Society of Systematic Biologists
Program Chair's Report

David W. Weisrock
August 9, 2018

Meeting preparations

2018 Joint meeting with ESEB

There are no society sponsored symposia, workshops, or spotlight sessions at the 2018 Evolution meeting in Montpellier, France.

SSB Symposia for Evolution 2019, Providence RI

We have advertised a call for proposals to run symposia at the 2019 Evolution meeting, but so far we haven't had any takers. I will begin a more targeted effort to recruit proposals this Fall. I will not be at ESEB this summer and I encourage folks who are there to promote this opportunity.

SSB workshops for Evolution 2019, Providence RI

We have advertised a call for proposals to run workshops at the 2019 Evolution meeting and we have received one proposal by Dr. Dan Warren to run a workshop titled "New developments in phylogenetics and evolution" (proposal attached below). The proposed workshop covers a lot of ground, from phylogenetic comparative methods, to diagnostics for Bayesian phylogenetic analysis. It includes a nice balance of participants (including gender diversity), who have all confirmed participation if it is run. I think this could attract a lot of participants.

I'm unsure if SSB has funded more than one workshop in previous years (one was run at the 2017 meeting). If we only fund one, and assuming we will not receive additional applications in the near future, I would be happy with funding this proposed activity.

SSB Spotlight Sessions for Evolution 2019, Providence RI?

I have not yet heard if these will be taking place during the 2019 meeting. Kelly had indicated that they may not continue. If they are going to be part of the schedule at the 2019 meeting, I will do my best to round up potential coordinators.

Ad hoc funding updates

We have received a total of four requests for ad hoc funding and I have approved three of them. They include:

SSB funding for an interactive website for learning phylogenetics
Requestor: Dr. Jeremy Brown, Louisiana State University
Request Amount: $4,033.50 (Note that funding for this project is coming from the remaining funds in the 2017 SSB stand-alone meeting budget, and not from the $8K general fund approved for ad hoc funding).

Short Description:
The goals of this project are two-fold:
(1) First, we will develop an interactive and graphically rich website that would allow users to learn about phylogenetics. This site would be developed with the d3 javascript library, which is the one used by major publications like The New York Times to create their stunning, interactive graphics. This site is also inspired by other sites developed to explain more generic statistical concepts with d3. For instance, see https://students.brown.edu/seeing- theory/. The idea is that people could manipulate the parameters of models and watch how it affects the evolution of sequences or traits along trees.

(2) Second, I would like to develop a set of interactive online tutorials for those who want to learn more about programming and phylogenetics. These would be based on Python and use Jupyter notebooks, and they would serve as comprehensive, stand-alone resources. Anyone interested could walk through these tutorials, practice their programming, and learn about the underpinnings of phylogenetic software.

These sites would be integrated with one another and freely available.
Budget: Nearly all funds will be used to support an undergraduate student with experience in web development to develop, expand, and maintain the site using JavaScript and the d3 visualization library. This student will earn about $9 per hour, so these funds will support either 11 weeks of full-time work over a summer or about 40 weeks of part- time (10 hours/week) work during an academic year. A small amount (< $200) may be used to purchase access to online tutorials or web resources needed in the course of development.

Travel funding for Oak Spring eFLOWER Summer School
Requestor: Dr. Susana Magallón, Universidad Nacional Autónoma de México
Funded Amount: $4000

Short description (see attached pdf for more information about the summer school):
The Oak Spring eFLOWER Summer School will take place in the Oak Spring Garden Foundation, in Upperville, Virginia, from the 18th to the 27th of September, 2018. The main goal of the Summer School is to provide high-quality training in the modern comparative methods used to study plant macroevolution to 15 graduate level students from all around the world. While the methods are general and applicable to any group of organisms, all of our empirical datasets will be drawn from recently published work on flowering plants. A unique

