

Botany 2020

Virtual Botany Conference

July 27 - 31

Scientific Program



American
Bryological and
Lichenological
Society

July 27 - 31, 2020

Conference Organizers

American Bryological and Lichenological Society

President - Catherine LaFarge

Program Director - Doug Ladd

American Fern Society

President - George Yatskievych

Program Director - Emily Sessa

American Society of Plant Taxonomists

President – Pamela Soltis

Program Director – Harvey Ballard

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President – Patrick Herendeen

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Director of Conferences - Johanne Stogran



American
Bryological and
Lichenological
Society



Botany 2020

Virtual Botany Conference
July 27 - 31

Dear Colleagues,

It is our great pleasure to welcome you to participate in the Botany 2020 Virtual Conference beginning Monday, July 27 through Friday, July 31. All sessions in this program book will be set for Eastern Daylight Time Zone.

Our committee has been working hard to learn new methods and technologies in order to deliver a Botany conference content that is meaningful, scientifically rich, and keeps you connected to colleagues during these changing times.

This conference would not have been at all possible without the many hours of professional assistance and guidance from Steve Bornhoeft and his team at Bartha.

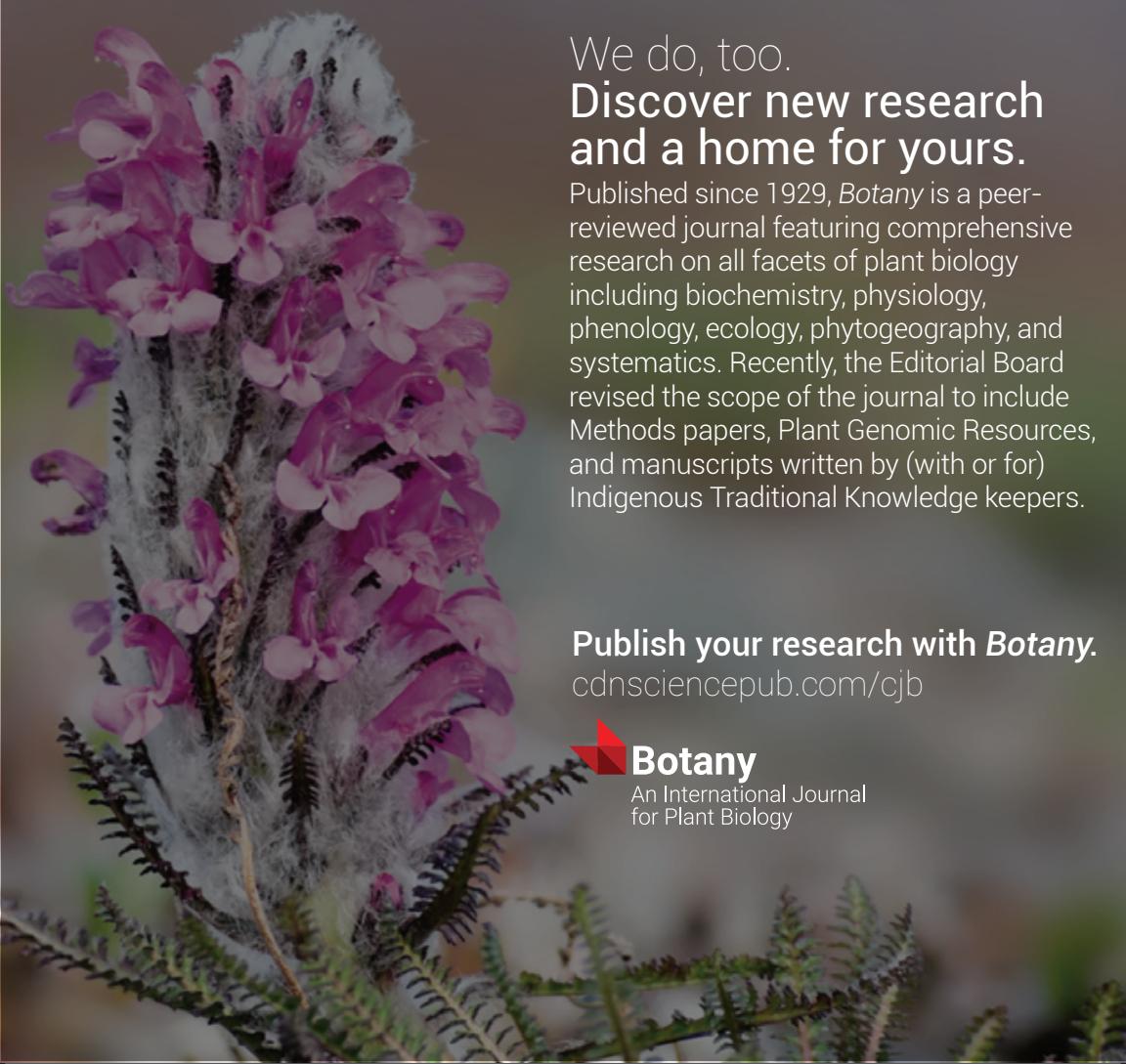
We know that you have also been working extremely hard to adapt and share your latest research and ideas with the botanical community.

We are glad you are here and we look forward to welcoming you online to Botany 2020. Bring your own beverages and settle in for a ton of learning and an enjoyable experience.



Johanne Stogram
Conference Organizer

Raise your hand if you like plant science.



We do, too.

**Discover new research
and a home for yours.**

Published since 1929, *Botany* is a peer-reviewed journal featuring comprehensive research on all facets of plant biology including biochemistry, physiology, phenology, ecology, phytogeography, and systematics. Recently, the Editorial Board revised the scope of the journal to include Methods papers, Plant Genomic Resources, and manuscripts written by (with or for) Indigenous Traditional Knowledge keepers.

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Botany
An International Journal
for Plant Biology

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(Note: The most up to date information will be on the online conference platform - this is for basic reference - we apologize for any errors)

General Conference Information

Botany 2020 - Virtual! July 27-31!

You will be joining over 1,200 registered participants representing over 45 countries and all 50 states of the United States! Botany 2020 - Virtual! truly represents the global botanical community, and we are excited that you are going to join us for our inaugural virtual conference!

Here is a re-cap of the information that you have received in conference emails.

Quick Tips and Tricks

- The Botany 2020 – Virtual! conference platform can be used via any browser but functions best on the Chrome browser.
- Updates can take a few minutes, such as adding agenda items to your My Agenda, so give the system a few minutes and check back.
- Once you have signed in for the first time bookmark the page for easy access.
- If the platform seems to freeze, refresh the page.
- The conference platform uses Zoom, so please download Zoom and test before the conference.
- Some schedule items require you to reserve a spot, though there should be plenty available, it is a good idea to reserve early
- If you use the search function and filter it will stay filtered until you change it back, if you fail to change it back it may look like items are missing.
- The conference was organized using the EDT time zone, but your agenda should automatically display your own time zone.

Log in to the Conference, Create Your Profile and Connect with Others

You can use **use the same link from your mobile device** to access your account via the mobile version. This link is unique to you and should not be shared.

Setup Your Profile Options and Features Before the Conference Starts

Unless you choose to hide your profile, your photo and accompanying information will be found throughout the conference platform. This includes the attendee list (found under “People” in the menu) which shows your name, photo, organization, title and tags.

The attendee list is one place where you can send messages or set up a one-on-one meeting by clicking the three dots next to an attendee name. You can also click on attendee photos throughout the site and choose “Schedule Meeting” or “Send Message” in the upper right-hand corner.

- Go to “Account” and then “Edit my profile”:
- Upload a profile picture
- Adjust your name as you would like it to appear
- Add any identifying features that you wish, including Title, Company, and Description
- Add tags to your profile and those tags can be used when using the search function of the attendees list
- Click preferences tab at the top of your profile Choose whether you want to receive email updates (we strongly suggest you keep this unchecked – if you check it you will NOT receive important conference updates.)
- If you want to hide your profile from other attendees you may choose to do so here by clicking the associated box. Please note your profile and photo will not show up at all on the conference site

Once you are finished you can press save and come back to adjust your choices at any time

Utilize Conference Schedule and Set up your “My Agenda”

To access the conference schedule click “Schedule” and then “Agenda” in the top menu. You can scroll all the way down through the days or click on a day on the top to skip to a specific day. You can also choose to view the agenda via a “Calendar View”. Items on the schedule are color coded and labeled by type and include a time with the time zone noted. You can search for specific schedule items via the search window in the top right.

You can add any of the schedule items to your “My Agenda” by clicking on the plus sign in the main conference schedule or by clicking “Add to Agenda” within the schedule item page. Please note it may take several minutes for an item to show up in your “My Agenda”. There are also opportunities to take notes within each schedule item, simply click “Notes” and you can download them later via the Agenda main page under “Export” and then “Download Notes”.

You can click on a schedule item to find more information as well as a list of attendees. You can click on both the speakers and attendees to visit their profiles (except those who have chosen to hide their profile). You can also send messages and set up one-on-one meetings with speakers or attendees by visiting the “Attendees” list under “People” in the menu and clicking the three dots next to their name.

Downloading Agendas

In order to download your “My Agenda” or the entire agenda to your calendar you can choose “Export” and then one of the options. BE AWARE, these agenda items will download to your calendar, so you may want to create a new calendar type just for this event so your personal or work calendar do not get affected.

An Overview of How the Different Types of Schedule Items will Work.

The conference platform utilizes Zoom within the framework of the conference platform. Only registered attendees will have access to the Zoom meetings and webinars. If you have not done so already, please download the zoom program to your computer and test it before the conference begins. Schedule items will not be available until their official start times, however, most of them will be recorded and made available after the conference for your convenience.

Live Talks: Plenary, Special Lectures

Attendees will navigate to the page, click on “reserve my spot” for the live presentation and it will load at the designated session time. They will watch the live introduction and then the presenters’ presentations all in one place. This meeting is a Zoom Webinar, only the presenters will have the ability to talk, but questions and comments can be made via the chat feature.

Live Talks: Symposium

To view live symposium add them to your “My Agenda” and click on “Join Live Meeting” at start time. A moderator will lead the symposium and the presenters will be given the lead for their presentations as they share their screens. The entire symposium will be all in one window so you will only have to start the live meeting once.

Questions and comments can be given via the chat feature to the right of the presentation.

The individual presentation files will be available after their start time and can be found below the live meeting where you can see more details within their respected sub-session page.

Receptions, Mixers, Workshops and other Group Meetings

These meetings resemble typical zoom meetings that you may be familiar with, your window will show and both you and the host will control if you are muted.

For all zoom meetings the chat within Pathable will be used. The integration does not allow for both or just zoom chat for meeting to be utilized. All chats will be housed and used in the Pathable session page no matter if it is a zoom meeting or zoom webinar. Other special features, such as breakout rooms and screen sharing, may or may not be used as needed.

Pre-Recorded Talks: Contributed papers, Colloquium

We have designed these talks in a way that will allow live conversations via the chat feature.

Each presentation can be started manually by pressing “Play Videos” at the start time or anytime after. The presenter will be available during their time to answer questions in the chat box and the moderator will be sure that everyone knows when it is time to move on and start the next presentation.

To start the next presentation you will go back to the main page (you can press the up arrow at the top left) and manually start the next presentation which will open up a new chat box. All chat boxes will stay active so you do not have to move on if you are in the middle of a conversation. Don’t forget you can also message the presenter as well as set up one-on-one meetings via the attendee list by pressing the dots next to their name.

