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**Divisions of SICB**

- Animal Behavior
- Comparative Biomechanics
- Comparative Endocrinology
- Comparative Physiology & Biochemistry
- Ecoimmunology and Disease Ecology
- Evolutionary Developmental Biology
- Ecology & Evolution
- Invertebrate Zoology
- Neurobiology, Neuroethology & Sensory Biology
- Phylogenetics & Comparative Biology
- Vertebrate Morphology



**Experiences in Integrative and Comparative Biology – Part 20 Must Enjoy Long Walks on Moonlit Beaches**

*By Karen Martin, SICB Treasurer*

Years ago I used to spend summers in field work researching a quirky fish on the quiet shores of Malibu. Like most scientists, I collaborated with a small group of students and a few colleagues. We worked on the California Grunion, *Leuresthes tenuis*, an endemic coastal species of marine silver-side fish. Typically found only in southern California, what intrigues us most is its unique method of spawning. On moonlit nights, hundreds or thousands of these fish emerge from the waves onto sandy beaches, where they sparkle in the starlight, laying their eggs out of water under a blanket of golden sand.

Legendary in California beach culture, grunion runs are occasions for late night beach tourism. They are observed with amazement and captured with enthusiastic greed – it is completely legal to catch these fish while they are spawning on the beach, but only during certain months of open season, and only with bare hands. When I tried explaining my research to most non-scientists, I was met with amused nods and stories of their own nocturnal activities on beaches – stories that quite often included Too Much Information. Alternatively, people asked if these fish really existed – some had previously tried unsuccessfully to observe a run, or maybe they just considered the grunion an urban legend. Repeatedly I was told that the grunion runs “in the old days” were much better than they are today.

In the summer of 2001, a controversy erupted in San Diego that would change my life. A resident went to the City Council

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**SICB Code of Conduct: Professionalism at Scientific Meetings**

*By Lou Burnett, SICB President*

Learn new things, discuss ideas, meet old friends, make new friends, and nurture and develop networks that can help us in our careers. That’s what the SICB annual meeting is all about. Meetings are especially important for students who are striving to decide if science is something worth pursuing. One year ago, SICB published a **Code of Conduct** for the annual meeting that established some concepts that perhaps stated the obvious that we should all behave in a professional manner as we attend papers, posters, exhibits, and social functions.

The Code begins: *The Society for Integrative and Comparative Biology (SICB) is committed to providing a meeting environment that fosters open dialogue and the exchange of scientific ideas, promotes equal opportunities and equal treatment of all participants, and is free of harassment and discrimination.*

It goes without saying that attending a scientific meeting should be a rewarding experience. It should also be enjoyable. After our 2017 New Orleans annual meeting we surveyed the attendees on a number of issues, as we usually do. We had a total of 715 responses. When asked about the Code of Conduct, 70.5% of the respondents indicated that they had read it, while 29.5% replied they had not read it. The following question was also asked: “Did you witness any behavior at the New Orleans SICB meeting that might be considered questionable or improper as stated in the Code of Conduct?” Most (96.1%) respondents replied No, but 25 individuals answered affirmatively. A number of these affirmative responses documented witnessing

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## SICB Executive Officers

### Louis Burnett

*President, 2017-2019  
College of Charleston*

### Beth Brainerd

*President-Elect, 2017-2019  
Brown University*

### Peter Wainwright

*Past President, 2017-2019  
University of California, Davis*

### Karen Martin

*Treasurer, 2013-2019  
Pepperdine University*

### Kathy Dickson

*Secretary, 2015-2018  
California State University,  
Fullerton*

### Alice Gibb

*Secretary-Elect, 2017-2018  
Northern Arizona University*

### Richard Blob

*Program Officer, 2016-2018  
Clemson University*

### Susan Williams

*Program Officer-Elect, 2017-2018  
Ohio University*

### Brett Burk

*Executive Director  
McLean, VA*

## SICB Program Officer's Report: Updates on the 2018 San Francisco Meeting

*By Rick Blob, Program Committee Chair*

The SICB Program Committee met in San Francisco on October 7-8, 2017, to organize our program of presentations and events for the Annual Meeting, which will be held January 3-7, 2018, at the Marriot Marquis. It's been 5 years since SICB was last held in San Francisco. With the vibrant culture and natural setting that make it such a remarkable place, we expected San Francisco to be a popular venue, and we were not disappointed. We received 1940 abstracts – an increase over our record from last year for New Orleans – with roughly 1000 talks and 900 posters. That translated into 151 oral platform sessions (another record) in addition to 33 oral sessions for our 11 symposia. If you're keeping score at home, that's 14-15 concurrent sessions each day, as well as 3 afternoon poster sessions – all fit into our 4-day scientific program. Continuing traditions from previous years, program highlights in addition to the symposia will include numerous sessions of talks and posters complementary to the symposia, as well as several special sessions dedicated to divisional Best Student Presentation competitions. Assembling the larger program, with less lead time than last year, was a big job, and I want to thank the entire Program Committee for the effort they put into this service to SICB.

Beyond our platform and poster sessions, San Francisco will have a full set of evening keynote speakers for the Bartholomew,

Bern, AMS, and Moore Lectures. We are also giving special emphasis this year to the topic of Science Communication. In addition to two symposia with a focus on this subject, we are excited that renowned science journalist and book author **Carl Zimmer** has accepted our invitation to give the SICB Plenary Lecture on the first evening of the meeting, January 3. Drawing from his work for the *New York Times* and other venues, his talk is titled, "Science and Scandal: Reporting on Biology in an Age of Controversy," and is sure to be both timely and engaging. We have an extensive set of workshops as well. Set some time aside at lunch for three SICB committee workshops (Broadening Participation, Public Affairs, and Student/Postdoctoral Affairs); our regular workshop offered by NSF; a workshop on publishing tips for students and postdocs sponsored by the *Journal of Experimental Zoology*; a return of the popular "Sketchnotes" workshop first offered last year; a workshop associated with the "Science in the Public Eye" symposium; and a Transcriptomics Brownbag. Additional evening workshops will include the Teaching and Learning-X (TALX) sponsored by the Educational Council, and a workshop on the Origination of Cell Types sponsored by the Division of Evolutionary Developmental Biology. In addition, a Polar Workshop and the ICB Editor's Challenge on "Stress" are both planned for the day of January 3, in

