of the population is necessary. But, it is still unknown what is ‘normal’ for a bowhead whale. And without an understanding of what is normal, the researchers won’t be able to tell when reproduction is altered, potentially for the worse.

But whales don’t have fingernails or much hair, so how can keratin be used to study their physiology? The “light bulb moment” for the whale researchers came when they realized that whale baleen is essentially hair. Bowhead whales use baleen plates in their mouths to filter water

and collect food. These long, overlapping plates can grow to more than three meters long and continually grow from the gum line at a rate of 15-20 centimeters per year, as the bottom of the plate wears off. With this in mind, they collected bowhead whale baleen to determine if there was in fact any hormone in the baleen and, if there was, whether the hormone profile within baleen made sense given what they knew about an individual whale.

Baleen cannot be extracted from a live whale, but bowhead whales are legally hunted by natives in managed subsistence hunts in Alaska. During the hunts, state and federal biologists are able to collect samples and data from the harvested whales. For their study, Hunt and her colleagues collected baleen samples from several pregnant females, non-pregnant females, and male bowhead whales. Once back in the lab, they ground down bits of baleen from select locations and measured progesterone levels, a steroid hormone found in high amounts during pregnancy. The researchers predicted that the baleen closer to the gum line, which is most recently grown, would have higher levels of progesterone in currently pregnant females, lower levels in non-pregnant females, and the lowest levels in male whales.

As predicted, the researchers found that not only were steroids present in the baleen, but they also followed the anticipated pattern. In pregnant females progesterone levels were highest, while in non-pregnant females the levels were low in the most recently grown baleen, but high in the area of baleen grown in past years, suggesting that they had been pregnant recently. Male whales had low levels of progesterone in baleen, consistent with the fact that they had never been pregnant. These findings confirm that steroid hormones are deposited in whale baleen and should provide a profile of the whale's recent physiology.

Hunt and her colleagues are excited about the future of this field. Because steroids are known to persist in hair for decades and even centuries, it remains possible that not only can much be learned about the recent history of present whales, but also that of ancient whales from preserved baleen plates. But first, the researchers are working to validate this technique to understand the most fundamental questions about the organism. How often do they give birth? What season do they mate? How long is their gestation? Once they have the answers to these questions, they will be able to make more educated assessments of the health of these whales and aid in their protection.

Hunt presented her research at the 2015 annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida.

**Contact:** Brett Burk

**Headline:** Desires of microscopic shrimp illuminate evolutionary theory

**Subhead:** By Brenna Doheny, Medical University of South Carolina

**Embargo date:** Release on January 5, 2015

**Keywords:** SICB, biology, science, evolution, bioluminescence

**Images:** 0

**Summary:** New research on bioluminescent ostracods shows how tiny crustaceans are helping scientists to understand evolution by sexual selection. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 5, 2015.

A nighttime light display on a coral reef in the Florida Keys sparked a study that provides novel insight into the factors that drive the evolution of new species.

University of California, Santa Barbara, PhD student Emily Ellis and her colleagues in the laboratory of Dr. Todd Oakley are interested in the evolution of complex traits, particularly those related to vision and visual signaling. One such trait brought them on a sampling trip to the Keys: bioluminescence. In particular, the bioluminescence produced by a little-studied microscopic crustacean, the ostracod.

“We were on this new hunt to find this bioluminescence that we had heard so much about from collaborators, but never seen with our own eyes,” Ellis remembers, “and all of a sudden the whole reef just lit up, there was just light everywhere. It was just like a concert.”

She knew at that moment that she had stumbled upon the subject of her PhD research. “I’ve always been interested in speciation and how species form, but this is a whole different mechanism, that light can influence speciation,” Ellis says. “I thought it was just fabulous.”

An underlying question for evolutionary biologists is, why are there so many species? And particularly, why do some lineages have greater species diversity than others? Ellis points out a clear example: the incredible number of species of insects, versus the relatively small number of species of mammals. One popular theory to explain this difference is that lineages that have been around longer have more time to diverge. And yet, there are many cases where two groups have been around for equal lengths of time, but one group has more overall species.

“So we want to know is, what is it about one group that gives them a unique advantage to invade new niches?” asks Ellis.

Hence the idea to study specific traits, and how they arise and are selected. Evolutionary theory holds that traits that play a role in mating and reproductive success, undergoing sexual selection, drive species diversification—a concept often likened to an “arms race.” In other words, if something happens to males that creates diversification, the females have to follow.

“Otherwise they wouldn’t be able to recognize each other,” Ellis explains.



But this idea remains a hypothesis that scientists are still testing, and a source of active debate within the field of evolutionary biology. And that's where bioluminescent ostracods come in.

These millimeter-sized, shrimp-like animals can be found all across the globe, in both marine and freshwater environments. They've even been found living in leaf litter in tropical rainforests. There are an estimated 20,000 species of ostracods, but only about 200 that produce bioluminescence.

There are two separate instances of bioluminescence in ostracods. One type is used as a defense mechanism, in which threatened ostracods emit a cloud of bioluminescence to distract predators. Interestingly, these animals don't have eyes, so it is unlikely that they use their bioluminescence to communicate among themselves.

The second instance is what Ellis and her colleagues traveled to the Keys to see: bioluminescence used as a mating display. There are around 60 species of ostracods with this type of bioluminescence, but they are only found in the Caribbean.

By comparing the numbers of species of ostracods that have evolved bioluminescence for either mating displays or defensive purposes to related species without bioluminescence, Ellis realized she could gain very useful evidence to support or refute the theory of sexual selection as a driver of species diversification. With this technique, known as sister-clade comparison, evolutionary scientists look at groups of species that have common ancestry and age, known as sister clades, comparing the number of species with a particular behavior to the number without.

"What's really great about our study is it's actually simple," Ellis says. "We're attempting to answer a really complex problem with simple methods."

As it turns out, there is only one evolutionary origin for mating-display bioluminescence in ostracods, which means there is not enough statistical strength to investigate the sexual selection question with just ostracods. So Ellis decided to broaden her study to include all bioluminescent marine animals that have related species that use the trait for both defensive purposes and mating displays. She limited her investigation to animals whose phylogenies (or historical lineages) have already been published. She found 8 useful phylogenies for bioluminescent mating displays and 12 for defensive bioluminescence, across a broad group of marine animals including octopuses, crustaceans (including the ostracods), fish, and a worm.

The results provide clear support for the sexual selection theory. "We definitely documented a strong pattern of increased diversification with the origin of bioluminescent courtship displays, and there was absolutely no correlation with bioluminescence used for defense," Ellis says.

She is quick to point out that for now her research is just documenting a pattern that provides better insight into the process of species diversification, not implying actual causation.

However, this is just the tip of the iceberg of what it might be possible to learn about evolution from the ostracod. Studies have shown that each species that uses bioluminescence for mating

displays has a unique signaling pattern. Ellis looks forward to shedding more light on these fascinating creatures with her ongoing research.

Ellis presented her research at the 2015 annual meeting of the Society for Integrative and Comparative Biology in West Palm Beach, Florida.

**Contact:** Brett Burk

**Headline:** Braving the cold to understand what makes squirrels tick

**Subhead:** By Shane Hanlon, Sea Grant Knauss Fellow

**Embargo date:** Release on January 5, 2015

**Keywords:** SICB, biology, science, circadian clock, arctic ground squirrel, hibernation

**Images:** 4

**Summary:** New research shows that the circadian clock of arctic ground squirrels works differently during the cold of hibernation. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 5, 2015.

For most of us, our day begins with an alarm of some sort. We work, eat, and play, all on some sort of a schedule. While our world is dictated by mechanical clocks, the schedule of the non-human animal kingdom is largely dictated by internal clocks. This raises the question, what really makes animals tick?

