Society of Systematic Biologists
Program Chair's Report

David W. Weisrock
June 17, 2019

Program for Evolution 2019, Providence RI

SSB Symposia

Two symposia are running at the 2019 meeting:

1) "New Measures of Phylogenetic Support for the Genomic Era," organized by Jeremy Brown (Louisiana State University), Robert Lanfear (Australian National University), and Robert Thomson (University of Hawaii).
   - Speakers include: Dahiana Arcila (U. Oklahoma), Minh Bui (Australian National U.), Genevieve Mount (Louisiana State U.), John Rhodes (U. Alaska), Xing-Xing Shen (Vanderbilt U.), Chris Simon (U. Connecticut), Joseph Walker (U. Michigan).
   - Concludes with a panel discussion.
   - Sunday, 2:30-5:30 in Exhibit Hall D

2) "Diversification through time, space and lineages: relationships between data quality and good inferences," organized by Luna Sánchez-Reyes (postdoc at UT-Knoxville).
   - Speakers include: Rebeca Hernandez-Gutierrez (UNAM), Ian Brennan (ANU), Perre Arnal (MNHN), Eren Ada (U. Rhode Island), Christina Kolbmann (SELU), Michael Foisy (Michigan State U.), Nathan Upham (Yale U.), Luna Sanchez Reyes (U. Tennessee).
   - Concludes with a panel discussion.
   - Monday, 2:30-5:30 in Exhibit Hall D

SSB workshop

One workshop is running at the 2019 meeting:

"New developments in phylogenetics and evolution" organized by Dan Warren (Senckenberg Biodiversity and Climate Research Center, Germany).
- Friday, 9:00-5:00 in Room 555.

SSB Spotlight Sessions

We have two Spotlight sessions running at the 2019 meeting.

1) "The bright side of phylogenetics," organized by Michael Landis (postdoc at Yale University) and Rosana Zenil-Fergesun (postdoc at University of Minnesota).
   - Speakers include: Heath Blackmon (Texas A&M), Miranda Sinnot-Armstrong (Yale U.), Robert Thomson (U. Hawaii), Jeremy Beaulieu (U. Arkansas), Natya Hans, (U. Florida), Joelle Barido-Sottani (Iowa State U.), Walker Pett (Iowa State U.), Michael Matschiner (U. Zurich), Emilia Martins (Arizona State U.).
   - Concludes with a panel discussion.
   - Sunday, 9:30-12:30 in Ballroom A.

2) "How do I choose? Methodological approaches for cutting-edge phylogenomic research," organized by Brant Faircloth (Louisiana State University) and Courtney Hofman (U. Oklahoma).
   - Speakers include: Paul Hohenlohe (U. Idaho), Deren Eaton (Columbia U.), Alison Devault (Arbor Biosciences), Janet Buckner (Iowa State U.), Sangeet Lamichhaney (Harvard U.), Anna Vickrey (U. Utah), Felipe Zapata (UCLA), Lily Hughes (GWU), Courtney Hofman (U. Oklahoma), and Lillian Parker (Smithsonian Institution).
   - Saturday, 2:30-5:30 in Ballroom A.

Complete information for all symposia, spotlights, and the workshop can be found in the 2019 Evolution Program.

***** Discussion point regarding Spotlight Sessions *****

- Last May, I proposed, and council approved, providing $2000 in support to the organization of a Spotlight Session in an effort to encourage people to volunteer organizing these events.
- More recently, Kelly Zamudio mentioned that the original tri-society agreement for establishing the Spotlight Sessions included that they would not be funded, so as to not compete with symposia.
- So, I would like us to discuss and either: (1) affirm our policy to fund Spotlight Sessions, or (2) change our policy and remove funding for Spotlight Sessions.

SSB Table at Providence

This year we are running the first SSB exhibitor booth at a joint meeting (as far as I know). I have worked with our graduate student reps, Kinsey Brock and Sam church, to organize this effort, which will be used to promote the society and the benefits of membership. The booth will be staffed on all days of the conference, primarily around coffee breaks and during the poster sessions. Sam and Kinsey have produced a banner for us to use at our table (it can be reused at future meetings) and exceptional SWAG (limited-edition patches and stickers) to hand out. Anticipated activities at the booth include:

- Handing out SWAG.
- Promotion of the society and its benefits. We will have lists available to highlight funding opportunities (e.g., student and ad hoc).
- Advertisement of the SSB meeting at the University of Florida in January (hosted by Emily Sessa).
- This is also a great way for people to interact with members of council and the EIC of Systematic Biology. It can serve as a center of activity for everyone, so even if you haven't signed up to staff the booth at a specific time, please come by to hang out and talk with people.