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## Editor-in-Chief Selected for SICB's New Open-access Journal

Plans for launching a new SICB journal for primary research have progressed rapidly in recent months. We are delighted to report that Adam Summers has been selected as the Founding Editor-in-Chief, after a national search that yielded many excellent candidates. The new open-access journal will complement our current journal:

*ICB* publishes symposia and other invited papers, and the new journal will focus on contributed papers from the SICB membership and beyond. We are now in the process of identifying a publisher. The new journal will begin accepting papers in 2018 for a January 2019 launch. ■

**Member Benefit:**

25% Discount on  
Oxford University  
Press Books

Go to the SICB  
Home Page



## New process for NSF grant proposal submissions for core programs in BIO

The following is excerpted from the recent NSF Dear Colleague Letter available at <https://www.nsf.gov/pubs/2018/nsf18011/nsf18011.jsp>:

The Directorate for Biological Sciences (BIO) is notifying members of the research communities of important changes to the core program solicitations as noted below, effective in calendar year 2018. In order to promote interdisciplinary research that crosses biological scales and traverses current divisional boundaries, **BIO will implement a "no-deadline," full-proposal mechanism for receiving and reviewing proposals submitted to core programs in the Division of Environmental Biology (DEB), the Division of Integrative Organismal Systems (IOS), the Division of Molecular and Cellular Biosciences (MCB), and to the programs in the Research Resources Cluster of the Division of**

**Biological Infrastructure (DBI).** For these changes to take effect, the core programs in DEB and IOS are discontinuing use of the preliminary proposal mechanism in 2018. **There will be no call for preliminary proposals in January 2018.**

All four divisions will release new solicitations in the middle of calendar year 2018, inviting proposals to be funded with FY 2019 funds. There will be no deadlines for submissions to any of the new solicitations.

For additional information, see [https://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=243306&org=BIO](https://www.nsf.gov/news/news_summ.jsp?cntn_id=243306&org=BIO) and FAQs at [https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf18012](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18012).

Please note that you can sign up to receive NSF BIO updates at [https://www.nsf.gov/funding/pgm\\_list.jsp?org=BIO](https://www.nsf.gov/funding/pgm_list.jsp?org=BIO). ■

## SICB President's Message

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individuals taking photos of slides in oral sessions and in poster sessions, which is a violation of a stated policy on this matter, but these infractions are not a part of the Code of Conduct. Others, however, said that they witnessed more egregious behavior that was covered by the Code. When asked to comment generally on the Code of Conduct, there were 119 responses. These responses indicated overwhelming support of the policy, and a few suggested that there needs to be more "teeth" in enforcement.

Nearly every scientific society has a code of conduct for anyone who attends a scientific meeting, including members of the organization who are professional scientists, members who are students, meeting staff, exhibitors, and guests. The purpose of such a code is to remind all of us that our gathering must be welcoming to all participants

and must be free from any form of discrimination, harassment, or retaliation.

Since January, the SICB Executive Officers have spent considerable time reviewing the Code of Conduct and making adjustments. SICB has also obtained input from legal counsel in considering revisions. A revised Code of Conduct is now in the final stages of discussion and evaluation by the full SICB Executive Committee. The intent is to approve a revised Code of Conduct that will be made available to meeting registrants in early December.

We will also remind meeting attendees at every opportunity that it is up to each of us to ensure that our meetings are productive, stimulating, and enjoyable. It is incumbent on each of us to see that we have a meeting environment that fosters open dialogue and the exchange of scientific ideas, that promotes equal opportunities and equal treatment of all participants, and that is free of harassment and discrimination. ■

## Results of the Spring 2017 Elections

By Kathy Dickson, Secretary

The results of the 2017 Spring elections were previously posted on the SICB website, and are officially reported here:

The SICB elections closed on June 2, 2017, after being open for one month. A total of 317 votes for Society-wide offices were counted, representing participation by 14% of the eligible voters.

The results of the Society-wide and Divisional Officer elections are summarized below. Thanks to all who ran for office, and congratulations to those who were elected.

| Office                            | Candidate Elected  | Term   |
|-----------------------------------|--------------------|--|
| <b>SICB Society-wide offices:</b> |                    |  |
| Treasurer-Elect                   | Miriam Ashley-Ross | 1/2018-1/2019, then Treasurer<br>1/2019-1/2022 |
| Chair of the Educational Council  | Bram Lutton        | 1/2018-1/2021                                  |
| Member-at-Large                   | Ulrike Müller      | 1/2018-1/2021                                  |
| <b>Divisional Offices:</b>        |                    |  |
| DAB Secretary                     | Erica Westerman    | 1/2018-1/2021                                  |
| DCB Program Officer               | Philip Anderson    | 1/2018-1/2020                                  |
| DCB Secretary                     | Sandy Kawano       | 1/2018-1/2020                                  |
| DCE Chair-Elect                   | Kathleen Hunt      | 1/2018-1/2020, then Chair<br>1/2020-1/2022     |
| DCE Secretary-Elect               | Tim Greives        | 1/2018-1/2019, then Secretary<br>1/2019-1/2021 |
| DCPB Secretary                    | Marshal McCue      | 1/2018-1/2020                                  |
| DEDB Program Officer-Elect        | Matthew Rockman    | 1/2018-1/2019, then DPO<br>1/2019-1/2022       |
| DEDB Secretary-Elect              | Prashant Sharma    | 1/2018-1/2019, then Secretary<br>1/2019-1/2021 |
| DEDE Program Officer-Elect        | Cynthia J. Downs   | 1/2018-1/2019, then DPO<br>1/2019-2021         |
| DEDE Secretary-Elect              | Ken A. Field       | 1/2018-1/2019, then Secretary<br>1/2019-2021   |
| DEE Secretary-Elect               | Martha Muñoz       | 1/2018-1/2019, then Secretary<br>1/2019-1/2021 |
| DIZ Chair-Elect                   | Kenneth Halanych   | 6/2017-1/2018, then Chair<br>1/2018-1/2021     |
| DNNSB Chair                       | Michael Baltzley   | 1/2018-1/2021                                  |
| DPCB Chair-Elect                  | David C. Blackburn | 1/2018-1/2019, then Chair<br>1/2019-1/2022     |
| DPCB Secretary-Elect              | Haley D. O'Brien   | 1/2018-1/2019, then Secretary<br>1/2019-1/2022 |
| DVM Program Officer-Elect         | Mason Dean         | 1/2018-1/2019, then DPO<br>1/2019-2021         |

All changes to the SICB Bylaws and Constitution were approved and are now posted on the SICB website.