Many mammal species in colder climates spend the winter months in torpor, a state of decreased physiological activity commonly known as hibernation. During this period of torpor, many bodily functions are suppressed to conserve energy, including the daily clock known as the circadian clock. Much is known about how circadian clocks operate during active periods; for instance, sunlight is the primary cue for internal clocks in many species, but the role of clocks in torpor is largely unknown. Do circadian clocks persist throughout torpor?

In blistery Anchorage, Alaska, Dr. Cory Williams of the University of Alaska, Anchorage, is braving the cold and snow to understand such clocks. His research animal is the arctic ground squirrel, chosen for its interesting winter hibernation conditions. Their hibernacula, the dens where they hibernate throughout the winter, can completely freeze in the cold winter. As a result, the squirrels go into a deep torpor, where their body temperatures can go as low as  $-3^{\circ}\text{C}$ . So, do their clock-like rhythms persist at these extreme temperatures?

To answer this question, Dr. Williams used a combination of field and laboratory experiments. In the field, Dr. Williams and his team investigate the association between time of emergence from hibernation and the resumption of body temperature. In the lab, the team assesses the rhythmicity of squirrels by manipulating their light exposure and torpor conditions.

Their new results show that during winter hibernation, the squirrels' body temperatures are low and show no evidence of rhythmicity. In the lab, squirrels kept in constant darkness still develop body temperature rhythms upon re-emerging from hibernation, even in the absence of light cues. These results are among the first to confirm that the squirrels' clocks are not active during a period of torpor.

While the results of the experiments focused on the emergence of squirrels post-hibernation, Williams also noticed that male squirrels would enter their hibernacula two weeks prior to entering hibernation. Unexpectedly, they would continue to be rhythmic right up to entering

hibernation. Williams speculates that this two-week disparity between entering and hibernating may have something to do with food caches. Squirrels may store food in those two weeks in the fall, enter torpor, and then have food stores in the spring after emerging from torpor but prior to actually leaving their hibernacula. However, at this point this hypothesis has not yet been tested.

Why does this matter? From the squirrels' perspectives, research on these animals is among the first to show a complete absence of rhythms during a period of torpor, opening the door for future studies on other animals that also enter torpor, such as bears during winter hibernation. For humans, who do not enter torpor, studying squirrels can potentially help us understand our own rhythms. A slew of human health issues, such as certain cancers and cardiovascular diseases, can be traced back to dysfunctional internal clocks. Perhaps research into what makes animals tick can help us to tick better.

Williams presented this research at the 2015 annual meeting of the Society for Integrative and Comparative Biology in West Palm Beach, Florida.

**Contact:** Brett Burk

**Headline: Black widow spider venom unveiled: the fast evolution of a potent toxin**

**Subhead:** By Kara Feilich, Harvard University

**Embargo date:** Release on January 6, 2015

**Keywords:** SICB, biology, science, evolution, spider, venom, black widow

**Images:** 0

**Summary:** New research shows rapid evolution has helped to make the venom of black widow spiders so toxic. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 6, 2015.

Black widow spiders are notorious for their painful bites and lethal venom. The venom is potent enough to let these spiders and their close relatives prey upon small reptiles and mammals that other arachnids wouldn't ever eat. This raises the question: just what makes the widow spiders so unusually toxic? And how did they become so toxic to begin with?

Dr. Jessica Garb of the University of Massachusetts, Lowell, along with a team of collaborators in the US and the UK, has been attacking these questions by studying the spider's genetics, protein expression, and venom content, searching for clues about just how the widow spider's venom evolved to be so potent.

The most potent neurotoxins present in black widow venom are called latrotoxins, which takes its name from the group of widow spiders known as *Latrodectus*. The most toxic of these latrotoxins is alpha-latrotoxin, a devastatingly debilitating chemical that hijacks the body's own internal communications, the electrical and chemical signaling of the nervous system.

"If you got bitten by a black widow," says Garb, "alpha-latrotoxin would travel to the pre-synaptic regions of your neurons: this is the juncture right between the synapse of one neuron and your muscle cells or another neuron, and it inserts itself into the membrane. This causes all of the neuron's vesicles to dump out their neurotransmitters. And that's really what's painful." In other words, alpha-latrotoxin causes nerve cells to release all of their chemical signals at once, overwhelming the nervous system, and causing immense pain.

In fact, alpha-latrotoxin has been studied for a long time by neuroscientists, not spider biologists, as a tool to help them understand how neurons function. And yet, until recently, the latrotoxins were thought to be a very small group of proteins. Garb's research has shown that latrotoxins are actually a much larger group than expected, and can even be found in the common house spider. But don't worry—the common house spider, though closely related to the black widow, is not generally considered toxic to humans.

The difference in venom potency between the widow spiders and the house spider may largely be a matter of the production of toxins, but not the genetic ability to do so. "It's not just about the numbers of these latrotoxins, but their relative expression," Garb says. Even though the genes for multiple latrotoxins exist in house spiders, they appear to be produced at much lower levels in their venom compared to black widows.

Genetics, of course, still has a role to play in the evolution of spider venom. “The house spider genome is a great resource for us, because we can now get the full landscape of what’s in the genome of one of these spiders,” explains Garb. By studying more than one species, the researchers could compare latrotoxin genes among closely-related species that vary in venom functionality and toxicity.

The researchers found that the latrotoxin genes among spiders, while clearly related, are highly divergent. “There has been a lot of lineage-specific evolution of this latrotoxin family, and the set of latrotoxins in house spider venom appears to be quite distinct from those in black widow venoms” says Garb. In other words, instead of having latrotoxin genes that have evolved slowly, gradually accumulating differences, the team believes that these genes have been duplicating and changing over a relatively short time period, contributing to the potency of black widow venom.

The fast appearance of multiple latrotoxins probably allowed the spiders to pursue a variety of prey items, including the small mammals and reptiles that widow spiders might not otherwise be able to eat. It’s even possible that the widow spider’s web changed along with the venom, becoming stronger to keep a hold on these larger prey.

In addition to discovering the diversity of latrotoxins within many species of widow spiders, examining the venom’s composition revealed another trick up the widows’ sleeves. After milking venom from the black widow spiders, Garb and her colleagues found that widow venom is actually made of many different types of toxins. And some of the contents of the venom were not just neurotoxins, but rather chemicals that likely help the toxins reach their targets within the body. So while we may have a good understanding of alpha-latrotoxin, scientists are only just beginning to appreciate the complexity and evolution of spider venom.

Garb presented her team’s research findings at the 2015 annual conference of the Society of Integrative and Comparative Biology in West Palm Beach, Florida.

**Contact:** Brett Burk

**Headline:** Blind students learn to think like scientists with revolutionary traveling toolboxes

**Subhead:** By Julie Charbonnier, Virginia Commonwealth University

**Embargo date:** Release on January 6, 2015

**Keywords:** SICB, biology, science, evolution, education

**Images:** 4

**Summary:** Hands-on, innovative educational material is being developed to help blind students learn about evolution. The development of toolboxes for the blind will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 6, 2015.

Education for the blind has lagged because science classrooms predominantly rely on visually-based materials. However, innovative new toolboxes on evolutionary biology, set to be released next year, may revolutionize science education for more than 60,000 blind K-12 students, allowing them to collect data through their fingertips and incorporate their findings into a scientific framework. “This work is important because it helps teach students to think like scientists, aiming to instill in these students enthusiasm for lifelong learning,” explains Dr. Colleen Farmer of the University of Utah, the leader of the project.

Farmer and her colleagues have been developing evolutionary toolboxes for blind and visually-impaired K-12 students in collaboration with the Utah Museum of Natural History and the National Federation of the Blind. The toolboxes contain audio and Braille lesson plans, three-dimensional models, tactile games, graphics, and maps, all incorporated into comprehensive lesson plans that address key concepts in evolutionary biology, anatomy, and conservation biology. This initiative, funded by the National Science Foundation, has already produced two prototype toolboxes.