Ad hoc funding updates

For 2019, SSB has currently committed funding to the following two proposals for a total of $3500.

"Professional Development Session on Field Biology for Evolution, Ecology, and Conservation Research at SACNAS 2019," organized by Janet Buckner, Tracy Heath, Corrie Moreau, and Felipe Zapata. SSB has committed $2000 of ad hoc support to this proposed project.

"RADcamp NYC 2019: Robust and reproducible library preparation, sequencing, assembly, and analysis of RAD-seq datasets," organized by Deren Eaton, Sandra Hoffberg, Laura Bertola, and Isaac Overcast. SSB has committed $1500 of ad hoc support to this proposed project.

Project proposals for these ad hoc funding commitments are included below.

Professional Development Session on Field Biology for Evolution, Ecology, and Conservation Research at SACNAS 2019

We are seeking a commitment from the Society of Systematic Biologists to provide *ad hoc* funds to support a professional development session at SACNAS 2019. The session is organized by several members of SSB and will also feature panelists and participants who are also members.

Field research is an important component of work for evolutionary biologists, ecologists, and conservation biologists. Students pursuing majors in these fields often have the opportunity to conduct field work, but the thought of doing so can be overwhelming. Field work can take students out of their comfort zone and place them into physically demanding and socially isolating situations. These difficulties can be exacerbated for underrepresented students who often face implicit bias, harassment, and exclusion. The main goals of this session are to prepare students to overcome these challenges, and engage them in field biology research. We will assemble a diverse panel of field biologists to speak about their own experiences, the rewards and challenges of doing field work, and to provide advice to students interested in field research. We will set up tables with different field tools and gear and panelists demonstrate how to use them. The session will be promoted heavily on social media and through special features and a page on Bio-Diversity.org, a web project created and led by Janet Buckner to increase the visibility of biologists of color and their work.

The session organizers--Janet Buckner, Tracy Heath, Corrie Moreau, and Felipe Zapata--are currently working to assemble a panel of experienced field biologists that represent diverse perspectives and study systems. *The session proposal is due on April 30, 2019*. We feel that the probability of success for our proposal will be significantly increased with support from scientific societies. These funds will help to pay for the travel expenses for panelists, particularly those who are early in their scientific careers. Additionally, we will use funds from SSB to create 30 “Fieldwork Starter Kits” for undergraduate participants in the session. These kits will include a Rite-in-the-Rain notebook, a pencil, a hand lens, and several additional fieldwork essentials like collection tubes and duct tape. We also hope to include promotional materials in these kits like SSB stickers and/or information cards that will inspire students to become members. We are asking for $2,000 to support this session.

SACNAS (the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science) is the largest organization in the US that is dedicated to diversifying STEM (science, technology, engineering, and mathematics) fields. SACNAS was founded by Hispanic and Native American scientists, and now works to promote and support all underrepresented minorities seeking careers in STEM. The SACNAS National Conference hosts between 3,800 to 4,200 participants from diverse backgrounds, STEM fields, career stages, and institutions (see Figure 1). In particular, the conference focuses on undergraduate students interested in pursuing advanced degrees in research, and the largest proportion of attendees are in the life sciences. Thus, the SACNAS National Conference is the ideal place for recruiting diverse talent to the fields of ecology and evolutionary biology.