For the naming of the Best Student Presentation Awards for the Division of Animal Behavior, Marlene Zuk received the highest number of votes and Elizabeth Adkins-Regan the second-highest number. ■

Support your  
favorite SICB fund.  
Click on the  
"donations" button  
on the home page.

[www.SICB.org](http://www.SICB.org)

## SICB Finances – Treasurer’s Report

By Karen Martin, Treasurer

This report will focus on SICB’s endowment. There are twelve named funds which will be examined in detail below. This past fiscal year was a good one for SICB’s endowment. The invested funds managed for SICB started FY 2017 at \$1,287,021, of which the named funds comprised \$1,111,212. On June 30, 2017, the end of the fiscal year, the investments were valued at \$1,515,314 with the named funds comprising \$1,298,360.

The funds are earmarked for particular uses to support the Society, and therefore each year some money is transferred out for those uses. The amount spent is no more than 4% for each fund, and the idea is that investment dividends and returns will allow the funds to maintain value and grow over the long term.

In 2014 the Finance Committee re-normed the named funds as a result of some changes to the way that the investment returns were allocated and to correct for movement of some funds to unrestricted uses in the past. The past three years, stock market losses have taken a toll on some of the funds but, at the end of FY 2017, thanks to a good year for the stock market and continued donations from the members of SICB, the funds are now in their best shape ever. This means that more will be available for the uses earmarked by each fund.

Taking a closer look, among the larger named funds (Fig. 1), the Mangum and GIAR funds are used every year for partial support of student

travel and research. The Bartholomew fund supports the Bartholomew awardee and partially supports the evening social that follows the Bartholomew lecture. As can be seen, these funds lost value in the previous three years when returns did not keep up with expenses, but all recovered this past year. The Hyman award is also used every year, to support student travel for research. The Hyman Fund has also benefitted greatly from repeated donations from Jarid Simons and from auction funds. The Symposium Support funds are available but have not often been used; thus they remained stable for the past three years, posting growth last year as well.

All four of the medium-sized named funds (Fig. 2) are used in different ways at the present time. The Moore fund has been protected from use to allow it to build up after nearly disappearing, so currently the Moore speakers and social are funded through the annual meeting and general funds. This fund also received a major donation from Jarid Simons. The Gans fund does not make an award every year. The Prosser fund is available to support certain types of symposia, but it has not been used, and therefore it was steady until last year, when it grew. The Bern fund has been protected from use to allow it to grow and has had tremendous support from multiple donations from the Division of Comparative Endocrinology. In the future this fund will be

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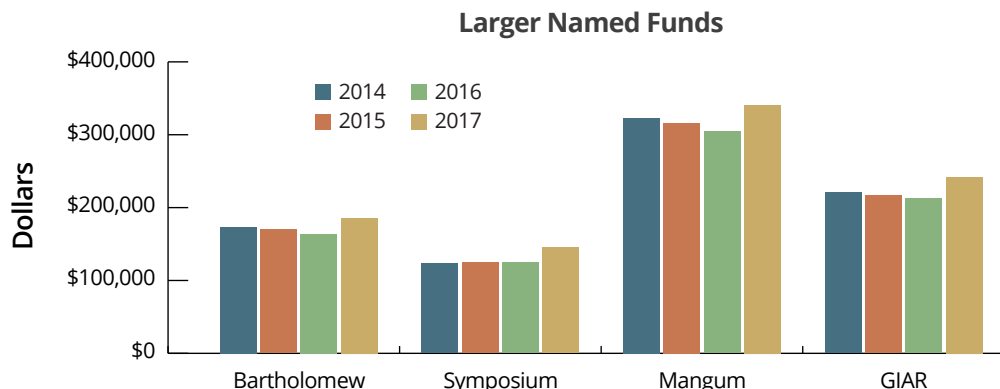


Figure 1: Named funds over \$100,000





## ***Integrative and Comparative Biology* update and first Editor's Challenge to define Stress**

By Marty Martin, Editor, *Integrative and Comparative Biology*

Along with the Associate Editors of *Integrative and Comparative Biology*, I invite you to the first annual **ICB Editor's Challenge**, a 1-day workshop at the Society for Integrative and Comparative Biology (SICB) meeting in San Francisco on January 3, 2018. **The challenge this year is to define stress.**

This workshop will proceed as follows. A few invited speakers will give 10-minute talks on their definitions of stress. In between each 10-minute talk, the floor will be open for 10 minutes to engage the speakers or the audience on related topics. Following all talks, all participants will work in small groups to discuss stress. Aspects of these discussions will eventually be transformed into synthetic papers, which will be reviewed for publication in *Integrative and Comparative Biology*.

***We do not have funds to cover participation or travel, but the workshop takes place on the first day of the meeting, January 3, 2018 (i.e., the day of the first plenary talk).***

If you are interested, please provide the following information at this SurveyMonkey link [www.surveymonkey.com/r/KXGTF3C](http://www.surveymonkey.com/r/KXGTF3C), which will expire on 12/01/17.

If you have questions, please direct them to Conor Taff ([cct63@cornell.edu](mailto:cct63@cornell.edu)) or Cedric Zimmer ([cgz8@cornell.edu](mailto:cgz8@cornell.edu)).

On behalf of the Associate Editors and myself, thanks for considering joining us!