The lessons in the toolbox are designed to give students a hands-on, tactile learning experience and to engage them in the scientific process through personal observation and discovery. “This allows students to, rather than passively reading about evolution, observe it for themselves,” explained Robert Cieri, a second-year PhD student who is helping with development. The box for younger students includes 11 clay models of vertebrate skulls, which allow children to literally feel the differences in the skull shape among different animal groups. Students are also provided with plastic figurines of three foot and hand models from humans, chimps, and gibbons so they can retrace human evolution through anatomical form.

Students will learn about the evolutionary concept of adaptive radiation by exploring models of giant tortoises on the Galapagos Islands. As tortoises colonized different islands, their shell changed shape in response to natural selection imposed by food availability. To create the box, Cieri digitally photographed turtle specimens in museum collections and used a 3D printer to print out replicas of the carapaces. Students are able to tactically explore each shell and feel the different shell shapes. Cieri has already noticed that students are visibly more engaged and excited about the science. “For many of them, it’s the first time they have actually felt a tortoise’s shape. It allows them to engage with biological shape,” he explained.

Each toolbox encompasses 3-4 hours of classroom work and activity, but teachers can choose to tailor the box for their own classroom needs. The boxes cost \$300 to \$800 each, related to the cost of 3D printing of the models, making it economically prohibitive for each school to have its own box. Instead, toolboxes will be available for teachers across Utah to rent, free of charge, and are stored at the Utah Museum of Natural History. “The schools can simply rent the material rather than having to buy one” explains Cieri. The team also plans to develop an auditory box, so students can also learn to gather data from audio as well as tactile clues.

“It is terribly unfair for some members of our society not to have the opportunity to gain a deep understanding of the scientific method and to experience the joy and the beauty this understanding and set of skills can bring to one's life.” explains Farmer. The team hopes the program will expand nationally and even internationally so that visually-impaired students from across the globe can benefit from the program.

The evolutionary boxes for the blind will debut at the 2015 annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida.



**Contact:** Brett Burk

**Headline: Hormonal similarity makes happy couples**

**Subhead:** By Medhavi Ambardar, Oklahoma State University

**Embargo date:** Release on January 7, 2015

**Keywords:** SICB, biology, science, behavior, hormones, birds, great tits, divorce

**Images:** 1

**Summary:** New research shows that mating pairs of the bird species known as great tits become more similar in their hormones over time. The results of this study will be presented at the annual conference of the Society for Integrative and Comparative Biology in West Palm Beach, Florida on January 7, 2015.

Some people say that we become more like our partner as time goes on. Surprisingly, the same seems to be true in the animal world—studies on compatibility between mates show that individual animals are more successful when they behave in a similar fashion to their mate. By studying birds, Dr. Jenny Ouyang of the Netherlands Institute of Ecology is showing that similarity between mates can go beyond behavior, extending to their hormones.

Ouyang and her colleagues study similarity in animals using great tits, a small, European songbird, measuring levels of the hormone corticosterone in breeding pairs of males and females. They found that pairs in which the male and female had similar corticosterone levels made better couples—they were more likely to stay together. These pairs become even *more* similar in corticosterone levels over time. “For at least three years,” Ouyang says, “the pairs that stay together increase their similarities year after year after year.”

Much like previous studies on behavioral similarity, pairs that had similar corticosterone were more successful. As is the case with animals, success is often based on the number of offspring produced. Great tit pairs that increased corticosterone similarity within a year raised more nestlings that successfully left the nest.

Those unlucky pairs who did not have similar corticosterone were more likely to “divorce,” leaving the birds without a mate. For birds, like humans, the cost of divorce is high—birds might miss out on the opportunity to breed and produce offspring that year. But all is not lost for divorcee birds. The researchers found that divorced birds paired up with a mate with whom they were more successful in the subsequent year.

Great tits normally build nests in holes in tree trunks, but they will readily accept any kind of suitable cavity, including wooden nest boxes. At their study site in the forests of southern Germany, Ouyang and her colleagues have hundreds of nest boxes set up to attract the birds. Ouyang catches the adult birds during the spring and summer, and takes a small blood sample to measure corticosterone.

Corticosterone is related to the stress response and increases when birds get stressed out. In fact the mere act of being caught by a human is stressful for a bird, so researchers must be as quick as possible when catching birds and taking blood samples. When Ouyang traps the great tits, she

hides in a camouflaged blind and watches for the male or female to enter the nest box. When a bird goes into the nest box, Ouyang springs into action—she remotely triggers a device to trap the bird inside the box, runs to the box, removes the bird, and takes the blood sample, all in under a speedy three minutes.

Ouyang also tracked which birds paired off and raised nestlings, leading to her discovery that stable pairs had similar corticosterone levels and more offspring.

The reason why pairs became more similar is still an open question. One idea is that, since corticosterone is related to how often the adults feed the nestlings, male and female great tits might become more coordinated in their parental efforts as time goes on, resulting in similar corticosterone levels. Because Ouyang's study looked at correlations, rather than causes of corticosterone similarity, her work serves as a starting point for future studies to determine exactly *how* males and females become more similar over time.

Ouyang presented this study at the 2015 annual meeting of the Society for Integrative and Comparative Biology in West Palm Beach, Florida. The findings of the study have also been published in the December 2014 issue of the scientific journal *Animal Behaviour*.

## Development Committee Report

Darwin Jorgensen, Chair

Development Committee: Emily Carrington, Ray Huey, Dar Jorgensen, Karen Martin, Bob Roer, and Brian Tsukimura

The Committee met formally in Austin and general discussions centered on Committee events at the Austin meeting and preliminary planning for the West Palm Beach meeting.

1. At the Austin meeting, Brian Tsukimura agreed to join the Committee. Dar Jorgensen, by invitation from the Executive Committee, has agreed to extend his Committee appointment for a further three years and to continue on as Committee Chair for another year. Emily Carrington's term on the Committee will expire at the time of the Florida meeting. She had served previously as Committee Chair and then continued on this past year as a regular member. We wish to thank Emily for her service to the Committee and the Society. With Emily's departure, a seat on the Committee is open. Two names were submitted to us by the Executive Committee and additional nominations can be discussed. The Committee will consider how to proceed with any Committee membership changes at its meeting in Florida.

2. The Committee had general discussion in Austin (and subsequently) regarding the Endowment funds and how best to approach targeted asks to increase corpus amounts of funds. The Committee will work with the Treasurer (who sits on the Committee) as it moves forward with plans to build the Endowment. Through the end of September 2014 (and post-Austin), individual donations to funds were pretty evenly distributed. The notable exception was the Hyman fund which enjoyed a 5-figure donation input. Total donations through the end of September 2014 (this will have changed by the time of the Florida meeting) stood at nearly \$20,000. This amount included another generous single gift of just over \$14,000. Water bottle sales in Austin netted a little under \$900.

3. At the Austin meeting, we began a new donor recognition program. Ribbons (that were affixed to badges) identified donors at five different levels (and these donors were identified in the spring 2014 Society newsletter). Notably, 17 individuals contributed at the \$100+ level during 2013 (through the end of the Austin meeting) with 3 individuals contributing beyond \$500 each.

4. The Committee has planned a number of activities and events for the Florida meeting: 1) a continuation of the donor recognition program, 2) logoed shirts will be available for purchase, 3) an evening social event (the 2<sup>nd</sup> annual pub crawl) is being planned, and 4) a wine & cheese social has been scheduled.

Donors to the Endowment since the end of the Austin meeting (and through the end of Registration for the Florida meeting) will find a ribbon color-coded to indicate donation amount included in their registration packets. The ribbons can be attached to badges. All donors will be identified in the spring 2015 Society newsletter.