If you want to take part in the group conversation via the chat we strongly suggest that you start your videos as close to the start time as possible.

After the start times have passed all recorded presentations can be played at any time, they will also be available after the conference if the presenter has given permission to do so.

Lightning Talks

Once you access the lightning talks you will see that there is only one window which will show all of the lightning talks in succession. Use the drop down in the lower left of the video window to select the next talk.

All lightning talks will have their own window as well to learn more about the talk, download files and start a discussion specifically for that talk.

Posters

To access posters, add them to your “My Agenda” on the main agenda page and all of the individual posters within that group will be selected for you. You can also just select individual posters if you choose. Once the start time has passed you can click “Play Video” and see the files associated with that poster. The actual poster is an uploaded file.

All poster authors have been asked to be present

during their poster times to have live conversations via the chat feature. You can also message them and set up one-on-one zoom meetings via the main attendees list by clicking the three dots next to their name.

Poster videos and files will be available for the rest of the conference once their start time has passed.

Profile Options and Features

Help people find and learn about you by utilizing all of the fields of your profile. Your profile is used throughout the site, including on the attendee list and within any schedule item that you add to your agenda. People can click on your photo and be sent to your profile where they will see any fields that you populated, including tags (this year’s ‘Badge Ribbons’), which can also be used to filter the attendee list. You can edit your description to show what you are studying, researching, or have an interest in. Profiles can also be used to send messages to one another by clicking “Send Message” or to schedule one-on-one Zoom meetings by clicking “Schedule Meeting.” If you do not want to share your information, you can also choose to hide your profile via the preference tab in the “Edit My Profile” screen found under “Account” on the top menu. Please note that you will not appear anywhere on the platform if you choose this option.

Connect With Exhibitors

You can connect with exhibitors anytime by visiting the Exhibit Hall in the top menu and clicking on a vendor icon. Here you can see a description of what they do, link to their website, request information, or start a conversation. You can also check on the agenda for the “Exhibit Hall Open” times when vendors will be available live to answer any questions in their booths. You can also use the search feature and filter by Exhibitor or Sponsor to locate individuals from those companies. Some exhibitors have special offers just for conference attendees so don’t forget to check them out!

Connect on Social Media

Make sure to check out the conference social media wall to see all of the latest conference posts on Twitter. Join the conversation by using the hashtag #botany2020, and your post will show up on the wall

as well. This year we'll be highlighting SciCommers (Science Communicators on social media) with an entire SciComm Celebration Day on Monday, when we will be highlighting a different SciCommer every half-hour! You are also welcome to join the SciComm Celebration Day Mixer at 4pm EDT and tag yourself as a SciCommer if you are one as well.

Conference Slack

This year we are excited to announce a Botany 2020 – Virtual! Slack account. This limited community-platform experience will allow you to connect with your fellow attendees and take part in community conversations. Two channels, BIPOC and LGBTQ+, were created for BIPOC and LGBTQ+ communities to have a safe space to meet and network. Other channels that are open to all attendees include the General channel, Teaching channel, PUI (Primarily Undergraduate Institution) channel, and a Diversity and Inclusion channel. Using Slack this year is a bit of an experiment—if successful, perhaps we will expand and add more channels in the future.

To join the conference Slack visit <http://botany.org.slack.com>. The link should directly allow users to join the workspace. Those new to Slack will be asked to set up an account requiring their full name, a display name, and a password. Once joined, users will automatically be added to the #general channel. Members can also browse and join additional channels by clicking on the plus sign next to the word "Channels" in the left-hand panel. Here is a quick guide for new members that may be of help: <https://slack.com/help/articles/218080037-Getting-started-for-new-members>. If you have technical issues joining this Slack channel you can email aherbotany@gmail.com. This Slack channel follows the conference Code of Conduct. Any violations of the COC will be handled in the same manner as the rest of the conference.

Virtual Networking/Job Board

Looking for a job, a lab to pursue your graduate school degree, a post-doc, or an early career researcher to fill one of those positions? Check out our virtual networking/job board for Botany 2020 - Virtual! by clicking [here](#).

Botany 2020 – Virtual! Zoom Backgrounds

Show your conference spirit with Conference Zoom Backgrounds! Visit <https://2020.botanyconference.org/zoom-backgrounds.html> and "pick your ribbon" to show your botanical pride. Do you have an idea for a ribbon? Email aneely@botany.org, and your ribbon may be added to the list.



Privacy and Code of Conduct

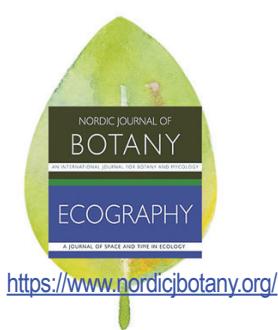
Your privacy and safety are of utmost importance to us. You will be asked to read the Code of Conduct before attending the conference. If you are being subjected to, or notice that someone else is being subjected to, behavior that violates this Code of Conduct, please contact our independent Ombudsman, Sherry Marts, PhD, at smartsconsultingllc@gmail.com or 202-670-7746.

FAQ and Help

If you have any questions you can first try our Frequently Asked Questions page found here: https://2020.botanyconference.org/faq_botany-2020virtual.html.

If you still need assistance, you can email us at: Johanne@botany.org.

Visit our Exhibitors - Early and Often!



<https://www.brit.org/departments/press>



PRESS



<https://www.conviron.com/>



<https://www.newphytologist.org/>



<https://www.dnastar.com/>



<https://www.dnastar.com/>

Symposia for Botany 2020 - Virtual!

Monday - July 27 - 10:00 - 2:30 (EDT)

Plant epigenetics: phenotypic and functional diversity beyond the DNA sequence

Organized by: Teresa Boquete, Estación Biológica de Doñana, Sevilla, Spain; Conchita Alonso, Estación Biológica de Doñana, Sevilla, Spain, and Aline Muyle, University of California Irvine.

Tuesday - July 28 - 10:00 - 2:30 (EDT)

Biodiversity Research Collecting Is More Important Than Ever—Ushering in a Collecting Renaissance

Organized by: Austin Mast, Department of Biological Science, Florida State University, and Patrick Sweeney, Peabody Museum of Natural History, Yale University.

Wednesday - July 29 - 10:00 - 2:30 (EDT)

From Genes to Distributions: physiological ecology as an integrator of polyploid biology

Organized by: Christopher P. Krieg, University of Florida, Steven Augustine, University of Wisconsin-Madison, and Thomas Givnish, University of Wisconsin-Madison.

Thursday - July 30 - 10:00 - 2:30 (EDT)

Angiosperms353: A new essential tool for plant systematics

Organized by: Laura Lagomarsino, Louisiana State University, and Rachel Jabaily, Colorado College.

Friday - July 31 - 10:00 - 2:30 (EDT)

Insights into the diversity of plant sex chromosomes

Organized by: Joanna Rifkin, University of Toronto; and Sarah Carey, University of Florida.



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Colloquia for Botany 2020 - Virtual!

Monday, July 27

10:00 am (EDT)

Characteristics of nectar, nectaries, and nectar spurs

Organized by: Lena Hileman, University of Kansas, Rahul Roy, University of Minnesota, Twin Cities, and Irene Liao, Duke University

Tuesday, July 28

10:00 am (EDT)

Exploring the utility and limits of target enrichment methods to study polyploidy and reticulate evolution

Organized by: Diego F. Morales-Briones, University of Minnesota,

3:00 pm (EST)

Teaching Virtual Plant Systematics/Flora Courses

Organized by: Harvey Ballard, Ohio University

Wednesday, July 29

10:00 am (EDT)

Enriching basic and applied botany through multi-stakeholder collaborations

Organized by: Caroline Puente-Lelievre, Laura Klein, LeafWorks Inc., Sara Handy, US Food and Drug Administration, Michael Kantar, University of Hawaii, and Marybel Soto Gomez, University of British Columbia

12:30 pm (EDT)

Extreme conservation measures for plants at the extremes in the Hawaiian archipelago model system

Organized by: Nina Rønsted, National Tropical Botanical Garden, Hawai'i, and Seana Walsh, National Tropical Botanical Garden, Hawai'i

12:30 pm (EDT)

Phylogenomics and evolution of Superrosids

Organized by: Hong Ma, The Pennsylvania State University, Doug Soltis: University of Florida and Pam Soltis, University of Florida

Thursday, July, 30

10:00 am (EDT)

Biodiversity synthesis: Linking large phylogenies with species traits and ecologies.

Organized by: Ryan Folk, Mississippi State University, Carolina Siniscalchi, University of Memphis, and Robert Guralnick, University of Florida

10:00 am (EDT)

Mechanisms of rapid adaptation through the expression of “heterogenomicity”

Organized by: Margaret Frank, Cornell University and Michael McKain, The University of Alabama

Friday, July, 31

10:00 am (EDT)

Plantlife in Neotropical rocky outcrops

Organized by: Johanna Jantzen University of Florida, and Maria Beatriz de Souza Cortez University of Florida

12:30 pm (EDT)

The Science of Meaningful Undergraduate Research Experiences

Organized by: Ed McAssey, and Karolina Heyduk, University of Hawaii

Workshops for Botany 2020 - Virtual!

All workshops are free and included in the registration fee.
Where indicated some workshops required preregistration.

Monday, July 27

12:00 pm - 3:00 pm

Ace it! - Give a Better Talk - Must Pre-register

Organized by: Dr. Bruce Kirchoff, Department of Biology, University of North Carolina at Greensboro

Tuesday, July 28

10:00 am 5:00 pm

De novo genome assembly and annotation with an emphasis on evolutionary and population genetic studies -Must Pre-register

Organized by: Jacob Landis, Cornell University, Fay-Wei Li, Boyce Thompson Institute, Suzy Strickler, Boyce Thompson Institute, Andrew Nelson, Boyce Thompson Institute

10:00 am - 2:00 pm

Disentanglement of rings: a practical introduction to assembling plastomes and mitogenomes from NGS and LRS data.

Organized by: Jianjun Jin Columbia University

Wednesday, July 29

10:00 am 5:00 pm

Introduction to High-Throughput Sequencing: Techniques, Applications, and Analysis - Must Pre-register

Organized by: James Beck, Wichita State University, Nic Kooyers, University of Louisiana at Lafayette, Brittany Sutherland, University of Louisiana at Lafayette

10:00 am - 2:00 pm

Teaching Online Botany Laboratory for Non-majors

Organized by: Ben Montgomery University of South Carolina Upstate

1:00 - 3:00 pm

Tips for Success: Applying to Graduate School

Presented by: Anna Monfils

3:00 - 5:00 pm

So you want a job: approaching the academic/research job market as a postdoc

Organized by: Stephanie Conway Harvard University, Rebecca Povilus Whitehead Institute

Thursday, July 30

10:00 - 12:00

A Digital Flora of North America for a Digital Age: An Interactive Session with the Flora of North America - Must Pre-register

Organized by: Jocelyn Pender, Agriculture and Agri-Food Canada, James Macklin, Agriculture and Agri-Food Canada, Joel Sachs, Agriculture and Agri-Food Canada, Beatriz Lujan-Toro, Agriculture and Agri-Food Canada, Geoffrey Levin, Canadian Museum of Nature

1:00 - 3:00 pm

Multi-dimensional instruction in Botany using the Four-Dimensional Ecology Education (4DEE) Framework: How to transform lessons.