### **Types of manuscripts to submit to *Integrative and Comparative Biology***

We at *Integrative and Comparative Biology* (ICB) are always willing to consider solicitations for manuscripts. Although the majority of papers in ICB come from symposia at the SICB annual meeting, journal contents are beginning to diversify. Several new forms of papers are starting to appear including invited reviews, perspectives, and proceedings from meeting workshops and other events. ICB is also willing to consider publishing papers from symposia for other societies as well as short series of papers on a topic, not just single manuscripts.

If you would like us to consider your work for publication, please send your proposal to me at [editor@sicb.org](mailto:editor@sicb.org), including the following information:

- A (tentative) title of your paper(s)
- A short synopsis of the planned paper or abstract of the completed work
- For symposia or series of special topics papers, a list of authors, affiliations, and tentative titles
- A short justification for the fit of the proposal or manuscript to ICB
- Contact information for the lead author and/or series/symposium organizer(s)

For more information on publishing in ICB, please view our Instructions to Authors. ■

## **Broadening Participation Committee Report**

By Stacey Combes, Chair

The goal of the Broadening Participation (BP) committee is to increase the diversity of SICB and the field of integrative biology at all career stages, in terms of gender, sexual orientation, race/ethnicity, ability/disability, and socioeconomic background. The BP committee works to increase the diversity of SICB by providing travel awards to help

underrepresented attendees defray the costs of attending the annual meeting, by hosting a workshop and an evening social at the meeting, and by organizing a one-on-one Meeting Mentorship program. All SICB members are welcome and encouraged to attend BP events during the annual meeting.

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## Development Committee Report

By Robert Roer, Chair

During FY 2017 (7/16-6/17), donations to the Society totaled \$32,560. This helped bolster the balances of our named funds and brought the Davis fund to more than \$25K for the first time, making it sustainable. However, contributions were down compared to the previous two years, both of which saw an unusually large donation.

The Development Committee has identified a major focus for the coming years. This is to take the GIAR and Mangum funds to a fully self-supporting level. As each fund currently expends approximately \$40K per year in support of student members of SICB, it would require balances of approximately \$1 million in each fund to realize this goal. The current balances on these funds are slightly more than \$210K and \$294K, respectively (not counting capital gains for this FY). So, we have a long way to go, and your participation is necessary for us to succeed in this effort.

One way to further increase your support of the GIAR fund is to buy SICB apparel. The sale of polo and T-shirts at the New Orleans meeting raised an additional \$2,183! To help increase this revenue, the Development Committee is working on a SICB on-line apparel store. Stay tuned for details at the Annual Meeting.

If you attended the meeting in the past few years, you have seen these donors

recognized by ribbons attached to their badges; the colors of the ribbons correspond to various tiers of giving.

There are five donor levels:

- Bronze – up to \$50
- Silver - \$51-100
- Gold - \$101-250
- Platinum - \$251-500
- Diamond - \$501 and up

It would be wonderful if **everyone** attending this year's meeting would have a ribbon attached to their badges! Any contribution, no matter what amount, makes a difference and will be recognized. Please consider donating whatever you can afford and support the very important missions of the endowed funds.

Please also consider including SICB in your estate plans. This legacy is an excellent way to provide for the continuing health of our Society by including SICB in your will or as a beneficiary.

To make a donation on-line or to learn about planned giving, go to the SICB home page ([www.sicb.org](http://www.sicb.org)) and click on "Donate to SICB" on the menu on the left side of the page.

Thanks, and we look forward to seeing you in San Francisco! ■



## Educational Council Report, announcement of 2018 Morse Award and 2018 Moore Lecturer

By Bram Lutton, Chair

The Educational Council is very much looking forward to the 2018 meeting and has several exciting events we hope SICB members consider while in San Francisco. These include the annual Teaching and Learning workshop, the John A. Moore Lecture, the M. Patricia Morse Award for excellence and innovation in science education, and two exciting and informative science education and communication symposia.

This year's **Teaching and Learning Workshop** will focus on easy to *Do it Yourself* (DIY) citizen science, presented by Larry McPhee of Northern Arizona University. The workshop will be a two-hour round table format with drinks and desserts (YUM!). Participants will have an opportunity to experience six examples from the many available fun and informative activities on Larry's website

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and announced that there were no more grunion in San Diego, because, she insisted, the beach maintenance workers had killed all the eggs. She demanded that they stop the daily raking of the beaches to remove kelp and debris. Immediately the beach communities reacted, insisting the clean-up of the beaches was necessary to support the huge tourism industry. The beach maintenance workers were caught in the middle, and responded by insisting they were doing no harm. Ordered by the City Council to stop their maintenance to protect the eggs, they made one last effort to rake up large amounts of kelp, but left them in piles to rot in the middle of these popular recreational beaches.

A local organization, Project Pacific, was called upon to address the situation. Its then-president, Melissa Studer, called together a blue-ribbon panel of experts to develop a plan. This group included representatives from resource agencies, environmental groups, and two local ichthyologists from Scripps Institution of Oceanography, Richard Rosenblatt and Jeff Graham. They decided a scientific study was necessary to determine the effects of the maintenance practices. However, none

of them had ever worked on the California Grunion before. A few volunteers from the community went out that August to watch for grunion runs, and came back with discouraging news; almost none were seen on any of the city beaches.

Jeff Graham had been on my dissertation committee so I contacted him with some suggestions for the required study. He put me in touch with Melissa and with the city beach manager, and added me to the blue ribbon committee. As things progressed, instead of an advisor I became the lead investigator for this study. Together we determined to set up a network of observers for the spawning runs for the next grunion season, and to use the data from the volunteers to find any locations with runs in order to test whether grooming or raking was harmful to the nests in the sand.

At this point I had been working on projects with grunion for about 5 years. People often said they wanted to join me to watch the runs, but when the actual night arrived, it was usually “too late” or “too cold” or “too much after or before a busy day at work” and most people cancelled. So even as we developed a plan for recruiting volunteers, my expectations were pretty low. In my most optimistic hope, we might have 30-40 people show up for a training workshop, which would be scarcely enough for the 10 beaches we hoped to monitor.