We designed and printed logoed t- and polo shirts that will be on sale at the Florida meeting. The t-shirts are meeting specific, but the polo's bear the Society logo only and so we plan to continue to market these beyond the Florida meeting. The Committee will discuss the idea of having several different items that will be marketed on-line over the course of next year.

The Committee will be hosting a small (by invitation only) social event at the Florida meeting to which several long-time Society members (including past, current and future Presidents) have been invited. In Austin, we hosted a luncheon at which estate gift planning was discussed. Many of the people who attended that luncheon have been invited to the Florida event. The idea is to have informal discussions between Committee members and invitees to get their sense of how the Development Committee should move forward in 2015.

The Committee wishes to extend profound thanks to the good people at Burk and Associates, Inc. for all of their help over the previous year. Lori Strong, in particular, has been instrumental in helping us plan Development events for the Florida meeting.

## **Broadening Participation Committee Report**

Michele Nishiguchi, Chair

### **Broadening Participation activities for 2014**

#### *BP meeting in Washington, D.C., September 14-15, 2014.*

Michele Nishiguchi, Brian Tsukimura, and Cheryl Wilga attended an invitation-only Broadening Participation meeting at the FAESB campus in Bethesda, MD, sponsored by The American Physiological Society, The Council for Undergraduate Research (CUR), and The Leadership Alliance from September 14-15, 2014. The meeting was facilitated by Brooke Bruthers, who is the lead co-PI for the NSF BP funded grant to APS. The purpose of the meeting was to have the four currently funded BP grantees (CUR, APS, The Leadership Alliance, and The Society for Developmental Biology (DEB)) present their current ongoing work in broadening participation in their societies from the past two years. NSF Division of Integrative Organismal Systems (IOS) representatives were also present, and updated the group on funding opportunities that may be available next year for societies as well as other scientific groups. APS also invited other representatives from different scientific societies to get their feedback and also provide them with information on types of programs that are being implemented at the undergraduate level to increase diversity within the societies.

Two invited speakers were at the meeting to give their insights for broadening participation. The first speaker was Dr. Clifton Poodry, who is a senior fellow in science education at the Howard Hughes Medical Institute. Clif was previously the Director for the Department of Health and Human Services, Training, Workforce Development and Diversity at the National Institutes of Health. Clif spent many years developing programs at the NIH to increase diversity in the biomedical workforce, and spoke about issues such as developing training, promoting institutional change, and leveraging diversity are key components that lead to a better environment for broadening participation. He suggested that societies should be focused on informing and educating their members on diversity issues by hosting workshops that influence or intervene with more traditional views on how to promote diversity. The second speaker, Dr. Mark Leddy, is from the National Science Foundation, Division of Human Resources and Development. Mark spoke about broadening participation for people with disabilities, and has extensive experience in developing programs to educate the scientific community about inclusion of disabled people. He specifically mentioned that societies need to create and implement inclusive diversity plans for their members, and engage members with disabilities so they can participate openly and without bias.

There may be an RFA announced next year, but it will be open to more than just societies alone, and are again based on funds available through NSF-IOS. The BP committee is planning on submitting a grant for funding for SICB 2016 in March to NSF.

#### *Manuscript preparation*

Members of the BP committee (Nishiguchi, Tsukimura, Wilga) met one day prior to the NSF meeting in Washington, D.C. to polish the manuscript on broadening participation in SICB. The title of the manuscript is “Broadening participation in the Society for Integrative and

Comparative Biology”. We hope to have this manuscript submitted to either an education-oriented journal or to the society’s journal *Integrative and Comparative Biology*. The manuscript contains data collected by the BP committee over the past 5 years (2010-2014), and discusses the impacts that BP has had over the years since it was formed in the society.

## **West Palm Beach, 2015 activities**

### *BP Travel awards for SICB 2015*

The BP committee gave out 20 awards this year (each \$500) to the top ranked applicants. There were a total of 45 applicants, of which 2 were assistant professors, 4 postdocs, 19 PhD, 9 MS and 11 undergraduate students. The ethnicities were divided as follows: 17 Hispanic/Latino, 6 African American, 4 Native American, 3 Pacific Islander, 0 1<sup>st</sup> generation, and 17 that did not state (some of these are counted twice because they are double URGs). A total of 30 women and 15 men applied. The 20 applicants that were awarded consisted of 4 postdocs, 7 PhD, 4 MS, and 5 UGs, with 10 being Hispanic/Latino, 2 African American, 2 Native American, 5 Pacific Islander, and 4 not stated. 16 of the 20 awardees were women. We also had 4 awardees decline their award (4 had funding already, and 1 was not able to come despite the BP award due to financial reasons).

### *SICB 2015 meeting activities*

The Broadening Participation Committee sponsors two workshops at each annual SICB meeting, based on suggestions from previous years Broadening Participation Travel Award applicants. The first workshop (noon, Jan. 4<sup>th</sup>) that the BPC will be sponsoring at the 2015 annual meeting is: “The academic juggling trick: How to effectively manage your time during the professoriate (and beyond!)” and will be run by Michele Nishiguchi from New Mexico State University. The workshop is designed to provide a foundation of budgeting time in a busy day.

Overview: Ever feel like you are Alice with the red queen, never feeling like you are getting ahead? Trying to manage all the lecture prep, grant and manuscript writing, while being asked to be on several committees (and never mind about your personal life)? Wishing there were 36 hours in a day? Then come find out how to manage it all in your day-to-day activities in this workshop. Dr. Michele Nishiguchi from New Mexico State University will give you hints, make you plan (yes, be prepared to do an activity!), and be prepared for the challenges of juggling the professoriate.

The second workshop (noon, Jan. 6<sup>th</sup>) is entitled: “Don’t be such a scientist, part II: How to give dynamic and informative presentations” and will be given by Dr. Jake Socha from Virginia Tech. This workshop is geared towards members who are interested in how to increase their skills in giving various oral presentations (job seminars, 3 minute elevator talks, meeting presentations, etc.).

Overview: We all want to do good science, but excellence in the lab is just half the battle. Presenting well can make or break your efforts to communicate your work to a broader audience. In this workshop designed for students and postdocs, we’ll discuss strategies for

giving strong scientific presentations, helping you to hone your presentation skills for SICB and beyond.

Presenters will provide information from direct experiences as well as information from previous committee work at SICB.

Travel Awards will be given to recipients at the Broadening Participation Diversity Social during the annual meeting. So, be sure to come to the social and enjoy the refreshments while you chat with your SICB colleagues. We welcome the participation of all SICB members and look forward to hearing your comments and suggestions for broadening participation in our society.

**Broadening Participation Events for the 2015 Meeting in West Palm Beach, FL:**

1. Mentor-Mentee meeting hosted by Michele Nishiguchi. Saturday, Jan. 3<sup>rd</sup>, 6-7 PM.
2. Committee on Broadening Participation meeting, Sunday, Jan 4<sup>th</sup>, 7-8 a.m.
3. Workshop – “The academic juggling trick: How to effectively manage your time during the professoriate (and beyond!)” hosted by Michele Nishiguchi, Sunday, Jan. 4<sup>th</sup>, Noon -1:30 p.m.
4. Workshop - “Don’t be such a scientist, part II: How to give dynamic and informative presentations” hosted by Jake Socha, Tuesday Jan. 6<sup>th</sup>, Noon – 1:30 p.m.
5. Diversity Social hosted by BP committee on Tuesday night at Mojitos, Jan. 6<sup>th</sup> at 8 –10 p.m.