Organized by: Luanna Prevost, University of South Florida, Diane Ebert-May, Michigan State University, Jennifer Doherty, University of Washington, Amanda Sorensen, Michigan State University

Friday, July 31

10:00 am - 12:00 pm

The promises and perils of pigments: quantifying color in plants

Organized by: Justen Whittall, Santa Clara University, Eduardo Narbona, Universidad Pablo de Olavide, and Jose Carlos Del Valle, Universidad de Sevilla

10:00 am 5:00 pm

Using Digitized Herbarium Data in Research: Applications for Ecology, Phylogenetics, and Biogeography

Organized by: Pamela S. Soltis, Univ of Florida, Douglas E. Soltis, Univ of Florida

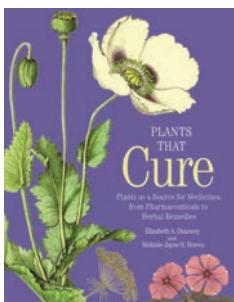
1:00 pm - 5:00 pm

Phylotranscriptomic analyses: using RNA-seq data in phylogenetic reconstruction and evolutionary analyses

Organized by: Ya Yang, University of Minnesota-Twin Cities, Stephen Smith, University of Michigan, Ann Arbor, Diego Morales-Briones University of Minnesota-Twin Cities

Stay Connected!

NEW FROM PRINCETON

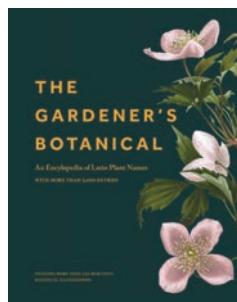


Plants That Cure

Plants as a Source for Medicines, from Pharmaceuticals to Herbal Remedies

Elizabeth A. Dauncey & Melanie-Jayne R. Howes

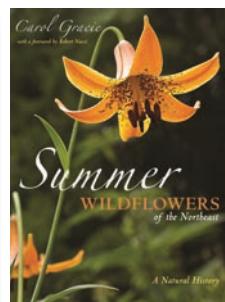
Cloth \$29.95



The Gardener's Botanical

An Encyclopedia of Latin Plant Names - with More than 5,000 Entries

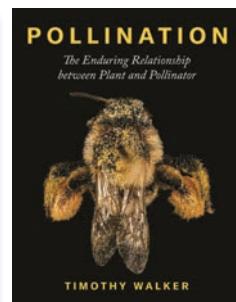
Ross Bayton
Cloth \$29.95



Summer Wildflowers of the Northeast

A Natural History

Carol Gracie
Cloth \$29.95



Pollination

The Enduring Relationship between Plant and Pollinator

Timothy Walker
Cloth \$29.95

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<https://press.princeton.edu/exhibits/botany>

Conference discount 30% off plus free shipping on all books sitewide with coupon code **BOT20**



PRINCETON UNIVERSITY PRESS



How did the
2008 recession
impact the job
market?

How do I get a
job outside of
academia?

So you want a job in 2020?

Approaching the job market as a post-doc



What do I need
to know to apply
for faculty
positions now?

What is it like to
start a new lab
now, amid
COVID?

Illustration by Min Ya

A Virtual Workshop / Discussion Panel

Wed, July 29th, 15:00-17:00 EST

Registration Required

#Botany2020Workshop

Discussion Panel featuring: Rob Baker (*University of Miami, Ohio*), Anji Ballerini (*Sacramento State*), Mike Barker (*U of Arizona*), Karolina Heyduke (*U of Hawai'i*), Rishi Masalia (*LeafWorks*), Claire Meaders (*UCSD*), Nathalie Nagalingum (*Cal Academy of Sciences*), Ben Williams (*UC Berkeley*), Xiao-Yu Zheng (*CDC*)

Organized and Moderated by: Stephanie Conway, Rebecca Povilus

Especially for Students

Use hashtag #Botany2020, #BSASciComm, #iamabotanist when posting on social media.

Botany 2020 Virtual Job/Networking Board

Looking for a job, a lab to complete graduate school in, a post-doc, or even just some friends? Sign-up and look through our virtual networking board!

Botany 2020 Slack

Watch out for an email with more information about a Botany 2020 Virtual! Slack!

Monday (July 27th)

Careers in Botany Luncheon - 12:00-13:30 US EDT

Organized by: Min Ya & Shelly Gaynor

Wonder what you can do with a degree in botanical/plant sciences? Join us for our virtual career luncheon. You will be able to meet and chat with our panelists, learn about their careers in academia (research-focused and/or teaching/liberal arts), NGOs (gardens, museums), publication, government, private sector/industry (and more!), and get to know the options for your future career and how to prepare for them!

SciComm Celebration Day - 16:00-17:00 US EDT

Organized by: Min Ya & Shelly Gaynor

We are going to feature 16 fantastic SciCommers throughout the day on the 27th on all official BSA social media platforms (Twitter: @Botanical_, Facebook: Botanical Society of America, Instagram: botanicalsocietyofamerica). Join us later that afternoon for a SciComm Celebration Day Mixer at Botany 2020 - Virtual! conference platform. Make sure to join and connect with all the featured SciCommers!

Ace it! - Practice your Presentation, Get Feedback, Give a Better Talk -12:00 - 15:00

US EDT

Organized by: Dr. Bruce Kirchoff

"This interactive workshop is for anyone who wants to present clear, easily understood technical talks. You will learn how to focus on your most important result, the presentation skills that help you connect with your audience principles of good slide design, and how to use clear visuals to support your talk..." See more information.

Student Social - 19:00 - 22:00 US EDT

Organized by: Min Ya & Shelly Gaynor

All students welcome! Come hang out and stay connected while social distancing, and we will have random breakout rooms to facilitate networking!

Wednesday (July 29th)

Tips for Success: Applying to Graduate School - 13:00 - 15:00 US EDT

Presented by: Anna Monfils

This workshop is a panel discussion designed to introduce undergraduate students to the specific requirements for applying to graduate programs in plant biology. Topics include considering a graduate degree, becoming a competitive applicant, establishing a timetable for application, picking a mentor, preparing a strong application, the campus visit, and funding options. Panelists will include both current graduate students and faculty experienced in mentoring and graduate admissions.

So you want a job: approaching the academic/research job market as a postdoc - 15:00 - 17:00 US EDT

Organized by: Stephanie Conway & Rebecca Povilus

Events in 2020 have already changed our daily lives, but what about prospects for postdocs approaching the job market? In this discussion panel, we'll feature diverse voices to provide perspective on what we might expect for the academic and non-academic job markets for the next few years. This panel will be organized into four major sections. See more information.

Everyday

CV Review Sessions FULL

Organized by: Min Ya & Shelly Gaynor

Due to overwhelming interest, the BSA student representatives will continue to organize the CV/Resume Review Sessions for students and post-docs at Botany 2020 - Virtual! Sign-up for a 20 minute, one-on-one review session with professionals from the field to get feedback on your CV or resume. We will contact and assign reviewers after the slots being filled, and we will try our best to match your interest with reviewers' expertise!

All US EDT: Monday – 16:00-17:00 - Tuesday – 12:15 – 13:15 - Wednesday – 16:00 – 7:00
Thursday – 12:30 – 13:30 Friday – 11:00 – 12:00

Careers in Botany Virtual Luncheon #Botany2020

July 27th, 12:00-13:30 US Eastern Time. Registration required.

What can you do with a plant science-related degree?



Mary Dudley
High School
Agr. Edu. Teacher



Ya Yang
Assistant Prof.
Herbarium Curator



Kadeem Gilbert
USDA-NIFA
Postdoctoral Fellow



Barbara Thiers
NYBG Herbarium Director
Incoming ASPT President



Chase Mason
Assistant Prof.



Frank Farruggia
EPA



Sara Handy
FDA



Sara Middleton
Human Nature Stories
Project founder
The Banangeddon Film



Lex Flagel
Bayer Crop



Marian Chau
IUCN Seed
Conservation Co-Chair
Conservation Consulting



Anji Ballerini
Assistant Prof.
PUI



Gordon Uno
Prof.
Past BSA president



Lauren Eserman
Research Scientist
Atlanta Botanical Garden



Rishi Masalia
Startup Executive



Bonnie Isaac
Collection Manager
Carnegie Museum
of Nat. His.

Organized by BSA student reps: Min Ya & Shelly Gaynor; Poster by Min Ya



Image Analysis Tools for Plant Science

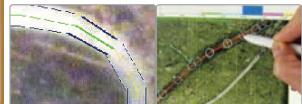
since 1991



WinRHIZO™ 2020
Analyser of Washed Roots and
Arabidopsis Seedlings



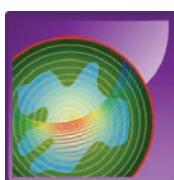
WinRHIZO™ Tron 2020
Interactive Analyser of Images of
Roots Growing in Soil and Rhizotron



WinFOLIA™ 2020
Leaf Area Meter, Morphological
Analyser and Damage Quantifier



WinSEEDLE™ 2020
Seed and Needle Morphological
Analyser, Counter and Classifier



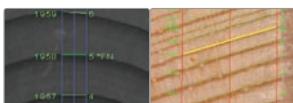
WinSCANOPY™ 2020
Canopy Structure and Solar Radiation
Analyser from Hemispherical Images



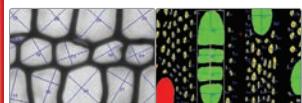
WinCAM NDVI™ 2020
Color Based Area Meter as well as
NDVI & Basic Morphological Analyser



WinDENDRO™ 2021
Tree-Ring and Wood Density Analyser
Optimised for Optical Scanners



WinCELL™ 2020
Analyser of Wood-Cell Structure
Parameters over Annual Rings



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MONDAY, JULY 27TH

9:00 AM - 10:00 AM Exhibit Hall Open

9:45 AM - 10:00 AM Opening Welcome
Chair: Linda Watson

10:00 AM - 11:30 AM PLANTS Grantee/Mentor Orientation - Private
Chair: Heather Cacanindin

10:00 AM - 12:00 PM CB1 Conservation Biology 1
Chairs: Sara Johnson and Claudia Jolls

- | | |
|--------------|--|
| 10:00 CB1001 | Johnson, Sara* - Coons, Janice - Zaya, David - Molano-Flores, Brenda
Habitat Suitability Models as a Conservation Tool for a Rare Mint,
<i>Macbridea alba</i> |
| 10:15 CB1002 | Herzog, Sarah* - Latvis, Maribeth
Phylogenetic Diversity Fails to Correlate with Species Richness in the
Threatened Tallgrass Prairies of the Northern Great Plains |
| 10:30 CB1003 | Slimp, Madeline* - Hale, Haley - Coker , Cassidy Reagan - Bailey,
Zachary - Johnson, Matthew
Herbaria as botanical snapshots: 50 years of land use and climate change
impacts on genetics and physiology in the Guadalupe Mountains |
| 10:45 CB1004 | Markman, Grace
Homegrown Strategies: Saving Our Native Flora |
| 11:00 CB1005 | McNair , Mason C* - Cruse-Sanders, Jennifer - Leebens-Mack, Jim
Conservation Data Management in the Digital Age |
| 11:15 CB1006 | Jolls, Claudia
Much from few: uncommon plants and common paradigms |