feature of this School will be that the students themselves will participate in the creation of the datasets (floral traits and fossil calibrations), thereby gaining hands-on experience of the problems and questions associated with compiling data and building real-life datasets for comparative analyses. In doing so, we hope to further promote the rapidly evolving field of macroevolution among graduate students in plant sciences, while also conveying our experience in building high-quality datasets. The Oak Spring Garden Foundation will provide the venue, on-site accommodation, food, and air travel for up to $1000.00 USD for each attending student. While this support is generous, we are concerned that the amount assigned for air travel may limit the attendance of students from beyond North America and Europe. The funding requested to SSB will be used to support air travel of students from distant locations. One of the most important impacts will be to disseminate the use of comparative methods among students from a wide diversity of geographical and national provenance, who have not been exposed to them.

Teaching phylogenetics and evolution to K-12 teachers in Chile.
Requestor: Dr. Marco Antonio Mendez, Universidad de Chile
Funded Amount: $2000

Short description (see attached pdf for more information about the program):
This project aims to provide new educational material to secondary teachers (K-12, to improve their teaching habilities in evolutionary biology. We will develop activities related to phylogenetic inference and the classification of organisms, and the notions of a comparative phylogenetic method. These workshops will take place in Arica and Santiago de Chile under the title "Evolution in action: educational proposals for the classroom". Each workshop will consist of lectures that will update teachers on the concepts associated with phylogenetic analysis, and a practical part in which teachers will apply concepts associated with phylogenetic analysis and comparative methods.

Ad hoc funding question for Council

- Is the $8K ad hoc funding budget set to the fiscal or calendar year? I think it's the former, but I would like clarification.

SSB Swag

I have been working with SSB graduate student council representatives Anne Chambers and Sam Church to develop promotional materials for the society. We have a number of items (magnets, stickers, iron-on patches) prepared for the ESEB meeting. We have also organized for a table to be staffed during the SSB mixer and poster session. We'll be using this opportunity to engage with meeting attendees and promote SSB membership and participation.

New developments in phylogenetics and evolution

Workshop Description
Phylogenies form the foundation of our understanding of both the pattern and process of evolution on Earth. Methods for inferring phylogenies and using them in comparative and macroevolutionary analyses are constantly improving, and it can prove difficult for even seasoned investigators in the field to keep pace. In this workshop we will offer a collection of short (approximately one hour per topic) courses on a diverse array of new analytical methods.

This workshop will be suitable for graduate students, postdocs, and senior faculty. It is intended for users who are already familiar with R and have a good working knowledge of phylogenetics. Attendees will be expected to bring a laptop with R and RStudio installed, and will be provided with a list of necessary R packages beforehand.

Participants and Presentation Titles (all participants confirmed)

Klaus Schliep
University of Massachusetts
Phylogenetic analysis with phangorn and ape

Liam Revell
University of Massachusetts
Phylogenetic comparative biology with phytools

April Wright
Southeastern Louisiana University
Reproducible workflows for total-evidence dating analyses

Luke Harmon
University of Idaho
Investigating evolutionary radiations with Geiger and Arbor

Samantha Price
Clemson University
Macroevolutionary experimental design and how to use simulations to improve your phylogenetic comparative analyses.

Tara Pelletier
Radford University
Conducting posterior predictive checks in Bayesian phylogenetics

Graeme Lloyd
University of Leeds, Leeds UK
Plotting trees against geologic time and generating phylomorphospaces from discrete character data using the R packages Claddis and strap

Dan Warren
Senckenberg Biodiversity and Climate Research Center, Frankfurt Germany
R We There Yet: an R package for diagnosing and visualizing the performance of MCMC chains in Bayesian phylogenetics

Oak Spring eFLOWER Summer School

Oak Spring Garden Foundation, Upperville, Virginia, USA; 18-27 September 2018

We invite applications for the Oak Spring eFLOWER Summer School to be held at the Oak Spring Garden Foundation in Upperville, Virginia (USA) from 18 to 27 September 2018. The goal of the Summer School is to deliver high-quality training in the modern comparative methods used to study plant macroevolution. While the methods are general and applicable to any group of organisms, all of our empirical datasets will be drawn from our recent work on flowering plants. A unique feature of this School will be that the students themselves will participate in the creation of the datasets (floral traits and fossil calibrations) in our collaborative database PROTEUS, thereby gaining hands-on experience of the problems and questions associated with compiling data and building real-life datasets for comparative analyses. In doing so, we hope to further promote the rapidly evolving field of macroevolution among graduate students in plant sciences, while also conveying our experience in building high-quality datasets.