## **Division of Animal Behavior (DAB)**

Diana Hews, Chair

### **Officers**

Chair: Diana Hews 1/2013 – 1/2016

Secretary: Melissa Bowlin 1/2012 – 1/2015

Program Officer: Allison Welch 1/2011 – 1/2014; 1/2014 – 1/2017

Student/Postdoc Representative: Maxine Zylberberg 1/2012 - 2015

Christine Bedore, alternate 1/2012 – 2015

**Division Posts:** This is my second year as Chair of the DAB. A hearty thank you to Melissa Bowlin, who is completing her stint as our Secretary. Michele Johnson was elected to fill The Secretary office, to begin after the 2015 Annual Meeting.

### **Meeting statistics, current and future symposia (notes from Allison Welch PO):**

The animal behavior division will once again have a very healthy representation at the annual meeting. DAB members are contributing at the West Palm Beach meeting with 65 oral presentations in 10 behaviorally-themed sessions, 68 posters in behaviorally-themed poster sub-sessions, and 74 presentations in other sessions by authors with DAB primary affiliation or ABS affiliation. We have a total of 46 entrants in DAB Best Student Presentation competitions (oral and poster) and again this year (2015 Annual Meeting) the Best Student Paper finalists will be featured in a special oral session. These students were selected from a larger set of applicants who submitted extended abstracts this fall. The special session will be held Sunday mid-morning, January 4. Finally, DAB is co-sponsoring two society-wide and three regular symposia at the West Palm Beach 2015 meetings. Table 1 at the end of this report lists the comparative statistics over the past 4 years, for monitoring annual changes in the division.

**Secretary Melissa Bowlin** continued her fine work in the Secretary's position. With her guidance, the DAB Executive Committee continued to refine the structure of the new BSP oral session and the mechanisms of solicitation and selection. Melissa Bowlin will be finishing her term as Secretary with the 2015 meetings, and we will be welcoming in Michele Johnson.

### **DAB Awards:**

For the 2014 competition at the Austin meetings, the DAB had 30 talk entrants; seven finalists were selected to present in one oral session, based upon a judging panel's evaluation of an extended abstract submitted in September. In the poster BSP competition we had 32 entrants. The winner of each competition receives \$300 and a one-year subscription to the journal *Ethology*.

The winner of DAB's Best Student Presentation award in the oral category at the Austin 2014 meetings was **Patricia L Jones**, for her talk on "*Interactions between innate color preferences, individual experience and social information in bumblebee foraging decisions.*" Jones is in the Department of Integrative Biology at the University of Texas at Austin.



The winner of DAB's Best Student Presentation in the poster category was **Mariam Okhovat**, for her presentation: "*Balancing selection promotes epigenetic variation in prairie vole spatial memory circuit.*" Okhovat is in the Department of Integrative Biology at the University of Texas at Austin.

During Fall 2014, the DAB Executive Committee and Judges selected the finalists for the 2015 Best Student Oral Presentation award. The finalists were selected by evaluation of extended abstracts. Congratulations are extended to PA Green (Duke University), David Delany (University Alabama, Birmingham), Brent Stoffer (University of Cincinnati), Nikki Rendon (Indiana University Bloomington), LF Dougherty (University of California, Berkeley), Amber Makowicz (University of Oklahoma) and Gavin M. Leighton (University of Miami). Their presentations will be given in Session 19 on Sunday Jan 4, 2015 from 10:15 am -12:00 noon.

The Chairs of DAB and DEE continue discussions on how to regularize competition for the Adrian M. Wenner "Strong Inference" award that these two divisions manage. This award also needs additional funding to be regularly awarded.

**Information from the NSF relevant to DAB.** NSF representative, Michelle Elekonich, the permanent Program Officer for Animal Behavior in IOS attended our 2014 DAB business meeting. She presented information about the NSF budget and effects of the sequester, the competitive nature of NSF support for SICB symposia and desire to fund "future-looking" symposia (not retrospective). Dr. Elekonich also touched on DDIG, REU, and mid-CAREER Investigator awards.

**Other items:** In hopes of getting better response to our request for participation in DAB and SICB committees, we will be posting a sign-up sheet on the bulletin board and will send out a Doodle Poll after the meetings.

**Next Business Meeting.** Our DAB Business Meeting for the 2015 West Palm Beach meeting will be on Sunday, January 5 at 5:45pm, followed by a joint DAB/DNB social from 6:30-8:00pm.

Diana Hews, Allison Welch, Melissa Bowlin, Maxine Zylberberg

Table 1. DAB activity over the past 3 years assembled by Allison Welch, DPO of DAB.

Categories	2012, Charleston	2013, San Francisco	2014, Austin *	2015, West Palm Beach
Oral presentations in behaviorally-themed sessions (# Talks / # Sessions)	70/13	48/9	77/12	65/10
Posters in behaviorally-themed sessions	57	54	58	68
Presentations in other sessions by authors with DAB or ABS affiliation	52	61	102	74
Entrants in DAB's best student presentation competitions	57	63	50	46
DAB co-sponsored Society wide / Regular symposia	2/2	3/3	1/5	2/3

\* For 2014 meeting DAB changed the BSP format of Oral talks to an invited competition based upon an extended abstract.

## **DIVISION OF COMPARATIVE BIOMECHANICS (DCB)**

Mark Denny, Chair

The meeting in Austin was a rousing success for DCB, with over 220 oral and 100 poster presentations sponsored or co-sponsored by the division. There were co-winners in both the best student presentation competitions: Ariel Camp (Brown) and Marc Badger (UC Berkeley) for oral presentations, Justine Allen ((Brown) and Roshena Macpherson (UC Berkeley) for posters. The Carl Gans Award went to Chris Clarke of UC Riverside.

The division hosted three regional meetings in the Fall of 2014. The Southwest meeting was held at UC Irvine and attracted 71 attendees. The Southeast meeting convened at UNC in Chapel Hill, NC, with 52 participants, and the Northeast meeting unfolded at the UMass Dartmouth campus, with 90 researchers.

This year, DCB is sponsoring four symposia at the annual meeting in West Palm Beach:

- Frank Fish and Paolo Domenici assembled an all-star cast of speakers to address the timely subject of “Unsteady Locomotion with Respect to Eco-Design and Mechanics.”
- Tim Higham and Peter Wainwright continued a long history of exploration into the mechanics of feeding by fish with a symposium addressing “New Insights into Suction Feeding Biomechanics and Evolution.”
- Robbie Wilson and Jerry Husak organized a symposium that will take us a step “Towards a General Framework for Predicting Animal Movement in Nature.”
- Laura Miller and Lindsey Waldrop organized a society-wide symposium to address a critical need in higher education: “Leading Students and Faculty to Quantitative Biology Through Active Learning.”

This year’s meeting marks the debut for a new approach to the competition for Best Student Paper and Poster. In years past, these presentations have been spread across sessions, with the result that few judges saw the same talks. Informed decisions regarding the relative merits of different presentations were therefore difficult. This year, candidates for Best Student Paper and Poster submitted an extended abstract (to supplement the usual short abstract), and, based on these extended abstracts, a DCB panel picked the most outstanding submissions. These interim winners will present their work in a single session of talks and a single session of posters, each with all the judges in the audience. Not only will this new format make for a fairer assessment, but these competition sessions will also highlight the outstanding work done by students in DCB. Continuing his invaluable service to the division, Jake Socha spearheaded the implementation of this new format.

At the annual meeting in Austin, the division voted to name the competitions for best student oral presentation and poster. Nominations for these honors were taken at the meeting and continued online, and a preliminary vote was taken in the spring. The top two candidates for each award will be presented to the division at the meeting in West Palm Beach, and a final vote will be taken.

Continuing a downward trend in applications and nominations, there were none for this year's Carl Gans Award. We will address this distressing trend at the annual meeting.