**10:00 AM - 2:30 PM COL02 Colloquium Characteristics of nectar,
 nectaries and nectar spurs**

Chairs: Lena Hileman, Irene Liao and Rahul Roy

- 10:00 Introduction
- 10:05 COL02002 Roy, Rahul - Moreno, Nickolas - Kostanecki, Adam - Brockman, Stephen - Chiari, Ylenia - Bee, Mark - Hegeman, Adrian - Carter, Clay*
Convergent evolution of a novel blood-red nectar pigment in vertebrate-pollinated flowers
- 10:30 COL02003 Roy, Rahul* - Carter, Clay
Temporal and sex-dependent variation in nectar-elemental profiles of *Cucurbita pepo*
- 10:45 COL02004 Liao, Irene* - Rausher, Mark
Differentially expressed genes contributing to the evolution of reduced nectar in the selfing syndrome
- 11:00 COL02005 Katzer, Amanda* - Wessinger, Carolyn - Hileman, Lena
Nectary specific gene expression in *Penstemon*
- 11:15 COL02006 Nikolov, Lachezar
Food of the Gods: developmental basis of nectary formation in the crucifers
- 11:30 Discussion
- 12:00 Break
- 12:30 COL02009 Krosnick, Shawn* - Maynard, Silas - Hearn, David - Hawkins, Angela - Shrestha, Bikash
Nectaromania in Passifloraceae: summarizing our current understanding of extrafloral nectaries in a morphologically challenging lineage
- 1:00 COL02010 Smith, Annika
Convergent evolution of nectar spurs across the angiosperms
- 1:15 COL02011 Ballerini, Evangeline* - Min, Ya - Edwards, Molly - Kramer, Elena - Hodges, Scott
POPOVICH, encoding a C2H2 zinc-finger transcription factor, plays a central role in the development of a key innovation, floral nectar spurs, in *Aquilegia*
- 1:30 COL02012 Edwards, Molly* - Choi, Gary - Min, Ya - Mahadevan, Lakshminarayanan - Hodges, Scott - Kramer, Elena - Ballerini, Evangeline
Genetic architecture of nectar spur traits in bee- and hummingbird-pollinated sister species of *Aquilegia* (columbine)
- 1:45 Discussion

10:00 AM - 12:15 PM FT1FT Floristics & Taxonomy I -

Chair: Unknown

- 10:00FT1FT001 Neill, David A.* - Asanza, Mercedes - Quizhpe, Wilson - Monteagudo Mendoza, Abel - Torres Montenegro, Luis - Huamantupa-Chuquimaco, Isau
Forests, shrublands and páramos of the Andean tepuis in Ecuador and Peru: Phytogeographic, floristic and vegetation patterns
- 10:15FT1FT002 Barkworth, Mary* - Valles, Kristian - Billings, Garrett - Dyreson, Curtis
New approaches to the maintenance and preparation of floras
- 10:30FT1FT003 McMurchie, Elizabeth* - Peterson, Bryan - Leandro, Thales D. - Clark, Lynn
New pieces of the *Chusquea* puzzle: A revision and recircumscription of *Chusquea* sect. *Serpentes* (Poaceae: Bambusoideae: Bambuseae)
- 10:45FT1FT004 Cloud-Hughes, Michelle* - Baker, Marc
Reassessment of subspecific taxa within *Pediocactus peeblesianus* by multivariate analysis of morphological characters
- 11:00FT1FT005 Fritsch, Peter* - Penneys, Darin - Nickrent, Daniel - dal Forno, Manuela - Amoroso, Victor - Coritico, Fulgent - Shevock, James - Brinda, John - Gerlach, Alice - Mancera, Jeffrey - Galindon, J Michael - Tandang, Danilo - Handley, Vanessa
Plant and lichen discovery in the southern Philippines: results from initial expeditions
- 11:15FT1FT006 Paredes-Burneo, Diego* - Michelangeli, Fabian - Lagomarsino, Laura
Exploring what's behind taxonomical complexes: a case with *Brachyotum* (Melastomataceae) in the Andes
- 11:30FT1FT007 Romoleroux , Katya Susana* - Boza Espinoza, Tatiana Erika - Kessler, Michael
New species of *Polylepis* (Rosaceae) from Ecuador
- 11:45FT1FT008 Fucikova, Karolina* - Kessinger, Evan - Norman, Emily - Hall, John
Desmids of selected New England ponds – a comparison to historical data

10:00 AM - 11:30 AM PLANTS Grant Orientation for Mentors/Mentees

10:00 AM - 12:00 PM PAL1 Cookson Award Session I

Chair: Andrew Leslie

- 10:00 PAL1001 DAntonio, Michael* - Boyce, C. Kevin
Potential secondary phloem in *Stigmaria* and long-distance sugar transport in arborescent lycopsids
- 10:15 PAL1002 Bippus, Alexander* - Stockey, Ruth - Rothwell, Gar
Permineralized gametophytes from Vancouver Island reveal that peat mosses (Class Sphagnopsida) were anatomically diverse by the Late Cretaceous
- 10:30 PAL1003 Tang, Keana* - Atkinson, Brian - Smith, Selena
Cunonicaceae from the Late Cretaceous of North America and its paleobiogeographic implications
- 10:45 PAL1004 Zhu, Hai* - Manchester, Steven - Lott, Terry
Illigera fruits from the Miocene of Alum Bluff, northwestern Florida

10:00 AM - 12:00 PM PTER1 Pteridology I

Chair: Alejandra Vasco

- 10:00PTER1001 Tessier, Jack
New Fronds of *Dryopteris intermedia* Develop More Slowly When the Stipes of Overwintering Fronds are Broken
- 10:15PTER1002 Metzgar, Jordan
Diversification of the fern genus *Cryptogramma* across time and space
- 10:30PTER1003 Sosa, Karla* - Windham, Michael D.
Geographic patterns in ploidy and reproductive mode in the xeric-adapted Australasian species *Cheilanthes distans* (Pteridaceae)
- 10:45PTER1004 Sundue, Michael* - Triana-Moreno, Luz Amparo - Schwartsburd, Pedro
New insights into the evolution of the fern family Dennstaedtiaceae
- 11:00PTER1005 Mendez-Reneau, Jonas* - Sigel, Erin
Comparative Phylogenetic Analysis of Rapid Divergences and Reticulations in the Fern Genus *Polypodium* s.s. using Target-Capture Methods
- 11:15PTER1006 Nitta, Joel* - Mishler, Brent - Iwasaki, Wataru - Ebihara, Atsushi
Exploring dimensions of biodiversity in Japanese ferns

10:00 AM - 2:15 PM SY1 Plant epigenetics: phenotypic and functional diversity beyond the DNA sequence -
Chair: Conchita Alonso

10:00 SY1SUM	Alonso, Conchita* - Boquete Seoane , M. Teresa - Muyle, Aline Plant epigenetics: phenotypic and functional diversity beyond the DNA sequence
10:00	Introduction
10:15 SY1002	Verhoeven, Koen* - van Antro, Morgane - Peñalva Ponton, Cristian - Gawehtns, Fleur Environmental dynamics of DNA methylation in asexually reproducing plants
10:45 SY1003	Boquete Seoane , M. Teresa* - Alonso, Conchita - Richards, Christina L. - Schmid, Marc W. - Herrera, Carlos Epigenetic modifications in response to heavy metal stress in two terrestrial bryophytes
11:15 SY1004	Toivainen, Tuomas* - Fossdal, Carl Gunnar - Hyttiläinen, Timo - Gaut, Brandon A role of epigenetic variation in perennial climate adaptation
11:45	Break
12:15 SY1006	Braeutigam, Katharina Epigenome analyses reveal a key developmental regulator responsible for sex determination
12:45 SY1007	Colicchio , Jack M* - Yuki, Cameron - Anderson, Ian - Adams, Sean - Smith, Aspen - Blackman, Benjamin Transgenerational responses to temperature modify locally adaptive signatures in <i>Mimulus lacinatus</i>
1:15 SY1008	De-la-Peña, Clelia* - Duarte-Akío, Fátima - Us-Camas, Rosa Albinism in Agave: an epigenetic clue involved
1:45	Discussion

10:00 AM - 11:45 AM SYS1 Systematics I: Asterids I & II

Chair: Anthony Melton; Lynn Clark

- 10:00 SYS1001 Chiarini, Franco* - Deanna, Rocio - Bohs, Lynn
Phylogeny and character evolution of the
genus *Sclerophylax* (Solanaceae)
- 10:15 SYS1002 Munoz-Rodriguez, Pablo* - Wood, John R.I. - Carruthers, Tom -
Scotland, Robert
A taxonomic monograph of *Ipomoea* integrated across phylogenetic scales
- 10:30 SYS1003 Akinyemi, Oluwaseun
Morphological Characterization on some species of *Ocimum* L.
(Lamiaceae) in Southwest of Nigeria
- 10:45 SYS1004 Roy, Tilottama
A closer look at the diversification of the false foxgloves in temperate North
America
- 11:00 SYS1005 Abair, Alexander* - Godden, Grant - Sun, Miao - El-Bahawy, Ahmed -
Soltis, Douglas - Soltis, Pamela
Assembling and Dating a Near-Comprehensive Phylogeny of Lamiaceae
- 11:15 SYS1006 Frankel, Lauren* - Espindola, Anahi
Evolutionary history and biogeography of slipperflowers, *Calceolaria*
(Calceolariaceae)
- 11:30 SYS1007 Hinojosa-Espinosa, Oscar* - Potter, Daniel
Phylogeny of the *Adenophyllum-Thymophylla* clade (Tageteae,
Asteraceae)

12:00 PM - 1:00 PM Exhibit Hall Open

12:00 PM - 1:30 PM Careers in "Botany Luncheon"

Hosted by BSA Student Reps Min Ya and Shelly Gaynor

12:00 PM - 1:00 PM American Fern Society Luncheon

12:00 PM - 3:00 PM W01 Workshop Ace it! - Give a Better Talk

Presented By: Bruce Kirchoff

12:30 PM - 2:30 PM CB2 Conservation Biology 2

Chair: Megan Philpott; Brenda Molano-Flores

12:30	CB2001	Philpott, Megan* - Vanhove, Anne Catherine - Yorke, Suzanne - Pence, Valerie Collecting exceptional species for <i>ex situ</i> conservation: Unique issues associated with tissue cryopreservation
12:45	CB2002	Day, Meigan - Walsh, Ryan - Michaels, Helen* Nectar Resources in Oak Savanna Pollinator Habitats
1:00	CB2003	Moore, Cheyenne* - McDonnell, Angela - Schuette, Scott - Martine, Christopher Conservation and population genomics of Pennsylvania <i>Baptisia australis</i> var. <i>australis</i> (Fabaceae)
1:15	CB2004	Lozada Gobilard , Sissi Donna* - Zhu, Jinlei - PankovÁji, Hana - Stojanova, Bojana - Zuzana, MÁ¼nzbergovÁji Potential risk of interspecific hybridization in <i>ex situ</i> collections
1:30	CB2005	Wright, Jessica* - Ivey, Christopher T. - Canning, Courtney - Browne, Luke - Sork, Victoria Timing of leaf emergence in a common garden is associated with climate of origin and local climate in a California endemic oak, <i>Quercus lobata</i>