Jeff Graham was interim Director of the Birch Aquarium at Scripps at that time. He offered the venue to hold the evening training workshop. He sweetened the deal by granting free admission and promising to lead a behind-the-scenes tour of the shark tanks at the end of our training session. The combination of this beautiful venue, the special tour, and the opportunity to solve a community controversy about a charismatic animal brought out the best in people. As the date of the workshop approached we had over 100 respondents, and we had to schedule a second workshop on a later date to accommodate everyone, over 200 volunteers in all.



*Field work with beach maintenance workers, photo by K. Martin*

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*Grunion Greeters, photo by J. Flannery*

Even though almost no grunion had been spotted the year before, I could not imagine that grunion were no longer in San Diego. The runs of this species are somewhat predictable, occurring within a two-hour window after the high tides following a new or full moon in spring and summer months. This schedule is printed by the California Department of Fish and Wildlife (CDFW) and available in local tide tables and newspapers throughout California. Boyd Walker elucidated the schedule in his dissertation research on Scripps Beach, by going to the beach every night that might hold a grunion run for three years. He also asked colleagues to observe for grunion runs on two nights in April at other beaches along the coast in 1947.

Over the years, the folks at CDFW somehow shifted the dates of the expected grunion runs. Walker identified the day of the full or new moon plus the following 3 days as the most likely days for grunion to run. He noted that the 3rd and 4th days are usually the best for observing the runs. Somehow, someone confused the information, such that their predictions started on the 3rd day after the moon phase and went for 3 more days. People following the advice of going

on the 3rd or 4th day of the predicted series would hit the beach the 5th and 6th nights after the moon phase. The run had already peaked and the observer would have been lucky to see any fish at all.

My early attempts to study grunion were frustrated by this lack of synchrony. Boyd Walker had retired from a career at UCLA some years before, but still lived nearby. I read his excellent dissertation and asked for his advice repeatedly once I started working on this species, and he clarified the actual predictions he had made. This made all the difference for my research, and it made me suspect that the previous efforts to find grunion in San Diego had also been on the wrong nights, as well as too late in the season.

With great enthusiasm, I shared the biology of grunion, and Melissa laid out the expectations for the volunteers at the training workshops: sign up for the specific nights and beaches we had targeted for the study, for runs taking place in April, May, and early June, the prime season for grunion runs. The volunteers responded with delight; they loved the behind-the-scenes aquarium tour and the whole idea of watching for a mysterious event that might, or might not, occur in the middle of the night. We finished the workshops filled with anticipation. We called these citizen scientists Grunion Greeters.

With colleagues at Cabrillo Marine Aquarium I previously developed a metric for measuring the strength of grunion runs, called the Walker Scale after Boyd. With help from software experts we posted an online data acquisition portal at a time when this was quite rare. We also gave people the option to fax or mail in paper data forms if they did not have access to a computer, as home computers were exceptional rather than standard at that time. We set up a phone "hot line" to take messages reporting larger runs, if any occurred, so the scientific team could respond quickly and set up the field experiment.

Then came the actual nights when volunteers were expected to go to the beaches.

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Based on my past experiences, I doubted the strength of people's commitments. But, much to my surprise and pleasure, show up they did – both the people and the grunion. The reports came in online, the hot line was called from cell phones to express astonishment at this spectacle happening at that exact moment, and we were able to organize the field study to discern whether or not beach grooming was harmful to the nests.

Luckily for us, the beach manager at that time, Dennis Simmons, is an intelligent person open to new ideas. Once the City Council got behind the plan for a scientific study, he directed his maintenance crew to cooperate with us and offered us any assistance they could give. We wound up digging for eggs together using hand trowels to explore quarter-meter transects once we identified specific nesting sites from the Grunion Greeter data. My four research students and I could not have done this work without their help, moving literally tons of sand over many hours that summer.

Spoiler alert – no surprise, really, driving heavy equipment on top of nesting sites and raking up sand is quite a disturbance. The few eggs that might survive that experience die soon after from desiccation. This was not an unexpected result, but we were working with people who had been raking the beaches for many years, and the local

beach businesses definitely wanted the raking to continue.

Solution: modify the raking protocol. The grunion run after the highest tide, so their eggs are in the upper intertidal zone of the beach. Above that zone, no eggs are present. If we identify the top of the intertidal zone, we can halt grooming below that spot but continue raking above it without affecting the grunion eggs. As all marine biologists know, tides vary on daily, monthly, and annual cycles. The beach maintenance workers knew where the tides reached every night, and could easily identify the highest tides following the new and full moon. Leaving a line of wrack or kelp to mark this boundary, they could continue to rake the landward side while avoiding the seaward side for the following weeks, thereby protecting the grunion nests and their developing embryos.

Dennis developed a written protocol for beach grooming during grunion season and it was adopted as policy by the San Diego City Council later that year. He contacted other beach managers in nearby cities and explained how to modify grooming to protect grunion. He became so convinced of the importance and simplicity of this protocol that he wanted to make its use even more widespread, so together we convened a working group of beach managers, environmental organizations, and coastal scientists to meet at Pepperdine University to talk about issues of common concern, for management of recreational beaches in heavily used urban areas along the coast of California.

We started with about a dozen people, and increased involvement to include municipalities, state parks, lifeguards, surfers, the Department of Fish and Wildlife, the Coastal Commission, the National Marine Fisheries Service, US Fish and Wildlife Service, and many others. In 2007 we incorporated as a non-profit, the Beach Ecology Coalition, with our mission to enhance ecosystem conservation and beach management to balance natural resource protection and recreational use. We now have several

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*Beach Ecology Coalition meeting on the sand at Doheny State Beach*

## Experiences in Integrative and Comparative Biology – Part 20

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hundred people from dozens of agencies that meet twice a year to develop new ways to improve the ecological management of beaches. The Grunion Grooming Protocol is used by most of coastal California, and this increased attention from resource agencies means that grunion nests are much better protected from coastal construction and other activities than in the past.