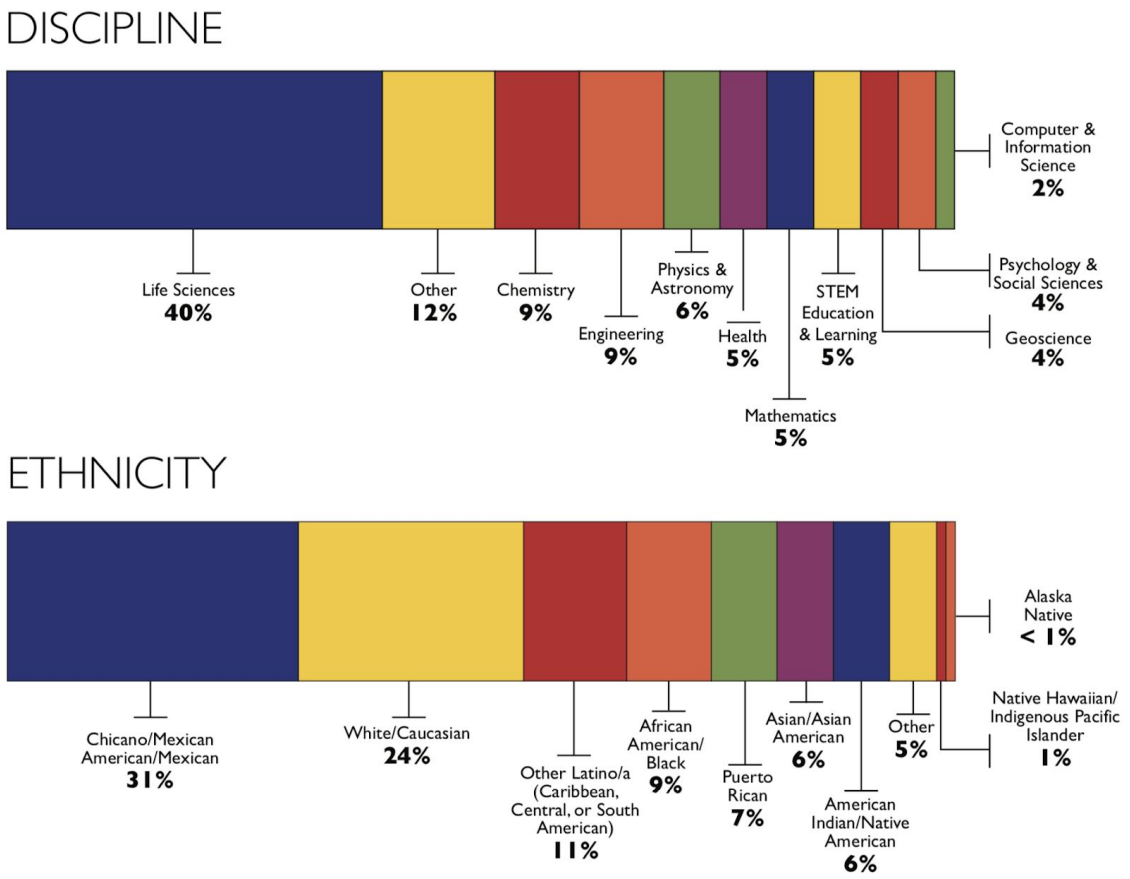

Figure 1: The demographics of the 2018 SACNAS National Conference in San Antonio, Texas from https://www.sacnas.org/wp-content/uploads/2019/02/SACNAS_BTN_Final.pdf. These figures show the percentage of the 4,213 registered participants by discipline and ethnicity. The conference attracts a wide range of STEM disciplines, with the largest representation in the life sciences. Moreover, the SACNAS conference is attended by far more people of color than any evolutionary biology or ecology conference held in North America.

The fields of ecology and evolution are in critical need of concerted effort to recruit scientists of color if we want to see our fields become more diverse. This fact is made clear if we review the Surveys of Earned Doctorates conducted by the NSF (https://ncses.nsf.gov/pubs/nsf19301/report). In Table 1, we show the data for ecology and evolutionary biology for 2010 and 2017. When you attend a conference like SACNAS it is clear that there is a diverse and excellent applicant pool. The reasons for the lack of change in the demographics of our fields are multifaceted, but we can alter the trend we see in Table 1 by (1) actively recruiting from diverse populations, (2) demonstrating sincere intention to make necessary changes to improve recruitment, (3) learning how to create inclusive environments where students of color will want to work and learn, and (4) acting on what we learn and making

our institutions more inclusive and equitable. All of these things are possible with strong effort and presence at conferences like SACNAS.

Table 1: Doctorate recipients in 2010 and 2017, by subfield of study, citizenship status, ethnicity, and race. From the Survey of Earned Doctorates: https://ncses.nsf.gov/pubs/nsf19301/data.