12:30 PM - 2:15 PM HYHY1 Hybrids and Hybridization

Chair: Alex Twyford; Edward McAssey

12:30	HYHY1001	Winkler, Daniel* - Reed, Sasha - Massatti, Rob An unexpected hybrid in our midst and the need to refine our toolkit to improve dryland restoration
12:45	HYHY1002	Engle-Wrye, Nicholas* - Folk, Ryan Environmental drivers of a hybridization zone in <i>Heuchera</i>
1:00	HYHY1003	Brown, Max* - Hollingsworth, Peter - Twyford, Alex The genetic landscape of hybridisation in the British flora
1:15	HYHY1004	Eriksson , Mimmi Cecilia* - Temsch, Eva - McCann, Jamie - Paun, Ovidiu Repetitive elements and early stages of polyploid evolution. A perspective from sibling allopolyploid marsh orchids (<i>Dactylorhiza</i>)
1:30	HYHY1005	McCarthy, Elizabeth* - Kurti, Amelda - Lawhorn, Amber - Litt, Amy - Landis, Jacob Homeolog expression bias increases with allopolyploid age, but does not correlate with floral color differences in <i>Nicotiana tabacum</i> allopolyploids

12:30 PM - 2:30 PM PHYL1 Phylogenomics

Chair: Lars Chatrou; Lauren Eserman

- 12:30PHYL1001 Wheeler, Lucas C.* - Walker, Joseph F. - Ng, Julianne - Deanna, RocÃ±o - Dunbar-Wallis, Amy - Backes, Alice - Pezzi, Pedro H. - BrandÃ£o de Freitas, Loreta - Barboza, Gloria E. - Moyroud, Edwige - Smith, Stacey
Phylotranscriptomics of the Petunieae clade of Solanaceae
- 12:45PHYL1002 Lindelof, Kira* - Zhou, Wenbin - Xiang, Jenny
Phylogenomics of the Blue- and White-Fruited Dogwoods of *Cornus* L. - Insights into the Evolution of Eastern Asian-Eastern North American Disjunct Clades
- 1:00 PHYL1003 Spooner, David* - Ruess, Holly - Ellison, Shelby - Senalik, Douglas - Simon, Philipp
Consensus and discordance in next-generation phylogenetic analyses of *Daucus*
- 1:15 PHYL1004 Ning, Weixuan* - Meudt, Heidi - Nicolas, Antoine - Plunkett, Gregory - Tate, Jennifer
Phylogenomic analysis of New Zealand polyploid *Azorella* (Apiaceae)
- 1:30 PHYL1005 Gagnon, Edeline* - Hilgenhof, Rebecca - Orejuela, AndrÃ©s - Sablok, Gaurav - Aubriot, Xavier - Giacomin, Leandro - GouvÃ³a, Yuri - Bohs, Lynn - Dodsworth, Steven - Maurin, Olivier - Forest, FrÃ©dÃ©ric - Poczaï, PÃ©ter - Knapp, Sandra - SÃ¤rkkinen, Tiina
Phylogenomic data reveals hard polytomies in the large genus *Solanum* (Solanaceae)
- 1:45 PHYL1006 Yardeni, Gil* - Hess, Jacqueline - de La Harpe, Marylaure - Barfuss, Michael H. J. - Viruel, Juan - Paris, Margot - Groot Crego, Clara - Till, Walter - Leroy, Thibault - Paun, Ovidiu - Lexer, Christian
A target capture approach for exploring the drivers and constraints of adaptive radiation in tillandsioid bromeliads (*Tillandsia* spp)
- 2:00 PHYL1007 Shah, Toral* - Schneider, Julio - Zizka, Georg - Maurin, Olivier - Baker, William J. - Forest, FrÃ©dÃ©ric - Brewer, Grace E. - Savolainen, Vincent - Darbyshire, Iain - Larridon, Isabel
How well does an angiosperm-wide vs. a family-specific targeted sequencing probe kit unravel relationships in the pantropical Ochnaceae
- 2:15 PHYL1008 Yan, Yujing
A new nuclear phylogeny unravels fast-moving radiations in the Theaceae

12:45 PM - 2:00 PM PAL2 Cookson Award Session II
Chair: Nathan Jud

- 12:45 PAL2001 Brightly, William* - Stromberg, Caroline - Christin, Pascal-Antoine - Bianconi, Matheus
The role of grasslands in the evolution of seed dispersal strategy in the Poaceae
- 1:00 PAL2002 Spagnuolo, Edward* - Wilf, Peter
Decoding leaf characters that drive family level identification through computer vision
- 1:15 PAL2003 Schachat, Sandra R.
A critical reassessment of angiosperms' role in insect diversification

1:00 PM - 1:30 PM Pteridological Section Business Meeting

1:30 PM - 2:30 PM PUI Section Meeting

1:30 PM - 2:15 PM PTER2 Pteridology II
Chair: Alejandra Vasco

- 1:30 PTER2001 Wickell, David* - Kuo, Li-Yaung - Yang, Hsiao-Pei - Michael, Todd - Li, Fay-Wei
The Life Aquatic: Genomic and Transcriptomic Insights into Crassulacean Acid Metabolism in *Isoetes*
- 1:45 PTER2002 Hornych, Ondrej* - Testo, Weston - Sessa, Emily - Watkins, James - Campany, Courtney - Pittermann, Jarmila - Ekrt, Libor
Pheromones largely control sex expression in ferns: a meta-analysis of fern mating via antheridiogens
- 2:00 PTER2003 Grusz, Amanda* - Windham, Michael D. - Picard, Kathryn - Pryer, Kathleen - Schuettpelz, Eric - Haufler, Christopher
An environmentally-based model for the origin of obligate apomixis in ferns: insights from the pellaeid clade (Pteridaceae; Cheilanthoideae)

3:00 PM - 4:00 PM PL2 Plenary Address
What have we learned? - Lessons and strategies from
the chaos
Bryan Dewsbury
Introduction by: Anna Monfils

4:00 PM - 5:00 PM CV Reviews

4:00 PM - 5:00 PM SciComm Celebration Day Mixer

4:30 PM - 5:30 PM Economic Botany Business Meeting

5:00 PM - 6:00 PM Exhibit Hall Open

All Society Poster Monday Session 5:00 - 6:00

ANATOMY AND MORPHOLOGY

- PAM001 Mansaray, Janet* - Lagomarsino, Laura
Plants, Ants, and Curvy Bills: the Morphological Analysis of Mutualisms in Neotropical Bellflowers
- PAM002 MacNeill, Bryan* - McKain, Michael - Brewer, Killian - Hudson, Marvin
Comparison of Floral Morphology in the Mexican Endemic Genus *Polianthes*
- PAM003 Bullock, Madison* - Simonin, Kevin - Cantley, Jason
Morphological adaptations within a young adaptive radiation of Hawaiian *Chenopodium* (Amaranthaceae)
- PAM004 Patel, Cailan* - Morris, Rebecca - Cantley, Jason - Simonin, Kevin
Effects of saline environments on morphology in *Chenopodium oahuense* of the Hawaiian archipelago

PAM005	Holliday, Aaliyah* - Martinez-Gomez, Jesus - Rose, Irving - Specht, Chelsea The evolution of the monocot inflorescence using a phylogenetic framework
PAM006	Wu, Carrie* - Bustamante, Sofia - Nolin, Kristine Convergence of glandular trichome morphology and chemistry in two montane monkeyflower (<i>Mimulus</i> , Phrymaceae) species
PAM007	Eliana, Wasserman - Sassone, Agostina* - Alicia , LÃ³pez - Santiago, Morello Geometric morphometrics to assess leaf variation in populations of <i>Larrea divaricata</i> Cav. (Zygophyllaceae) from Argentina
PAM008	Glos, Rosemary* - Salzman, Shayla - Calonje, Michael - Vovides, Andrew - Specht, Chelsea A Phylogenetic and Geographic Analysis of Leaflet Anatomy in <i>Zamia</i> (Cycadales: Zamiaceae)
PAM009	Leal-Costa , Marcos Vinicius Plant Anatomy in times of social isolation – developing teaching material far from the lab
PAM010	Quintanar, Angelica* - Pace, Marcelo Unraveling the diversity of habits in <i>Bunchosia</i> clade (Malpighiaceae) through its anatomy: <i>Echinopterys</i> as a case study
PAM011	Phuong Pham , Michelle Ann* - Cohen, Jim - Ryan, Gillian Investigating the Comparative Anatomy of <i>Lithospermum</i> Through an Evolutionary Lens

BIODIVERSITY INFORMATICS & HERBARIUM DIGITIZATION

PBI001	Webb, Campbell O.* - Ickert-Bond, Stefanie Cyborg matching of taxonomic names, using nomenclatural logic
PBI002	Naseer, Arooj* - Khalid, Abdul Nasir <i>Amanita pseudovaginata</i> from Pakistan
PBI003	Maya Lastra, Carlos Alonso* - Eaton, Deren TreeToM: A simple tool for visualizing phylogenetic trees onto a map
PBI004	Gostel, Morgan - Meyer, Abby* - linsky, Jean How does your garden grow? Analyzing living collections for conservation and research priorities using integrated gap analysis tools

BIOGEOGRAPHY

- PBG001 Nguyen, Khoa - Laport, Robert*
Investigating the origins of the American Amphitropical Disjuncts *Larrea tridentata* and *Larrea divaricata*
- PBG002 Saghatelyan, Anna
Areas of Endemism in Southcentral/Southwestern USA Based on Selected Angiosperms
- PBG003 Geyer, Renee* - Everbach, Sophie - Douglas, Norman - Flores, Hilda - Ochoterena, Helga - Moore, Michael
Phylogeography of *Petalonyx crenatus* (Loasaceae): genetic structure across a gypsum archipelago
- PBG004 Perez-Collazos, Ernesto* - Seidl, Anna - Tremetsberger, Karin - Carine, Mark - Catalan, Pilar - Bernhardt, Karl-Georg
Eurasian-Mediterranean and North American evolution and biogeography of *Krascheninnikovia ceratoides*
- PBG005 Rosas, Marcelo* - Segovia, Ricardo A. - Guerrero, Pablo C.
Biogeographic patterns in an amphitropical long-dispersal clade of golden-buschies (Asteraceae): comparing arid climate-type analogs in North and South America
- PBG006 Hastings, Cara* - Bornstein, Allan - Smith, James
Environmental Niche of *Piper amalago*, a widespread Neotropical *Piper*
- PBG007 Duan, Lei* - Harris, AJ - Wen, Jun - Chen, Hong-Feng
Phylogenomics, biogeography and taxonomy of liquorice (Leguminosae: *Glycyrrhiza* s.l.)
- PBG008 Mairal, Mario - Namaganda, Mary - Gizaw, Abel - Chala, Desaleng - Brochmann, Christian - Catalan, Pilar*
Multiple mountain-hopping colonization of sky-islands on the two sides of Tropical Africa during the Pleistocene: the afroalpine *Festuca* grasses
- PBG009 Motley, M'Kayla* - McKain, Michael
Identifying changes in environmental limits of Johnsongrass (*Sorghum halepense*) over the last fifty years in the continental United States
- PBG010 Young, Sophie* - Stevens, Carly - Lundgren, Marjorie
The Biogeography of Photosynthetically Diverse Euphorbiaceae Trees