## Division of Comparative Endocrinology (DCE)

Mary Mendonça, DCE Chair

DCE co-sponsored three symposia at the Austin meeting: *Stress, condition and ornamentation, Adaptation or developmental constraint?*; *Uniting evolutionary theory and empirical studies of phenotypic plasticity*; and *Methods and mechanisms in ecoimmunology* and hosted the symposium-like *Environmental Endocrinology: A Special Session Honoring John Wingfield* that featured 14 speakers. In addition to presentations in the complementary sessions to the three symposia, there were 64 posters and 63 talks organized by DCE, including 5 posters and 23 talks complementary to the Wingfield special session.

Dr. Lou Guillette's Howard Bern lecture *The Fragile Fetus - The Environmental Endocrinology of the Developing Reproductive System* was an inspiring reminder about the important role integrative biologists, and comparative endocrinologists in particular, can and should play in understanding the various challenges humans and wildlife face as a result of exposure to chemicals that become ubiquitous with modern living.

Congratulations to the winners of the DCE Student Presentation Awards: Carolyn Bauer (Tufts University) won the Aubrey Gorbman Oral Presentation Award for *Maternal effects of stress in a plural-breeding rodent*. Brian Vassallo (Bucknell University) won the Lynn Riddiford Poster Presentation Award for *In ovo movement and metabolism of corticosterone throughout avian development*. This was the first year of grouping together the presentations being considered for the awards. There will be some tweaks to the process going forward, but I think the consensus was that the changes did indeed raise the profile of these presentations, as had been our goal. Many thanks to Mark Haussmann for organizing the judging of student presentations and tallying the scores.

DCE organized the 2<sup>nd</sup> annual Data Blitz for the DCE social. The Data Blitz occurs when student competitors presenting 2 min versions of their talks (one of which was in rhyme!). The winner is chosen by audience applause. This format is very popular with student members and we will continue it in future socials.

At the West Palm Beach meeting, DCE is co-sponsoring 4 symposia: *Physiology in Changing Landscapes: An Integrative Perspective for Conservation Biology* (Christine Madliger, Glenn Crossin and Oliver Love); *Thinking About Change: An Integrative Approach for Examining Cognition in a Changing World* (Timothy Roth II and Zoltan Nemeth); *Neurohormones, Brain and Behavior: a Comparative Approach to Exploring Rapid Neuroendocrine Function* (Rebecca Calisi & Colin Saldanha); and *Breaking Boundaries for Evolutionary Synthesis: An Interactive, and Integrative Symposium Linking Crustacean and Insect Physiology* (Jon Harrison and Sherry Tamone).

Ignacio Moore was elected DCE Program Officer. He will begin serving as program officer-Elect at the end of the 2015 meeting. This is Ignacio's second time to be elected DCE Program Officer and we thank him greatly for his continued service (and fortitude)! Sarah Woodley will

move from Secretary-Elect to Secretary at the end of the 2015 meeting. We will be having elections for Chair and Secretary this year.

We continue to fundraise to establish the Bern Endowment. To assist in getting to the \$25,000 goal, DCE contributed \$3,000 from its general funds to the Bern Endowment, which now stands at a bit over \$12,000. DCE also dispersed \$3,800 to cover dues owed to International Federation of Comparative Endocrinological Societies (from 2008-2014). This leaves us substantially under last year with a General Fund of slightly over \$3,000.

We have established a DCE Facebook page (<http://www.facebook.com/groups/104465249680261/>). We currently have 79 members and it's yet another great way to keep in touch with the comparative endocrinology community. We plan to be much more active on this site this year.

## **Division of Comparative Physiology and Biochemistry (DCPB)**

Stephen Secor, Chair

### **DCPB officer nominations and elections**

DCPB held two elections for 2014; Chair-Elect and Program Officer. Scott McWilliams served as nomination chairperson and received nominations for Inna Sokolova (UNC Charlotte) and Francois Vézina (Univ. Quebec Rimouski) for Chair-Elect, and for Wes Dowd (Loyola Marymount Univ.) and Jason Podrabsky (Portland State) for Program Officer. Following spring elections, Inna Sokolova was elected Chair-Elect and Jason Podrabsky was elected Program Officer. Inna will serve for one year (2015) before transitioning to Chair (2016-2018) and Jason will serve two years 2015-2017. Nominations for Secretary will be sought early in 2015 to start 2016 to replace Deborah Lutterschmidt whose two-year term will end in 2015.

### **DCPB Finances**

As of November 16, 2014, there was a balance of about \$7766 in unrestricted funds following the allocation of \$9000 to support a plenary talk and six symposia at the APS Intersociety meeting in San Diego (see below).

#### Additional resources for the 2015:

\$2000 from SICB for symposia support

\$300 from SICB for support of student awards

\$2231 in divisional dues

\$800 from SICB for divisional social

\$4923 from George Bartholomew Award fund

\$1000 from annual meeting funds for Bartholomew Award social

#### Expenditures (allocated and projected for 2015)

\$2000 for symposia support for 2015 meeting

\$300 for support of 2015 student awards

\$5005 Bartholomew Award/divisional social

\$4500 Travel, housing, and registration for Jodie Rummer (Bartholomew awardee)

\$1000 for symposium support for ICCPB meeting (yet to be voted on)

There is an estimated balance of \$6200 that will be carried into 2015.

### **SICB Meetings**

For the 2014 meeting held in Austin, Texas, 489 registrants indicated that their interest was DCPB, with 167 presenters indicating DCPB as their division.

For the 2015 meeting, DCPB will have a strong presence, with 98 oral presentations in 14 physiology-themed sessions with topics that include Thermal Physiology, Muscle Physiology, Ocean Acidification, Metabolism, Respiration, Reproduction, Osmotic and Ionic Regulation, and Cellular and Molecular Biology; in addition to 94 posters on physiological topics in poster sub-sessions. There are more than 150 presentations being given by authors that acknowledge DCPB as their primary affiliation. In addition, there are 79 entrants in DCPB Best Student Paper competitions (oral and poster).

**DCPB support of symposia:**

For the 2014 SICB meeting, DCPB supported the SICB-wide symposium “Epigenetics: Molecular Mechanisms through Organismal Influences”. It also sponsored the divisional symposium “The micro and macro of nutrient effects in animal physiology and ecology,” and co-sponsored the symposia “Stress, condition and ornamentation,” and “Methods and mechanisms in ecoimmunology.”

For the APS Intersociety meeting ‘Comparative Approaches to Grand Challenges in Physiology’ held in San Diego, October 5-8, 2014, DCPB generously supported (total contribution of \$9,000) a plenary lecture (Dr. Patricia Schulte) and six symposia. Those supported symposia included “Physiological adaptations to extremes: Providing novel animal models for investigating health and disease”, “Genomics in integrative and comparative physiology”, “Cardiorespiratory physiology of vertebrate extremophiles”, “Evolutionary and developmental origins of endothermy”, “Comparative gastrointestinal physiology: from genes to animal performance”, and “New perspectives on the ecology and evolution of homeostasis”.

For the 2015 SICB meeting, DCPB will co-sponsor six symposia, including the SICB-wide symposia “Towards a general framework for predicting animal movement speeds in nature” and “Leading students and faculty to quantitative biology through active learning”, together with the symposia “Physiology in changing landscapes: an integrative perspective for conservation biology” (with DCE), “Integrative biology of the crocodylian” (with DAB, DEDB, DNB, DEE and DPCB), “Neurohormones, brain and behavior: a comparative approach to exploring rapid neuroendocrine function” (with DCE and DAB), and “Chemicals that organize ecology: towards a greater integration of chemoreception, neuroscience, organismal biology, and chemical ecology” (with DNB and DIZ).

The Division will discuss and vote on the recommendation of providing support for the symposium “Phenotypic flexibility of energetics in a seasonal world” to be held at the ICCPB meeting in Karków, Poland, August 23-28, 2015.