The Grunion Greeters, after that amazing beginning year, continue to follow the grunion even today. We were provided funding for many years through the National Marine Fisheries Service, and we developed a network of volunteer citizen scientists throughout the traditional habitat range of this endemic fish, from northern Baja California to central California. In 2005, we heard that grunion were being seen in San Francisco Bay, and we partnered with the Port of Oakland to train volunteers there. Grunion Greeters identified a range extension of this species north of San Francisco shortly thereafter. New beaches continue to be reported, and an online portal is still available for reports of observations. Grunion Greeters have reported data through a couple of oil spills and through last year's El Niño-Southern Oscillation event. Next year, we will work with the East Bay Regional Parks District to hold a Grunion Greeter workshop on Alameda Island in San Francisco Bay. Over 5000 people have been trained through our Grunion Greeter workshops, including many environmental consultants. Our monitoring methods are used by environmental consultants, resource agencies, and even the US Army Corps of Engineers during coastal projects during grunion spawning season.

Because California Grunion cannot be assessed by traditional fisheries methods, our citizen scientists are the only organization monitoring the population. It is literally impossible to obtain data about this species except by observation during spawning runs: they do not come up in trawl surveys and they do not take a hook. Thanks to the Grunion

Greeters, we have the only long-term data set for this species. With this, we have been able to do some population genetics, compare ecotypes across geographic areas, and examine the biology of their development and environmentally cued hatching.

This experience changed the way I work. Now, in addition to my scientific colleagues and students, I partner with many different organizations – including Surfrider Foundation, Golden Gate National Recreation Area, California State Parks, the Audubon Society, Cabrillo Marine Aquarium, Birch Aquarium at Scripps Institution of Oceanography, Ocean Institute in Dana Point, Aquarium of the Pacific in Long Beach, Santa Barbara Museum of Natural History, and Monterey Bay Aquarium Research Institute, as well as government agencies. We communicate findings frequently with beach managers and coastal workers, regulatory agencies, and the press to encourage positive changes in beach management. Although there is sometimes an overwhelming demand for information, this work has had important impacts for habitat monitoring on sandy beaches and for the involvement of stakeholders in management practices. New beach management practices are in place throughout the habitat range of the grunion as a result. Our protocol for beach grooming during grunion season is in effect at local city, county, and state agencies on sandy beaches throughout California.

Having stepped out of my comfort zone in academia, I have found a great deal of enlightenment and energy from the many Grunion Greeters and beach professionals that now have become both friends and collaborators. I encourage more scientists to make the effort to involve the public in their work and to become active in stakeholder issues in their research sites. As much as I enjoy working with students at the university and seeing what they accomplish, I suspect that my work in the community may have a more lasting impact on the world. To learn more about grunion or the Beach Ecology Coalition please visit our web sites: [www.Grunion.org](http://www.Grunion.org) and [www.BeachEcologyCoalition.org](http://www.BeachEcologyCoalition.org). ■



## SICB Program Officer's Report

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advance of the meeting. It's hard to avoid overlap and conflicts with this many offerings, but the diversity and number of these sessions will give abundant opportunities for stimulating perspectives and interactions. However, with the growth of our meeting, we have recognized that making those kinds of connections can, sometimes, be challenging. To help promote interactions, this year we will be piloting a new "Divisional Living Room" initiative, where Divisions can host a conference room for a day, where members can come together to have discussions, present topical materials, and otherwise have a chance to associate within the broader meeting. Stay tuned for details!

Besides planning the program for San Francisco, the other job of the SICB Program Committee was to select the Symposia for the 2019 SICB meeting in Tampa. The proposals this year were outstanding, and we selected 12 that span all SICB divisions. I'll report more on these selections in the next newsletter...but the time is NOW to start thinking about proposals for 2020 in Austin! The annual meeting is a great place to start making plans while new ideas and potential collaborators and speakers are all around. Please find me, or another member of the program committee, if you'd like to discuss ideas, or find out more about the symposium proposal process (or, to get started see [www.sicb.org/resources/SICB%20Symposium%20Policies%20and%20Guidelines%20Final.pdf](http://www.sicb.org/resources/SICB%20Symposium%20Policies%20and%20Guidelines%20Final.pdf)).

As exciting as the scientific program will be, don't miss the opportunity to explore San Francisco while you're in town. The Marriot Marquis is a short walk from major attractions, including the San Francisco Museum of Modern Art and the Contemporary Jewish Museum, and somewhat less major attractions like the Museum of Ice Cream. San Francisco also has internationally acclaimed restaurants, and it is still possible to catch rides on the famous cable cars. With our expert guides from Burk & Associates, Inc., we'll be working with folks from local

universities to put together an insider's guide of "Notes from the Underground" with suggestions for seeing the city. Travel information is already posted on the SICB website ([www.sicb.org/meetings/2018/travel.php](http://www.sicb.org/meetings/2018/travel.php)). The Marriot Marquis is easily accessible by train – take the BART from SFO airport to the Powell Street stop for under \$10, and enjoy a quick, 2-minute walk. The airport is also served by Super Shuttle (\$17 one way with advance reservation) as well as taxis (~\$45) and Uber (~\$34).

The Program Committee includes Susan Williams (Program Officer-Elect), Scott MacDougall-Shackleton (DAB), Jake Socha (DCB), Ignacio Moore (DCE), Wes Dowd (DCPB), Yui Suzuki (DEDB), Greg Demas (DEDE), Chris Tracy (DEE), Linda Walters (DIZ), Jeff Riffell (DNNSB), Todd Oakley (DPCB), Brooke Flammang (DVM), Elizabeth Davis-Berg (AMS), and John Zardus (TCS). In addition, this year we were assisted by Michelle Johnson (DAB). We were also joined by Thom Sanger from the Public Affairs Committee, who helped compile suggestions for presentations to include in press releases, and by ICB Editor-in-Chief Marty Martin. Assembling the program is a lot of work, but this group has risen to every challenge and made the process an enjoyable experience that I have looked forward to each year. Please thank these hard-working folks if you see them at the meeting – and thank you for contributing your best science to SICB! ■





**SICB Finances – Treasurer’s Report**

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tapped more to help support the Bern lecture and social. The Bern lecture was previously funded by Wiley, but now must rely on Society and DCE funds.