PBG011 Nuppenau, Jan-Niklas* - HÃ¶glund, Elsa - Kent , Kainulainen - Minadakis, Nikolaos - WikstrÃ¶m, Niklas - Humphreys, Aelys,M. Population structure and colonisation history of Icelandic *Agrostis* from geothermally heated and non-heated areas

PBG012 Ball, Laymon* - Lagomarsino, Laura Ecological niche and pollination syndrome are correlated in the florally diverse Neotropical genus *Hillia* (Rubiaceae)

BOTANICAL HISTORY

PBH001 Gardiner, Lauren M.
A lockdown glimpse inside the Cambridge University Herbarium: an overlooked botanical treasure trove

BRYOLOGY AND LICHENOLOGY

PBL001 Niu, Jingyuan* - Zhang, Shijia - Zhang, Yijie - Shen, Fengjiao - Li, Lin - Shi, Shuo - Zhao, Jiancheng
The Mitochondrial and Chloroplast Genomes Comparison and Evolution Analysis of Selected Taxa of Bryales (Muscii)

PBL002 Dou, Jiancong - Zhang, Shijia - Shen, Fengjiao - Niu, Jingyuan - Li, Lin - Shi, Shuo* - Zhao, Jiancheng
The Development and Evaluation of DNA Barcodes in Mosses (Bryophyta): Based on Whole-genome Chloroplast Data

PBL003 Andreski, Christina* - Curran, Bridget - Jolles, Diana
Getting Through the Crux: A Text Analysis of Rock Climbing Impacts on Cliff Communities

COMPARATIVE GENOMICS/TRANSCRIPTOMICS

PGT001 Decena Rodriguez , Maria Angeles* - Galvez-Rojas, Sergio - Contreras-Moreira, Bruno - Hernandez, Pilar - Catalan, Pilar
Structure and evolution of drought responsive dehydrin genes across species and ecotypes of the monocot *Brachypodium* model system

PGT002 Kafrawi, Rizky* - Livshultz, Tatyana - Fishbein, Mark - Straub, Shannon
Intracellular Gene Transfer Dynamics in Asclepiadoideae (Apocynaceae)

PGT003 Thomas, Shawn* - Pires, Joseph
Generating a target-enrichment bait set to explore polyploid and reticulate evolution in the tribe Brassiceae

- PGT004 Wilson, Rachel - Michaels, Helen*
Differences Between Transcriptomes of Seed Coat Phenotypes of a Wild Lupine
- PGT005 Field, Richard* - Heyduk, Karolina - Leebens-Mack, Jim
Assessing divergence of transcription factor binding sites in the promoters of CAM genes in *Y. aloifolia*

CONSERVATION BIOLOGY

- PCB001 Janssen, Eric* - Coons, Janice - Coutant, Nancy - Edgin, Bob
Survival and Reproductive Potential of the Rare Prairie Species, *Silene regia*, as Affected by Fertilizer and Planting Season
- PCB002 Miller, Amanda* - Pence, Valerie
Conserving Oak Species Using Cryopreservation Techniques
- PCB003 Handley, Joy* - Tronstad, Lusha
POLLINATION AND SEED-SET OF BARNEBY'S CLOVER (*TRIFOLIUM BARNEBYI*)
- PCB004 Aubuchon, Taylor* - Bookout, Bess - Minx, Patrick - Romay, Cinta - Buckler, Edward - Hufford, Matthew - Ross-Ibarra, Jeffrey - Kellogg, Elizabeth A.
Using a large-scale Andropogoneae genomics project to inform conservation efforts
- PCB005 Li, Bing* - Vitt Gorra, Darwyn - Levy, Ben - Holloway, Jalen - Lamb, Nathan - Havens, Kayri
Changes to floral morphology and phenology of an endangered species, *Oenothera organensis*, during *ex situ* conservation
- PCB006 Montoya, Hellen* - LÁpez-SepÃlveda, Patricio - Takayama, Koji - Fuentes, Glenda - AlarcÃn, Diego - PeÃ±ailillo, Patricio
Genetic diversity in the species *dysopsis hirsuta* (mÃll. Arg) skottsb.
Anagenetically derived at robinson crusoe island (juan fernández archipelago, chile) and its use in conservation
- PCB007 Toro-Concha, Catalina* - AlarcÃn, Diego - Fuentes, Glenda - PeÃ±ailillo, Patricio - LÁpez-SepÃlveda, Patricio
Anagenetic speciation in *Escallonia callcottiae* Hook. et Arn.
(Escalloniaceae), endemic to the Juan Fernández archipelago, Chile
- PCB008 Rittgers, Amber* - Eserman, Lauren
Assessment of the Resiliency and Status of Endangered Apalachicola Rosemary, *Conradina glabra* Shinners (Lamiaceae)
- PCB009 Rittgers, Amber* - Eserman, Lauren
Assessment of the Resiliency and Status of Endangered Apalachicola Rosemary, *Conradina glabra* Shinners (Lamiaceae)

- PCB010 Rogers, Will - Lee, Diana - Platero, Derrick - Braley, Gentry - Sophia, Calles - Rochford, Mia - Jared, Odell - Anderson, Jill - Jennifer, Boyd - Cruse-Sanders, Jennifer*
Reasons for rarity? Using a common garden approach to investigate the response of rare *Pityopsis ruthii* (Ruth's golden aster) to potential habitat change

CROPS AND WILD RELATIVES

- PCW001 Chacon, Francisco - Cramer, Christopher - Guzman, Ivette*
Leaf Area Index as an Indicator of Phenology and Dormancy in *Allium cepa* (L.)
- PCW002 Pisias, Michael* - An, Hong - Yuan, Yuxiang - Mabry, Makenzie - Hurt, Sarah - Pires, Joseph
Developing *De novo* domestication in *Brassica*

PTERIDIOLOGY

- PPT001 Corral, Sydney* - Metzgar, Jordan
Examining the range of diploid and tetraploid *Asplenium trichomanes* subspecies across Virginia
- PPT002 Hernandez-Hernandez, Brenda - Tapia-Lopez, Rosalba - Ambrose, Barbara - Vasco, Alejandra*
R2R3-MYB gene evolution in plants, incorporating ferns into the story

6:00 PM - 8:00 PM Student Social and Networking Event
Hosted by BSA Student Representatives Min Ya and Shelly Gaynor

6:00 PM - 11:00 PM Paleobotany Mixer

7:00 PM - 8:30 PM SHC Executive Board Meeting (Private)

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TUESDAY, JULY 28TH

9:00 AM - 10:00 AM Exhibit Hall Open

9:00 AM - 10:00 AM SHC Executive Board Meeting

9:45 AM - 10:00 AM Opening Welcome

Chair: Unknown

10:00 AM - 12:00 PM BIOG1 Biogeography I

Chair: Ann Willyard; Peter Jobson

- 10:00BIOG1001 Howard, Cody* - Crowl, Andrew - Zuntini, Alexandre R. - Malakasi, Penny - Baker, William J. - Cellinese, Nico
The Evolutionary History of the Ledebouriinae (Scilloideae, Asparagaceae)
- 10:15BIOG1002 Meek, Jared* - Ree, Richard - Eaton, Deren
Mountain phylogeography and conservation: a case study in *Pedicularis* (Orobanchaceae)
- 10:30BIOG1003 Soifer, Lydia* - Peroni, Patricia - Thawley, Chris
The effects of spatial and temporal scales on distribution models of *Cypripedium acaule* in North Carolina
- 10:45BIOG1004 Fahey, Patrick* - Fowler, Rachael - Cantrill, David - Udovicic, Frank - Bayly, Michael
The phylogeography of *Eucalyptus behriana* (Bull mallee): a story of many signals
- 11:00BIOG1005 Puppo, Pamela* - Curto, Manuel - Meimberg, Harald
Geology and inter-island colonization shape the diversification of *Micromeria* Benth. (Lamiaceae) in the Canary Islands

- 11:15BIOG1006 Wolfe, Andi* - Blischak, Paul
Biogeography of *Penstemon* (Plantaginaceae)
- 11:30BIOG1007 Reginato, Marcelo - Michelangeli, Fabian*
Bioregions of eastern Brazil based on vascular plant occurrence data
- 11:45BIOG1008 Wettewa, Eranga* - Wallace, Lisa
Insights on the biogeographic origin and the floral trait evolution of *Platanthera* subgenus *Limnorchis* (Orchidaceae), using target enrichment approaches

10:00 AM - 1:30 PM COL04 Exploring the utility and limits of target enrichment methods to study polyploidy and reticulate evolution

Chair: Diego Morales-Briones; Ya Yang

- 10:00COL04SUM Morales-Briones, Diego
Exploring the utility and limits of target enrichment methods to study polyploidy and reticulate evolution
- 10:00 Introduction
- 10:15COL04002 Morales-Briones, Diego* - Gehrke, Berit - Huang, Chien-Hsun - Liston, Aaron - Ma, Hong - Marx, Hannah - Tank, David - Yang, Ya
Analysis of paralogs in target enrichment data pinpoints multiple ancient allopolyploidy events in *Alchemilla* s.l. (Rosaceae)
- 10:30COL04003 Jantzen, Johanna* - Freitas Oliveira, Ana Luiza - Guimaraes, Paulo - Soltis, Douglas - Soltis, Pamela
Polyploidy complicates resolution of evolutionary relationships in *Tibouchina* s.s. (Melastomataceae)
- 10:45COL04004 Tiley, George* - Crowl, Andrew - Sessa, Emily - Burleigh, Gordon
Phasing alleles improves phylogenetic network inference with allopolyploids
- 11:00COL04005 Crowl, Andrew* - Tiley, George - Fritsch, Peter - Manos, Paul
A phylogenomic investigation into polyploidy and cryptic diversity in the true blueberries (*Vaccinium* section *Cyanococcus*)
- 11:15COL04006 Quatela, Anne-Sophie* - Cangren, Patrik - De Boer, Hugo - Bacon, Christine - Oxelman, Bengt
Targeted long reads from herbarium specimens enable to identify allopolyploidization events of arctic/subarctic *Silene* sect. *Physolychnis*

11:30COL04007	Moore, Abigail* - Edwards, Erika Assessing the importance of hybridization in the diversification of <i>Anacampseros</i> (Anacampserotaceae, Caryophyllales) in the Cape Floristic Region using targeted sequence capture data
11:45COL04008	Thomas, Shawn* - Liu, Xiang - Cummings, Amanda - Pokorny, Lisa - Xiang, Jenny - Leebens-Mack, Jim Testing hypothesized reticulate evolution in the Cornales using targeted enrichment data
12:00	Break
12:30COL04010	Folk, Ryan Strategies for assessing phylogenomic conflict and testing hybridization, with an example from <i>Heuchera</i>
12:45COL04011	Siniscalchi, Carolina* - Loeuille, Benoit - Mandel, Jennifer - Pirani, JosÃ© Rubens Phylogenomics Yields New Insight Into Relationships Within Vernonieae (Asteraceae)
1:00	Discussion

10:00 AM - 12:00 PM ECO1 Ecology 1: Phenology Chair: Loy Xingwen; Christa Mulder

10:00 ECO1001	Mulder, Christa* - Diggle, Pamela - Schaub, Eileen Slowing Down and Speeding Up: Contrasting Phenological Responses of Two <i>Vaccinium</i> Species to Experimental Warming in the Year Before Flowering
10:15 ECO1002	Landoni, Beatrice* - Suarez, Pilar - Habeahan, Rico - Brennan, Adrian - Perez-Barrales, Rocio What creates patterns of variation in the flowering phenology of <i>Linum bienne</i> ?
10:30 ECO1003	Parker, V. T.* - Stickrod, Morgan Phenological shifts in the Arbutoideae (Ericaceae) indicate important transitions in the evolutionary selective context for seed ecology
10:45 ECO1004	Love, Natalie* - Mazer, Susan Region-specific phenological responses to climate change in <i>Streptanthus tortuosus</i> (Brassicaceae)

- 11:00 ECO1005 Olliff Yang, Rachael L.* - Ackerly, David
Population differentiation along abiotic gradients determines flowering time in *Lasthenia gracilis*
- 11:15 ECO1006 Xingwen, Loy* - Morozumi, Connor - Schiffer, Annie - Brosi, Berry
Does earlier flowering impact plant community seed set?