**George Bartholomew Award**

The 2014 George Bartholomew Award was presented to Dr. Daniel Warner, an assistant professor at the University of Alabama, Birmingham. Dr. Warner was the 21<sup>st</sup> George Bartholomew awardee and gave a wonderful presentation “Fitness consequences of maternal and embryonic responses to environmental variation“ to a full house on the evening of January 4<sup>th</sup>. In addition to an award plaque and the reimbursement of expenses by the Society and DCPB, Dr. Warner was presented with a generous financial gift from Sable Systems International. The award committee of 2014 included Art Woods (Chair), Sheila Patek, Adam Summers, Jonathon Stillman, and Marty Martin.

This year’s George Bartholomew Award winner is Dr. Jodie Rummer of James Cook University in Australia. Dr. Rummer will give the George Bartholomew Lecture “Lessons from the most successful vertebrates: Coping with stress and maintaining performance in a changing world” at 7 pm on January 4<sup>th</sup> to be followed by a social hosted by DCPB. Dr. Rummer received her B.S. and M.S. degrees from the University of West Florida, and her Ph.D. from the University of



British Columbia working with Dr. Colin Brauner. She has held postdoctoral positions at the City University of Hong Kong and James Cook University and is currently a Senior Research Fellow/Assistant Professor at the ARC Centre of Excellence for Coral Reef Studies at James Cook University. Dr. Rummer's research employs an innovative combination of field and laboratory-based studies to examine adaptive traits of coral reef fishes and how they respond to a variety of environmental stressors stemming from climate change. Jodie was selected from a near record number of nominations by the selection committee composed of Sheila Patek (Chair), Adam Summers, Alison Sweeney, Marty Martin, and Robert Cox. The Bartholomew award and reception is supported by the Society and DCPB. Dr. Rummer will be presented with a plaque and a gift from Sable Systems International. The Division again thanks John Lighton and Robin Turner of Sable Systems International for their continued gracious support of the George Bartholomew Award.

### **DCPB Best Student Presentations**

Each year, DCPB names the Best Student Presentation competition in honor of an eminent physiologist who has recently passed. For 2014, the award competition was named in honor of Dr. Jeffrey Graham a research physiologist at Scripps Institution of Oceanography, University of California San Diego who passed away in 2011. His research interests spanned the evolutionary physiology of fishes with a focus on fish respiration and locomotion. The 2014 DCPB student competition encompassed 71 oral and poster presentations spread among 16 oral and 3 posters sessions. Dr. Harry Itagaki coordinated with 49 judges the judging of the student presentations. The 2014 DCPB Graham Award for best student oral presentation was presented to Gina Lonati (UNC-Wilmington), and the best student poster presentation was awarded to Tushar Sirsat (University of North Texas).

For the 2015 meeting, 79 students have entered the competition for DCPB Best Student Presentation for either oral or poster presentation. Ana Jimenez will coordinate the judging of the student presentations.

### **Student/Postdoctoral Affairs Committee**

Natalie Pitts (Colorado State Univ) is DCPB's representative to the Student/Postdoctoral Affairs Committee (SPDAC). For the 2015 SICB meeting, the SPDAC will host the workshop "The Ins and Outs of Writing Fundable Grants" to be held January 5<sup>th</sup>.

## **Division of Evolutionary Developmental Biology (DEDB)**

Sally Leys, Chair

The division has sponsored 2 symposia at the West Palm Beach meeting, Jan 5<sup>th</sup> [Origins of Neurons and Parallel Evolution of Nervous Systems: The Dawn of Neuronal Organization](#); Jan 7<sup>th</sup> [Breaking Boundaries for Evolutionary Synthesis: An Interactive, and Integrative Symposium Linking Crustacean and Insect Physiology](#)). No proposals from the division were submitted for Oregon, although two have been sponsored and several are under development for New Orleans.

Two new officers were elected: Chair elect Cassandra Extavour and Program Officer elect Yui Suzuki. The student/postdoc representative who began term at the beginning of the year left suddenly and was replaced by Amanda Kahn. Amanda has quickly picked up the division's Dinner-Date program for the West Palm Beach meeting and has organized 17 dinner dates with 29 students/postdocs. She has also organized a post-social student/pdf mixer at West Palm Beach.

## **Division of Ecoimmunology and Disease Ecology (DEDE)**

Marty Martin, Chair

### **Officers:**

**Chair:** Lynn B. (Marty) Martin (6/2014-1/2018)

**Secretary:** Travis Wilcoxon (6/2014-1/2017)

**Program Officer:** Sarah DuRant (6/2014-1/2017)

**Student/Postdoc Representative:** Cynthia Downs (7/2014-1/2018)

### **Division posts:**

Elections occurred in Spring 2014, resulting in the appointment of the current officers for the next several years and the ratification of new bylaws (by a 43-0 vote). However, two critical items must be addressed in 2015: a replacement for Chair Martin, as he moves into the Editor position for *Integrative and Comparative Biology*, and the election of future officers ('Elect' positions). To address both, a nomination committee will be formed during the 2015 business meeting, and new candidates will be identified to run in the Spring 2015 elections.

Also, congratulations to Ken Field, the new *ICB* Editorial Board representative for DEDE!

Thanks so much to the officers that served in the inaugural year of DEDE; it's no small feat to get a new Division up and running!

### **Meeting statistics and current and future symposia:**

DEDE is comprised of 178 members (SICB website, Dec 2014). At the 2015 meeting, DEDE will have a good presence, hosting four oral sessions, one poster session, and several other talks and posters scattered throughout the program.

We have no symposium for 2015, but in 2016 we will sponsor or co-sponsor two disease-related symposia. One symposium is organized by Christopher Boyko and is entitled, "Parasites and Pests in Motion: Biology, Biodiversity and Climate Change". DIZ, DEDE, and TCS are also sponsors. The other is organized by Alexa Fritzche and entitled "Are migratory animals superspreaders of infection?", and is co-sponsored by DAB.

Thanks to Cynthia Downs, DEDE initiated a 'Lunch with an Ecoimmunologist' experience to occur at this and future SICB meetings. This event will enable trainees to get quality face-time with someone established in the field. This year, Marty Martin will participate in the event.

### **Student awards:**

We have ~30 folks competing for the first Best DEDE Student Presentation Award! Fourteen DEDE members graciously dedicated their time to serving as judges and we thank them; we especially thank Loren Merrill for coordinating the judging!

**Next business meeting**

The 2015 business meeting will occur on Sunday, January 4, at 5:45-6:30 in Room 1J-K. The social will be co-hosted with DCE, on January 5 from 8:00-10:00 in the Exhibit Hall B foyer. As in previous years, DCE will host a data blitz in which one DEDE member will participate.

**Additional issues:**

The following articles were written in *ICB* in 2014 to provide insight into the history of ecoimmunology and disease ecology and the role of SICB in the growth of these fields:

1. <http://icb.oxfordjournals.org/content/54/3/353>
2. <http://icb.oxfordjournals.org/content/54/3/338>

For a broader take on DEDE and its role in SICB, see the following article *Science*:  
<http://www.sciencemag.org/content/343/6167/129.summary?rss=1>

## **Division of Ecology and Evolution (DEE)**

Mike Sears, Chair

In 2014, the Division of Ecology & Evolution arranged an exciting line up of events for the 2015 meeting in West Palm Beach and has started to plan for the meeting in 2016.