Subfield of study	Year	All PhDs	Temp. visa holders	U.S. citizens and permanent residents								
				Total	Hispanic or Latino	Not Hispanic or Latino						Ethnicity not reported
						American Indian or Alaska Native	Asian	Black or African American	White	More than one race	Other race or race not reported	
Ecology	2010	431	46	369	19	1	13	3	323	7	3	-
	2017	432	60	366	11	1	13	2	324	11	2	2
Evolution	2010	214	48	164	11	0	7	1	136	6	3	-
	2017	224	45	176	18	0	9	1*	140	6	2	0

*The only Black or African American evolutionary biology PhD recipient in 2017 reported in this survey is Dr. Janet Buckner, one of the organizers of this session.

We will have a final line up of speakers by the proposal submission deadline (April 30). If SSB agrees to support this session, we will share the proposal with the council after submitting and notify them if our session is selected for the 2019 SACNAS Conference (decisions are made in June or July). A professional development session for undergraduates interested in field biology will surely draw a large audience. We will also use this opportunity to encourage more of the SSB membership to attend the conference where they can support the students, learn how to increase diversity and make more inclusive spaces, and recruit stellar scientists to their institutions.

We do recognize that there is not much time for the SSB council to evaluate this request before the SACNAS proposal deadline. If it is at all possible for the council to make a decision by April 29, then we will include the commitment of funds in the proposal. Otherwise, we will simply state that we are requesting funds from our scientific societies to support the session. Thank you for your time and for considering this request.

COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

Society for Systematic Biology Ad Hoc Funding Application: RADcamp NYC 2019: Robust and reproducible library preparation, sequencing, assembly, and analysis of RAD-seq datasets

Over the last decade systematists have increasingly transitioned from using few genetic markers to infer phylogenetic trees to examining thousands of loci to fit complex models of evolutionary history that include gene tree discordance and reticulation. This transition has been made possible through technological improvements to both sequencing technologies and library preparation methods that select and sequence a subset of the genome, thereby reducing the costs to genotype hundreds or thousands of loci across hundreds or thousands of individuals. Restriction-site associated DNA sequencing (RAD-seq) represents one such popular approach that has become widely used for both population genetic and phylogenetic scale analyses. As RAD-seq has grown in popularity, improved methods for the preparation and analysis of this data have proliferated.

We are organizing a two-part workshop (RADcamp) in Fall 2019 to serve students and researchers in the New York Metro Area by teaching wet-lab and bioinformatic methods. The first part will involve *generating real sequence data* using the 3RAD method, and the second part (one month later) on how to analyze those data. Attendees will learn about equipment and reagents needed to prepare 3RAD libraries; the process of preparing and sequencing the libraries; bioinformatic methods for assembling the data; and downstream methods for phylogenetic and population-genetic analysis in a reproducible and highly parallelized framework. An added outcome of the workshop will be extending the RADcamp online resources (https://radcamp.github.io) to provide both wet-lab and bioinformatic tutorials that can be used by researchers in other areas to run similar workshops.

Four previous RADcamp workshops have been held by the instructors, all of which are documented on the RADCamp website. These workshops, in Brazil, Spain, New Haven, and New York City, have included approximately 25 participants each, ranging in career level from undergraduate students to assistant professors. The RADcamp workshop in NYC in 2018 drew participants from 8 universities in New York, New Jersey, and Connecticut. Previous workshops offered post-workshop evaluations to survey participant satisfaction and solicit feedback. We found that learning the details of library preparation through lecture, video, and activities, was abstract. Therefore, this year we are adding the wet-lab component to guide participants through the process.

We aim to completely subsidize library preparation and sequencing costs so that attendees can bring ~20 of their own DNA samples and use the workshop as an opportunity to generate pilot data for their research. Students, women, and underrepresented minorities will be prioritized for attending the workshop. The total cost of the workshop including reagents, Illumina sequencing, coffee, snacks, and food for a networking event is $5K. Columbia University and City College together have provided $2000, and **we are seeking $1500 from SSB.** Please note we are also requesting an equal amount of support from SSE, and therefore the two societies would be co-sponsors. If sufficient funding is not attained we could charge a fee for the wetlab.

The organizers of the workshop, Deren Eaton, Sandra Hoffberg, Laura Bertola, and Isaac Overcast, are all early career researchers involved in systematics research. We believe the broader impacts of this workshop will be far reaching: helping students to develop skills, network and develop collaborations, and generate data. All outcomes of this research will acknowledge the support of SSB. Thank you for your consideration, we look forward to any support SSB can provide for this event.