10:00 AM - 11:45 AM PAL3 Paleobotany I: Paleozoic and Mesozoic Paleobotany - Chair: Peter Wilf

- 10:00 PAL3001 Gensel, Patricia* - Knier, Aubrey
Novel leaf morphology and variation in foliage similar to *Rhacopteris* from the Early Carboniferous Price Formation, southwestern Virginia, USA
- 10:15 PAL3002 Dunn, Michael* - Rothwell, Gar - Scott, Andrew
Reconstruction of the Whole Plant *Tetrastrichia bupatides* Gordon from the Devonian/Mississippian boundary of Scotland and Ireland
- 10:30 PAL3003 Decombeix, Anne-Laure* - Galtier, Jean - Meyer-Berthaud, Brigitte - Prestianni, Cyrille - Rowe, Nicholas - Harper, Carla
A review of the Early Mississippian anatomically preserved flora from Montagne Noire, France
- 10:45 PAL3004 Kustatscher, Evelyn* - Nowak, Hendrik
Microspores in macroplant fossils from the Triassic of Central Europe
- 11:00 PAL3005 Manchester, Steven* - Doyle, James - Hotton, Carol - Zhang, Xiaoqing - Wing, Scott
New gymnosperm reproductive organs of possible gnetalean affinity from the Upper Jurassic of the Morrison Formation in southern Utah
- 11:15 PAL3006 Rothwell, Gar* - Stockey, Ruth - Smith, Selena
Evolutionary diversification of Cretaceous taiwanoid Cupressaceae

10:00 AM - 3:15 PM SY2 Symposium Biodiversity Research Collecting Is More Important Than Ever—Ushering in a Collecting Renaissance

Chairs: Austin Mast and Patrick Sweeney

- 10:00 SY2SUM Mast, Austin* - Sweeney, Patrick
Biodiversity Research Collecting Is More Important Than Ever—Ushering in a Collecting Renaissance
- 10:00 SY2001 Sweeney, Patrick
Assessing Two Centuries of Herbarium Specimen Collecting Effort in New England, with an Eye Towards Guiding Collecting in the Future

10:30	SY2002	Thiers, Barbara Adjusting Collecting Practices to Create “Born Extended” Specimens
11:00	SY2003	Yule, Kelsey Collecting Natural History Specimens to Monitor Change: The NEON Biorepository as a Test Case
11:30	SY2004	Majure, Lucas The biodiversity crisis, plant exploration, and species discovery in the Greater Antilles: the roles of floristics, phylogenetics and monographic studies
12:00		Break
12:30	SY2006	Mast, Austin* - Pearson, Katelin - Buckley, Mikayla Historical Descriptions of Biotic Anomalies on Specimen Labels Inform Efforts to Mobilize Collectors on the Front Lines of Observing Change Today
1:00	SY2007	Powell, Caleb* - Motley, Jacob - Shaw, Joey Expediting Specimen Label Creation and Record Transcription Using Born-Digital Field Notes
1:30	SY2008	Isaac, Bonnie* - Heberling, Mason Using iNaturalist to enhance herbarium collections
2:00	SY2009	Feist, Mary Ann Strategically Targeting Under-Collected Areas to Increase Our Understanding of Species Status and Distribution at a State-wide Level

10:00 AM - 11:00 AM TROP1 Tropical Biology Contributed Papers - Chairs: Suzanne Koptur and Margaret Devall

10:00	TROP1001	Hughes, Mark* - Kidner, Catherine - Wilson, Hannah - Sreenath, Madhavi - Michel, Thibauld - Campos Dominguez, Lucia - Fan, Cynthia - Moonlight, Peter Insights into tropical diversity from the world's fastest-growing genus, <i>Begonia</i>
10:15	TROP1002	Valderrama, Eugenio* - Sass, Chodon - Pinilla-Vargas , Maria - Skinner, David - Landis, Jacob - Guan, Clarice - Almeida, Ana Maria - Grunder, Nikolaus - Specht, Chelsea Unraveling the spiraling radiation: a phylogenomic analysis of Neotropical <i>Costus</i> L

- 10:30TROP1003 DI GRUMO , DAVIDE* - MontÃ³far, Rommel - Dangles, Olivier - Pincebourde, Sylvain - Guerrero, Pablo C. - Hernandez, Cristian - Manzano Santana, Patricia Isabel
Floral thermogenesis and sexual mimicry in the Ecuadorian ivory palm *Phytelephas aequatorialis* across primary tropical forests and pastures
- 10:45TROP1004 Shrotri, Saket* - Dhargalkar, Rahul - P V, Najla - GOWDA, VINITA
Do grasslands show flowering synchrony? Quantifying the nature and shifts in mass-flowering on a plateau from the northern Western Ghats, India

10:00 AM - 2:00 PM W02 Workshop

Disentanglement of rings: a practical introduction to assembling plastomes and mitogenomes from NGS and LRS data.

Chair: Jian Jun Jin

10:00 AM - 5:00 PM W03 Workshop

De novo genome assembly and annotation with an emphasis on evolutionary and population genetic studies

Chair: Unknown Jacob Landis

11:00 AM - 11:30 AM Tropical Biology Business Meeting

12:00 PM - 1:00 PM Exhibit Hall Open

12:00 PM - 1:00 PM Physiology Business Meeting

12:00 PM - 12:05 PM W04 Botanical Drawing with Betsy Barry



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12:30 PM - 2:30 PM CG1 Functional & Comparative Genetics/Genomics I
Chairs: Alan Yocca and Tatyana Livshultz

- 12:30 CG1001 Berardi, Andrea* - Esfield, Korinna - Kuhlemeier, Cris
Genetic mechanism of the transition to red floral color in Petunia
- 12:45 CG1002 Rajewski, Alex* - Maheepala, Dinusha - Litt, Amy
Multispecies fruit transcriptomes highlight divergence across developmental and evolutionary time
- 1:00 CG1003 Landis, Jacob* - Valderrama, Eugenio - Grunder, Nikolaus - Skinner, David - Sass, Chodon - Vargas , Maria Pinila - Guan, Clarice - Almeida, Ana Maria - Specht, Chelsea
The genomic signatures of convergent evolution of pollination syndromes in *Costus* (Costaceae)
- 1:15 CG1004 Qaisar, Uzma* - Imran, Mahnoor - Bano, Shaher - But, Maria
Involvement of *Gbwri1* in fiber development and fatty acid biosynthesis in *Gossypium barbadense*
- 1:30 CG1005 Peredo, Elena L.* - Cardon, Zoe G.
Downregulation distinguishes desert from aquatic green algal response to desiccation
- 1:45 CG1006 McEvoy, Susan* - Trouern-Trend, Alexander - Sezen, Uzay - Wegrzyn, Jill - Swenson, Nathan
Genomic characterization and comparison of two maples highlights genes involved in the stress response to acidic soils
- 2:00 CG1007 Munshi, Lamiaa* - Christin, Pascal-Antoine
Hybridization might have facilitated the rapid evolution of C4 photosynthesis in closely related Molluginaceae
- 2:15 CG1008 Scott, Alison* - Maher, Olivia - Ferreira, Alyssa - Trouern-Trend, Alexander - Figueroa-Corona, Laura - Matallana, Lilian - Whetten, Ross - Wegrzyn, Jill
Less than evergreen: Leaf senescence transcriptomics in *Larix laricina*

12:30 PM - 1:30 PM EO1 Education and Outreach II: Course-based Undergraduate Research Experiences (CUREs), COVID
Chair: Benjamin Montgomery; Kyra Krakos

- 12:30 EO1001 Hale, Haley* - Chen, Yanni - Williams, Lindsay - Johnson, Matt
Implementing undergraduate research in an upper-level botany lab using target capture sequencing of herbarium specimen
- 12:45 EO1002 Pearson, Katelyn* - Yost, Jenn - Love, Natalie - Ramirez Parada, Tadeo
Creating New Data, Questions, and Scientists: A New Phenology-focused CURE using Herbarium Specimen Data
- 1:00 EO1003 Gershberg, Nicholas* - Callahan, Hilary
When a Plant Ignores a Pandemic: Making a Big Stink On-line
- 1:15 EO1004 Clevinger, Jennifer
Teaching Field Botany: Online But Still Outside

12:15 PM - 1:15 PM CV Reviews

12:30 PM - 2:00 PM MOL1 Molecular Ecology -
Chair: Aglaia Szukala; Katherine Wenzell

- 12:30 MOL1001 Groen, Simon* - Calic, Irina - Joly-Lopez, Zoe - Choi, Jae Young - Franks, Steven - Purugganan, Michael
The strength and pattern of natural selection on rice gene expression
- 12:45 MOL1002 Sammarco, Iris* - Munzbergova, Zuzana - Latzel, Vit
Natural DNA methylation variation in wild strawberry populations along a climatic gradient
- 1:00 MOL1003 Szukala, Aglaia* - Frajman, Bozo - Schäferswetter, Peter - Paun, Ovidiu
An integrative perspective of adaptation to different altitudes in the Alps
- 1:15 MOL1004 Ensing, David - Eckert, Christopher*
Inconsistent local adaptation despite strong genetic differentiation across a steep elevational gradient in growing season length
- 1:30 MOL1005 Mead, Alayna* - Medeiros, Camila - Sack, Lawren - Sork, Victoria
Oak drought tolerance traits and climatic niches determine their transcriptomic responses to leaf drying
- 1:45 MOL1006 Wenzell, Katherine* - McDonnell, Angela - Fant, Jeremie - Skogen, Krissa
Variation in floral traits across taxonomic and geographic scales as a model for species divergence in *Castilleja*

12:30 PM - 2:30 PM PAL4 Paleobotany II: Cenozoic Paleobotany -

Chair: Steven Manchester

- 12:30 PAL4001 Deanna, Rocio* - Wilf, Peter - Gandolfo, Maria
A new physaloid fruit fossil from Patagonia and the evolutionary history of nightshades
- 12:45 PAL4002 Perez Lara, Diana Karen* - Estrada-Ruiz, Emilio - Castaño, Posadas, Carlos
Paleoclimatic inference based on angiosperm wood anatomy from El Bosque Formation (Eocene), Chiapas, Mexico
- 1:00 PAL4003 Zhang, Xinwen* - Gelin, Uriel - Li, Shufeng - Liu, Jia - Zhou, Zhekun - Su, Tao
Exceptionally rich spinescence fossils from the late Oligocene of central Tibetan Plateau and its environmental implications
- 1:15 PAL4004 Xu, Shenglan* - Kodrul, Tatiana - Maslova, Natalia - Tobias, Anna - Quan, Cheng - Jin, Jianhua
Fossil fruits of *Nyssa* and associated fungi from the late Oligocene of South China
- 1:30 PAL4005 Liu, Xiaoyan* - Quan, Cheng - Jin, Jianhua
Late Oligocene fruiting catkins of *Alnus* from Guangxi, South China: The lowest latitudinal distributed fossil record
- 1:45 PAL4006 Oskolski, Alexei* - Stepanova , Anna - Huang, Luliang - Jin, Jianhua
Araucarioid fossil wood from the late Oligocene - early Miocene of Hainan Island: the most ancient evidence of the genus *Agathis* in eastern Asia
- 2:00 PAL4007 Wilf, Peter* - Zou, Xiaoyu - Donovan, Michael P. - Kocsis, László - Briguglio, Antonino - Shaw, David - Lambiase, Joseph J.
Paleobotanical Reconnaissance of Brunei
- 2:15 PAL4008 Hermsen, Elizabeth J.
Fossil *Passiflora* seeds from Gray Fossil Site (Pliocene, Tennessee, U.S.A.)