- 1) The Huey Award competition is entering its third year. The DEE officers conducted preliminary evaluations of abstracts for the 2015 meeting. Five finalists are scheduled to deliver their oral presentations and 3 finalists will be presenting their posters on January 5th.
- 2) A new social event, Beer and Brains, was held at the meeting in Austin. 65 students and 20 mentors met at Banger's beer garden in Austin on Jan 6th. Over free food and beer, mentors and students engaged in conversation focussing on how to succeed in science. Both students and mentors provided rave reviews for this event.
- 3) DEE agreed to support six symposia for the meeting in 2016: “Neuroecology: neural mechanisms of sensory and motor processes that mediate ecologically relevant behaviors”, “Parasites and Pests in Motion: Biology, Biodiversity and Climate Change”, “Evolutionary Endocrinology: Hormones as mediators of evolutionary phenomena“, “ Integrative and comparative biology of venom”, “Beyond the mean: Biological impacts of changing patterns of temperature variation“, and “New Frontiers in the Integrative Study of Animal Behavior: Nothing in Neuroscience Makes Sense Except in the Light of Behavior”.

## **Division of Invertebrate Zoology (DIZ)**

James B. McClintoch, Chair

### **Briefs from the 2014 Austin meeting**

DIZ co-sponsored four successful and well attended symposia at the 2014 meetings in Austin, Texas: 1) The cell's view of animal body plan evolution, 2) Epigenetics: molecular mechanisms through organismal influences, 3) Shaping, dripping, and drinking: surface-tension phenomena in organismal biology, and 4) How to make a zombie.

Anne Boettger did a wonderful job of organizing the judging for the Best Student presentations and poster awards in Austin and also chairing the DIZ committee overseeing student awards.

The best presentation awards winner and runner up awardees for DIZ at the 2014 Austin meeting were:

#### **Best Oral Presentation**

**Winner:** Allison Camp [aacamp@ncsu.edu](mailto:aacamp@ncsu.edu)

A stressful shortness of breath: oxygen consumption patterns associated with molting and thermal challenge in the mayfly *Cleone cognatum*.

**Runner up:** Paul Larson [Larson.309@buckeyemail.osu.edu](mailto:Larson.309@buckeyemail.osu.edu)

Morphology and taxonomy of brooding anemones in the North Pacific Ocean.

#### **Best Poster Presentation**

**Winner:** Susan Grill [susann.grill@vodafone.de](mailto:susann.grill@vodafone.de)

Burrowing in small polychaetes – mechanics, behavior, and muscle structure of *Capitella* sp.

**Runner up:** Mary-Alice Perdichizzi [MaryAlice\\_Perdichizzi@student.unl.edu](mailto:MaryAlice_Perdichizzi@student.unl.edu)

Morphology of the freshwater peritrich ciliate *Scyphidia* n. sp.

#### **Adrian Wenner Strong Inference Award**

**Winner:** Amanda Browne [amandamb@bgsu.edu](mailto:amandamb@bgsu.edu)

Effects of sublethal levels of herbicide 2,4-D on foraging behaviors in the crayfish, *Orconectes rusticus*.

**Student and Postdoctoral Activities** Jenna Moore did a superb job as our new representative for student and postdoctoral fellows. Jenna is a doctoral student at the University of Florida.

#### **Libbie Hyman Award**

Jennifer Burnaford continues to do a wonderful job chairing our Libbie Hyman Scholarship Selection Committee. This year's award went to David Charifson, a first, year graduate student in the laboratory of Dianna Padilla at SUNY Stony Brook. David will use the funds to participate in the marine invertebrate course taught at the University of Washington Friday Harbor Labs this coming summer.

Dawn Vaughn replaced John Zardus on the Libbie Hyman awards committee.

## **Libbie Hyman Fund**

We received another generous gift for Dr. Jarid Simons that brought the principal of the fund to over \$70,000 this year. DIZ is now in a position to meet greater financial needs associated with a single award, or consider making two awards each year. Based on a three-year rotation, the next Libbie Hyman fund raising auction will take place at the Portland, Oregon SICB conference in 2016. The principal of the Libbie Hyman fund is positioned to continue to increase significantly over the coming years as DIZ members retire and are increasingly in a position to donate or seek donations from wealthy individuals.

## **Briefs from the current Beach, Florida meeting (2015)**

Bruno Pernet, our news Program Officer, reports that DIZ is sponsoring six symposia in Palm Beach, Florida: 1) Unsteady aquatic locomotion with respect to eco-design and mechanics, 2) Soft bodies, hard jaws: Phylogenetic diversity of prey capture and processing in jawed, soft bodied invertebrates, 3) New insights into suction feeding biomechanics and evolution, 4) Linking insects and crustaceans: Comparative physiology of the Pancrustacea, 5) Chemicals that organize ecology: Towards a greater integration of chemoreception, neuroscience, organismal biology, and chemical ecology, and 6) Origins of neurons and parallel evolution of nervous systems: The dawn of neural organization.

As in the past, our annual divisional discriminatory funds will be allocated at the DIZ business meeting in Palm Beach following open discussion. I have solicited recommendations via the DIZ newsletter. Current plans are for me to use some of the funds to pay for the digitization of the hard copy historical records of DIZ in my possession so as to be passed on to each future Chair. As in the past, any funds not expended will once again be invested in raising the principal of the Libbie Hyman Award fund.

John Zardus, our former outstanding Program officer, was nominated to replace me as Chair of DIZ upon the conclusion of the Palm Beach meetings. DIZ will be in good hands.

## **Division of Neurobiology (DNB)**

Jim H. Belanger, Chair

### *Briefs from the 2014 Austin meeting*

At the Austin meeting, DNB members contributed twenty-eight talks and fifty posters. Our division also provided support for four symposia:

1. When predators attack: Sensing motion in predator-prey interactions.
2. Vertebrate land invasions - Past, present, and future.
3. Keeping time during animal evolution: Conservation and innovation of the circadian clock.
4. Integrating genomics with comparative vision research of the invertebrates.

Thanks to Duane McPherson, our Program Officer, for his standard outstanding job organizing the program, and a special thanks to our 22 volunteer judges for helping with the Best Student Presentations. We had 21 students competing with some very strong presentations.

### *Best Student Presentation Winners 2013*

Congratulations go to the following students for their excellent presentations:

Best Student Talk: Alexandra Kingston (University of Maryland, Baltimore)

“Visual opsins in non-visual photoreceptors: a common solution for extraocular light detection”

Best Student Poster: Rayna Harris (University of Texas, Austin)

“An integrative neuromolecular and neurophysiological curriculum for the neural systems and behavior course at MBL.”

### *Officers*

This was my last year as Chair, and I am being replaced by Paul Moore (Bowling Green University). This was the first year for Chuck Derby as our Program Officer, and he is doing an excellent job. Lisa Mangiamele (Bowdoin College) continued to serve as Secretary, and Christine Bedore (Duke University) completed her first year as our representative on the Student/PostDoc committee.

We will elect a new secretary for DNB in 2015, and the nominating committee will be soliciting candidates during the 2015 meeting.

### *Activities during the year*

We have begun to collect teaching materials to contribute to a Neurobiology section for the SICB digital library. We expect these to go online over the course of 2015. We have also begun the planning process for a workshop on materials for teaching labs in neurobiology.



*Briefs from the upcoming West Palm Beach, Florida 2015 meeting.*

The Division of Neurobiology will be lending financial support to two symposia that have a neurobiology connection:

1. “Chemicals That Organize Ecology: Towards a Greater Integration of Chemoreception, Neuroscience, Organismal Biology, and Chemical Ecology;”
2. “Origins of Neurons and Parallel Evolution of Nervous Systems: The Dawn of Neuronal Organization.”

The 2015 program does not list primary affiliations of the presenters at the meeting, but based on the abstracts I estimate that DNB members are scheduled to contribute 60 oral presentations and 30 posters over the course of the meeting. This is a slight increase over the Austin meeting (78 presentations). With approximately 750 current members, about 1 in 4 SICB members is affiliated with DNB.

We have dedicated some of our annual divisional discriminatory funds to our joint social in West Palm Beach with DAB. The remainder of the funds have yet to be allocated.