It has been my goal as Treasurer to bring all named funds into compliance with the Society’s stated minimum of \$25,000. When I took office, five of the twelve funds were under this benchmark. As you can see (Figs. 2 and 3), thanks to the efforts of many, the Moore, Bern, Davis, and Skinner funds all have cleared that hurdle as of the end of FY 2017. The Wenner fund remains about half that, and the Executive Officers decided that this fund will no longer receive investment income from the endowment as a result. The Wenner fund is used for awards at a relatively low rate and should last for many years even without additional funds.

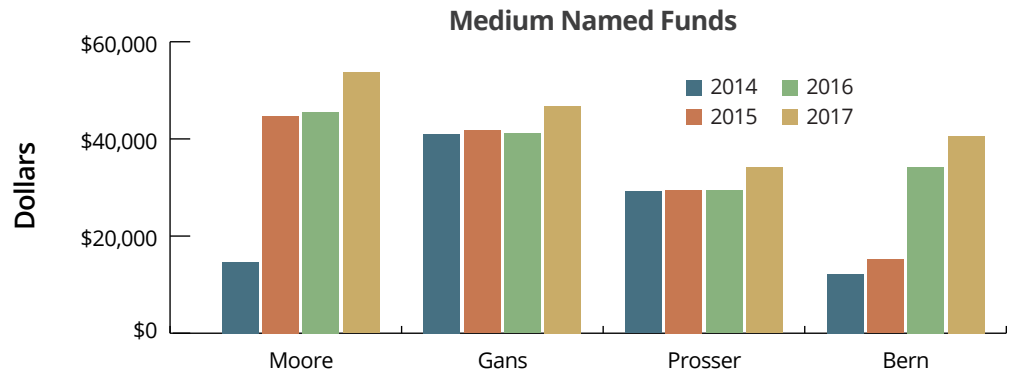


Figure 2: Named Funds between \$25,000 and \$60,000

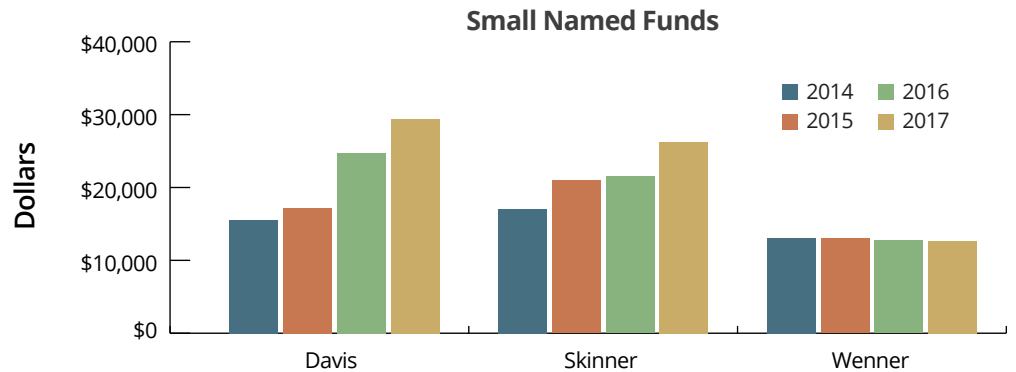
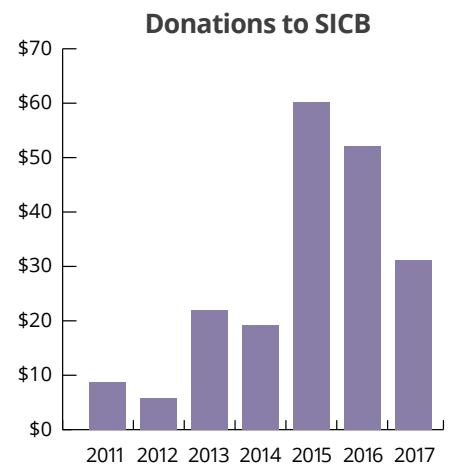


Figure 3: Named funds under \$30,000

Donations this past year were down from the previous year (Fig. 4), but still strong at \$31,106, including another generous donation from Jarid Simons making up about half of that amount.

At the annual meeting Business Meeting, you will receive more information about the operations and expenses of the Society. I will be happy to answer any questions you may have. We are working on preparing more informative and timely reports to the Division officers regarding these funds and their Division funds to facilitate better planning for their appropriate uses. Thank you for your support and good service. ■



## Broadening Participation Committee Report

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### Donation by the Gans Collections and Charitable Funds, Inc., for BP Travel Awards

The BP Committee was fortunate to receive a generous donation from the Gans Collections and Charitable Funds, Inc., a foundation established by renowned vertebrate morphologist and functional anatomist Carl Gans, to provide additional support for our travel award program this year. To learn more about the foundation and additional opportunities for conference travel grants, please visit [carlgans.org](http://carlgans.org).

The BP committee grants travel awards, typically capped at \$500 (except in cases of extremely high travel costs), to help defray the expense of attending the annual meeting. These awards are available to any SICB members who are underrepresented and/or who enhance the diversity of experiences and perspectives within their field, geographic region, or institution. Note that BP travel awards are not restricted to students, and we are especially interested in ensuring that post-doctoral and junior faculty members have the support they need to attend the SICB meeting.

Recipients of BP travel awards will be honored at the **BP evening social**, to be held this year at the **ThirstyBear Organic Brewery** – San Francisco's first and only certified organic craft brewery, located ~3 blocks from the conference venue – at 7-9 PM on Saturday, January 6th. All SICB members are welcome to attend and help celebrate the accomplishments of our BP travel award recipients.

### NEW Broadening Participation Meeting Mentorship Program for 2018 meeting

Following a successful trial run with last year's BP travel award recipients, the Broadening Participation Committee will be organizing a BP Meeting Mentorship program, which will be open to the broader SICB community this year. This program

provides all SICB members who are underrepresented and/or who enhance diversity within their field, region, or institution with the opportunity to be matched with a "meeting mentor" – a more experienced student, post-doc, or faculty member who has attended SICB several times. Mentors will help their mentees make the most of the meeting, offering tips on which sessions and events to attend, providing career-related advice, and attending events with their mentee to help expand their professional network at SICB.