The Oak Spring Garden Foundation (OGSF) is a new philanthropic foundation based at the former primary estate of the late Mr. and Mrs. Paul Mellon, who were major philanthropists in the U.S. of the arts, humanities and sciences in the second half of the twentieth century. OSGF is located in the northern Virginia, in the piedmont of the Blue Ridge Mountains (ca. one-hour drive from Washington, D.C.). Led by Sir Peter Crane, the Foundation's inaugural President, OSGF is an ideal venue for small conferences, workshops, and retreats. It is becoming a new center of stimulation of all things botanical, from fundamental research in plant evolution and conservation, to horticultural and plant conservation practice, to the history and art of plants gardens and landscapes. Part of the role of OSGF will be similar to that played by NESCent (Durham) and NCEAS (Santa Barbara) in encouraging collaborative and synthetic research in evolution and ecology.

The Summer School will be structured around the alternation of 'Data Days' and 'Analytical Days' (four each). Each Data Day, we will focus on recording floral characters and fossil calibrations for selected groups of flowering plants in PROTEUS, contributing to actual ongoing research led by us (expansion of the eFLOWER dataset). Each Analytical Day will address a specific methodological topic, with a theoretical morning class introducing the fundamentals, and an afternoon hands-on practical to implement methods presented in the morning, using real-life plant datasets provided by us and/or built together over the data days. In addition, a pre-lunch seminar by a Guest Lecturer (see list below), or one of us, on an empirical macroevolutionary study in plants will be scheduled every day. There will also be two pre-dinner 'Flash Talks' by participants on their current research.

Topics addressed in the Summer School will include: divergence time estimation using molecular dating methods (relaxed clock methods, fossil calibration), ancestral state reconstruction and correlation of morphological traits (using maximum likelihood and Bayesian methods), and diversification rates and state-dependent diversification. All of these approaches start with phylogenetic trees obtained from molecular or genomic data and thus prior understanding of and experience with phylogenetic reconstruction based on such data is an essential prerequisite for participants, because this topic will not be taught in the Summer School. We also plan to include an outreach component in the form of a short video made by the participants during the course, explaining in simple terms what they have learned and why these methods are important to understand plant evolution.

The 2018 Summer School follows the first eFLOWER Summer School organized in Vienna in July 2013, but has different goals and structure. The Vienna Summer School focused entirely on data entry to build the eFLOWER dataset, whereas the 2018 School will also include methodological training.

The Oak Spring eFLOWER Summer School is free (no registration fee), including food and accommodation on site. All participants will also receive up to US$ 1000 on a reimbursement basis for their economy flights to Dulles Airport (IAD), Washington D.C. Participants are entirely responsible for arranging their own travel insurance and visas. The School is ideally suited to graduate students (enrolled in a master's or PhD program) who already have some botanical and phylogenetic background, but who lack training in current macroevolutionary methods. International applicants are welcome (but fluency in English is a requirement of the course) and we will attempt to achieve a good balance in terms of gender and origin in the final Summer School group selected.

To apply, please send a one-page letter of motivation and a CV, as a single PDF file with your name, to herve.sauquet@gmail.com. Deadline for applications: 1st June, 2018. Decisions will be made by 18th June. Please include the names and contact details of two referees (e.g., current or previous supervisor), but no letter of support (we will contact referees if necessary). Applications that do not meet these requirements may be automatically rejected. The total number of participants will be limited to 15.