We encourage all SICB members to consider taking part in this program and to offer their time to serve as a meeting mentor – the experience of direct one-on-one mentorship can have a huge impact on a younger member's experience of the SICB meeting, particularly for first-time attendees or those with less developed networks within SICB. If you are interested in taking part in the BP Meeting Mentorship program, either as a mentor or a mentee, please indicate your interest on the meeting registration form, or see the Broadening Participation web page at [www.sicb.org/meetings/bp](http://www.sicb.org/meetings/bp) to read more about the expectations for participating in the program and to indicate your interest.

### Mentoring Workshop at the 2018 Meeting in San Francisco

The BP Committee is fortunate to be hosting a special workshop at noon on Saturday, January 6th entitled "*Beyond Traditional Mentors: Mentoring Moments and Networks.*" The workshop will be led by Dr. Claire Horner-Devine, a professional consultant and workshop leader who focuses on professional development programs for early career scientists from underrepresented groups in STEM. The workshop will be an interactive session focused on navigating participants' current mentoring landscapes, as well as creating new opportunities to get the mentoring they want and need to thrive. Participants will complete a mentoring map and assess areas where they are receiving the mentoring they need

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*Bill Hoese, winner of the 2018 M. Patricia Morse Award for Excellence and Innovation in Science Education*



*Katayoun Chamany, who was selected to present the John A. Moore Lecture at the 2018 annual meeting.*

## Educational Council Report

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([www2.nau.edu/lrm22/lessons](http://www2.nau.edu/lrm22/lessons)). The workshop will take place at 7-9 pm on Saturday, January 6th. Look for a brochure at registration, and the Ed Council would appreciate an e-mail for a head count if you think you'll join us ([chair.edcouncil@sicb.org](mailto:chair.edcouncil@sicb.org)).

Following in the footsteps of Kenyon College's Dr. Chris Gillen, who won the **Morse Award** in 2017, we have another exceptional scientist and educator (and SICB member!) to celebrate in 2018, Dr. Bill Hoese of California State University Fullerton!!! The Educational Council is excited to honor Dr. Hoese by announcing his award and commending his significant efforts, at the beginning of the Moore Lecture on January 7th!

So be sure to stick around on the 7th because you won't want to miss the annual **Moore Lecture**, by Dr. Katayoun Chamany, Mohn Family Professor of Natural Sciences and Mathematics and Associate Professor of Biology at the New School in New York City. To promote science education reform, Dr. Chamany has developed seminars, workshops and educational materials that reflect an interactive and case-based method of teaching and learning, with a strong emphasis on infographic thinking ([www.fastcodesign.com/1668987/why-infographic-thinking-is-the-future-not-a-fad](http://www.fastcodesign.com/1668987/why-infographic-thinking-is-the-future-not-a-fad)).

Dr. Chamany firmly believes that biology is accessible and relevant to everyone, and that a basic understanding of biology is important for a democratic society. For this year's San Francisco finale, join us for Dr. Chamany's talk, "From STEM to STREAMD: Adding Responsibility, Arts, and Design for Inclusive Learning".

Finally, but VERY exciting ... this year there will be two **Symposia** dedicated to communicating science and forming lasting partnerships in science education ([sicb.org/meetings/2018/symposia/narrative.php](http://sicb.org/meetings/2018/symposia/narrative.php) and [sicb.org/meetings/2018/symposia/publiceye.php](http://sicb.org/meetings/2018/symposia/publiceye.php)). **You will not want to miss these talks!**

On Friday, January 5th, in partnership with numerous film, gaming, music and journalism industry professionals, Sara ElShafie (U.C. Berkeley) and Stuart Sumida (CSU, San Bernardino) have partnered with the Ed Council to offer a society-wide symposium on engaging non-expert (public) audiences in science using "storytelling." Then, on Saturday the 6th, Louise Allen (Winston-Salem State University), Nikolay Hristov (Center for Design Innovation), and Martha Merson (TERC) will provide a symposium describing relevant and inspiring scientific partnerships from an extensive network of educators in museums, protected lands, and zoos.

For any additional questions, please contact the Educational Council Chair ([chair.edcouncil@sicb.org](mailto:chair.edcouncil@sicb.org)). ■

## Broadening Participation Committee Report

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and areas in which they need to develop more mentoring relationships. They will also develop a set of tools to pursue mentoring in areas where they want support and a plan to develop their mentoring networks, with concrete steps to take in the weeks following the workshop. To get the most out of this experience, please check the BP webpage at [www.sicb.org/meetings/bp](http://www.sicb.org/meetings/bp) for materials to read and complete in preparation for this workshop. ■



Visit the SICB home page

[www.SICB.org](http://www.SICB.org)

to view the stories written  
by students in the Magnum  
journalism program about  
presentations at the  
2017 annual meeting.

## Report from the Public Affairs Committee

By Molly Jacobs, Chair

The Public Affairs Committee (PAC) theme for the San Francisco meeting is Storytelling! On Thursday, January 4, 12:00-1:30 pm, start the meeting off by attending our workshop entitled "Science Through Story: Strategies for Science Communication inspired by Pixar's Creative Process." This workshop will be offered by Daniel McCoy, a Technical Director at Pixar, and PAC's own Sara ElShafie. On Friday, January 5th, stop by the society-wide [symposium](#) entitled "Science Through Narrative: Engaging Broad Audiences," organized by Sara ElShafie, Stuart Sumida, and Bram Lutton. On that same day, PAC is also sponsoring the return of Shayle Matsuda's popular

"Sketchnoting" workshop (12:00-1:30 pm). Finally, we are excited to announce the first ever SICB Science Storybooth! Throughout the meeting, look for the storybooth in the exhibit hall and then step inside to tell us a short science-related story. We will curate the story collection and then post them throughout 2018.

The PAC has also been hard at work this year improving SICB's social media presence, working with the executive committee to craft SICB's responses to public events such as the March for Science, and more recently preparing press releases to highlight the fantastic work that SICB members are presenting at the 2018 meeting. ■