Organizers:

- Hervé Sauquet (Royal Botanic Gardens and Domain Trust, Australia)
- Susana Magallón (Universidad Nacional Autónoma de México, Mexico)
- Jürg Schönenberger (University of Vienna, Austria)
- Peter Crane (Oak Spring Garden Foundation, USA)

Confirmed Guest Lecturers:

- Else Marie Friis (Swedish Museum of Natural History, Sweden)
- Laura Lagomarsino (Louisiana State University, USA)
- Stacey Smith (University of Colorado-Boulder, USA)

Links to learn more:

- Oak Spring Garden Foundation
- eFLOWER project
- First eFLOWER Summer School

Title of Proposal: Understanding Evolutionary Biology for Chilean Secondary School teachers (K12): improving teaching activities and educational material in the classroom.

Aplicants: Marco A. Méndez. Laboratorio de Genética y Evolución (www.gevol.cl) and Sociedad Chilena de Evolución (www.socevol.cl). **e.mail address:** mmendez@uchile.cl.

Nature of proposed activity: a) Develop educational kits to explain evolution for teaching activities; b) Accomplish three educational workshops in three cities in Chile (Santiago, Talca and Arica). In each workshop 30 teachers will be invited.

Short CV of the organizer describing scientific knowledge/achievements related to the project and/or previous experience with outreach activities: M. A. Méndez is Full Professor at Universidad de Chile. He studied Pedagogy in Biology (1988) at the P. Universidad Católica de Chile, has a Doctor of Science (2000) from the Universidad de Chile and recently has obtained a Master in Philosophy of Sciences (2016) at the University de Santiago de Chile. He was President of the Chilean Society of Evolution (SOCEVOL, Period 2012-2014). Dr. Méndez is the academic in charge of the Diploma in Communication of Science at the University of Chile (2013-). He has taught courses to teachers (K-12) in Evolutionary Biology (2014-2016) in Chile, and doctoral programs at Bolivia. He was one of the editors of e-book "***Introducción a la Biología Evolutiva***" supported by European Society for Evolutionary Biology (ESEB).

Background: In the previous projects we development the e-book "**Introducción a la Biología Evolutiva**" (available in our website www.socevol.cl and http://eseb.org/prizes-funding/outreach-fund/) This e-book has been used to teach evolution in different courses for teachers (K-12) during 2013-2016, in the Program de Formación Contínua para el Magisterio (PEC) in Universidad de Chile (total: 60 teachers). We also have used the book to teach evolution in Bolivia in the postgraduate students of Universidad San Francisco Xavier de Chuquisaca (UFSX) and Universidad Mayor de San Simón. Also the e-book has been download from different countries of South America (mainly Argentina and Perú). We also used this book in our teaching undergraduate activities at Universidad de Chile. Finally, our group have develop previous workshop including educational kit (see https://gevol.cl/outreach/) in Chile during 2017. Both e-book and workshop has been supported by ESEB outreach program.

Proposal: The aim of this project is to provide educational material to high school teachers (K-12) to improve their teaching capacity in evolutionary biology. We will use the e-book generated by us in 2012 "***Introducción a la Biología Evolutiva***" (available in website www.socevol.cl) to develop modules of resources to be used in the classrooms. These modules will illustrate the basic concepts and clarify some common misconceptions of the discipline through simple examples. We also will organize three workshops for secondary school teachers (Arica, Talca and Santiago). Each workshop will consider lectures in evolutionary biology and practical activities. In these practical activities teachers will apply all the educational material development previously, in the first stage of this proposal.

Brief Schedule: a) June- August 2017: Elaboration and teaching activities design , b) October 2017: Educational workshop in Arica (Chile); c) November 2017: Educational workshop in Santiago (Chile) and Talca (Chile).

Budget: We estimate a budget of U$7500 for all activities. The details are the following: $3500 to pay for activities related to professional services (graphic designer, people involved in the teaching activities, design and print of educational material). The other U$ 4000 will be used in activities related to workshops organization, and it will cover among others, fly ticket travel Santiago-Arica and per-diem of people involved. Also, some members of our society (SOCEVOL) will generate all academic themes about evolutionary theory pro bono.