12:30 PM - 2:30 PM SYMB1 Symbioses: Plant, Animal, and Microbe

Interactions I -

Chair: Anne Cure; Gregory Pec

- 12:30SYMB1001 Hernández Álvarez , Gustavo Ramiro* - Mondragón-Chaparro , Demetria - Robles, Celerino
Effect of aqueous extracts of oak bark on germination of *Alamania punicea* Lex (Orchidaceae)

- 12:45 SYMB1002 Howard, Scarlett
Flower shape and quantity as informative cues for honeybee foragers
- 1:00 SYMB1003 Kozak, Krzysztof M.
Novel molecular phylogeny of Passifloraceae reveals highly labile coevolutionary interactions with *Heliconius* butterflies
- 1:15 SYMB1004 Curran, Bridget* - Jolles, Diana
Fine tuning the buzz pollination syndrome: using regional buzz profiling to understand the plant-pollinator relationship
- 1:30 SYMB1005 Cure, Anne* - Segraves, Kari
Neopolyploidy increases resilience to herbivore damage, but does not affect tolerance in *Arabidopsis thaliana*

12:30 PM - 2:15 PM SYS2 Systematics II: Rosids part B to Basal Asterids Chairs: Andrew Thornhill and Leigh Becklund

- 12:30 SYS2001 Alford, Mac* - Pagart, Corey - Collins, Tori - Krosnick, Shawn
Phylogenetic Relationships of the Genera of Achariaceae Based on Analyses of Morphological and DNA Data
- 12:45 SYS2002 Tressel, Lydia* - Vincent, Michael - Moore, Rich - Tepe, Eric
A Taxonomic Review of the *Trifolium depauperatum* species complex
- 1:00 SYS2003 Gardner, Elliot* - Garner, Mira - Cowan, Robyn - Dodsworth, Steven - Epitawalage, Niroshini - Arifiani, Deby - S., Sahromi - Baker, William J. - Forest, Felix - Maurin, Olivier - Zerega, Nyree J.C. - Monro, Alexandre - Hipp, Andrew L.
Multiple apparent losses of wind pollination in Moraceae revealed by phylogenomic analyses, and a corresponding generic revision of the tribe Moreae
- 1:15 SYS2004 Xie, Jianguang - Diaz, Thomas - Henkins, Brittany - Zou, Yutong - Li, Jianhua*
Recent pervasive chloroplast captures in hazelnuts (*Corylus* L., Betulaceae)
- 1:30 SYS2005 Roalson, Eric* - Soares Neto, Luciano - McGinty, Emma - Barrett, Russell - Hall, Jocelyn
An updated generic classification of Cleomaceae
- 1:45 SYS2006 Morrison , Glen R* - Huang, Yi - Saavedra, Natalie - Sanders, Andrew - Stoughton, Thomas - Keeley, Jon - Parker, V. T. - Litt, Amy
Genomic data show genetic distinction among some, but not all species, in the historically puzzling genus *Arctostaphylos*

2:00 SYS2007	Freudenstein, John* - Broe, Michael Resolving a key node in Monotropoideae (Ericaceae); dissecting the problem of conflicting signal
1:00 PM - 2:15 PM	PHYS1 Physiology I
	Chairs: Anitra Thorhaug and Anna Jacobsen
1:00 PHYS1001	Suissa, Jacob* - Green, Walton Low atmospheric CO ₂ levels induce nocturnal carbon accumulation in the lycophyte genus Iso'tes
1:15 PHYS1002	Thorhaug, Anitra* - Schwarz, Arthur - Belaire, Charlie - Verduin, Jennifer - Kiswara, Wawan - Prathee, Anchana Longevity of Restored Seagrass in Tropical/ Subtropical Atlantic, Pacific, and Indian Oceans
1:30 PHYS1003	Vaidya , Aditya S* - Peterson, Francis - Elzinga, Dezi - Park, Sang-Youl - Xing, Zenan - Eckhardt, James - Julianna, Faria - Cutler, Sean ANTABACTIN- AN ABA RECEPTOR ANTAGONIST, "CLICKED" TO PERFECTION
1:45 PHYS1004	Masondo, Nqobile* - Masike, Keabetswe - Makunga, Nokwanda Impact of salinity and nutrient stress on the metabolite profile of a commercially important South Africa medicinal plant - <i>Sutherlandia frutescens</i> (L.) R.Br. ex W.T.Aiton (Fabaceae)
1:30 PM - 2:30 PM	D1 Discussion Session National Science Foundation Information Session for Faculty and Other Professionals.
	Chair: Amanda Ingram
1:30 PM - 2:30 PM	BSA Teaching Section Business Meeting

3:00 PM - 5:00 PM COL09 Teaching Virtual Plant Systematics and Flora Courses

Chair: Unknown

- 3:00 COL09001 Struwe, Lena
Remote active learning in botany using your students' homes and neighborhoods – an opportunity and a challenge
- 3:30 COL09002 Kirchoff, Bruce
Teaching Plant Systematics in a Pan(dem)ic: Asynchronous Lectures, Interactive Assignments, and iNaturalist
- 4:00 COL09003 Ickert-Bond, Stefanie* - Bouffard, Christen - Kaden, Ute
Teaching AK flora online – before and during the COVID-19 pandemic – lessons learned from three years of asynchronous delivery
- 4:15 COL09004 McCauley, Ross
Teaching plant systematics online across the digital divide: perspectives from a Native American-Serving, Non-Tribal institution
- 4:30 COL09005 Liston, Aaron
Building an airplane in flight: lessons learned teaching online plant systematics
- 4:45 COL09006 Klips, Robert* - Mattingly, Kali - Stone, Benjamin
A course companion with web site with student subdomains eases the shift to online field botany instruction
- 5:00: COLO9007 Hauk, Warren - Teaching plant Systematics remotely

3:00 PM - 5:00 PM ETH1 Ethnobotany

Chair: Laura Klein

- 3:00 ETH1001 Applequist, Wendy
Persistence of use of Amazigh medicinal plants documented by ibn al-Baytar
- 3:15 ETH1002 Regmi, Siddhartha
Ethno-botanical study of medicinal plants in Syangja District, Nepal
- 3:30 ETH1003 Idris , Oladayo Amed* - Wintola, Olubunmi Abosede - Afolayan, Anthony Jide
Screening of *Rumex crispus* extracts potency using *Caenorhabditis elegans* model: an ultrastructural study of the effect and non-targeted identification of the bioactive compounds

3:45	ETH1004	Shen, Fengjiao* - Bai, Xiaoxia - Cui, Mengwei - Shi, Shuo - Li, Lin - Li, Zhibin - Zhao, Jiancheng Identification of 17 Chinese Rhododendron cultivars: A Preliminary Study Based on DNA Barcodes and Leaf Epidermis Microscopic Characteristics
4:00	ETH1005	Kemigisha, Esther* - Angelsen, Arild Opportunity versus Necessity: What drives Environmental Reliance?
4:15	ETH1006	Pandey, Vashist COVID-19, Plant Biodiversity, Utilization, Conservation and biodiversity - climatic link

3:00 PM - 4:00 PM HIST1 Botanical History

Chair: Nuala Caomhanach

3:00	HIST1001	Flannery, Maura John Torrey in Mid-Career: A Case Study
3:15	HIST1002	Smocovitis, Vassiliki <i>Say it with Flowers: Elizabeth Britton, Roses, and the Floral Politics of America</i>
3:30	HIST1003	Sundberg, Marshall The Teaching Botanist - - William F. Ganong and the Botanical Society of America
3:45	HIST1004	McCourt, Richard* - Josie, Iselin The marine botanical counterpart to Steinbeck and Rickett's cruise to the Sea of Cortez: E. Yale Dawson and marine algae in the Gulf of California

3:00 PM - 4:30 PM Macroevolution I

Chairs: Carrie Kiel and John Schenk

3:00	MACRO1001	Smith, Chelsea R.* - Teisher, Jordan - Moore, Abigail - Straub, Shannon - Livshultz, Tatyana Positive selection on a functional motif predicts two independent origins of homospermidine synthase and pyrrolizidine alkaloids in Apocynaceae
3:15	MACRO1002	Martinez-Gomez, Jesus * - Rose , Irving Jason - Freyman, William - Specht, Chelsea Where do umbels come from? Incorporating prior information of developmental genetics in trait evolution with the threshold model to generate more realistic models of morphological evolution
3:30	MACRO1003	Ramirez-Barahona, Santiago - Sessa, Emily - Zenil-Ferguson, Rosana* The impact of polyploidy and habitat preferences on fern diversification

- 3:45MACRO1004 Curran, Bridget - Jolles, Diana*
Resource partitioning among co-occurring buzz pollinated species in New England
- 4:00MACRO1005 Leslie, Andrew* - Mander, Luke
Functional diversity, transference of function, and complexity in vascular plant reproductive structures

3:00 PM - 4:30 PM PAL5 Paleobotany III: Patterns and trends
Chair: Dennis Stevenson

- 3:00 PAL5001 Stevenson, Dennis
Cycad Teratology
- 3:15 PAL5002 Benca, Jeffrey* - Duijnste, Ivo - Looy, Cindy
Pollen malformations as indicators of past environmental stress:
Comparing background variation with heightened UV-B exposure in modern conifers
- 3:30 PAL5003 Allen, Sarah* - Stull, Gregory W.
Leaf architecture in extant Cannabaceae with a review of select leaf fossils previously assigned to the family
- 3:45 PAL5004 Gallaher, Timothy* - Perry, Jessica - Zhang, Jifan - Meng, Xiangyun - Jamieson, Kevin - Strömberg, Caroline
2D computer vision and 3D geometric morphometric shape analysis of grass silica short cell phytoliths (GSSCP): strengths and weaknesses of these approaches and implications for grass biogeography
- 4:00 PAL5005 Boyce, C. Kevin* - Ibarra, Daniel E. - Nelsen, Matthew - DAntonio, Michael
Weathering, nutrient fluxes, and the long-term consequences of coal for the evolution of nitrogen-based symbioses

3:00 PM - 4:30 PM Physiology II -
Chair: Anitra Thorhaug; Anna Jacobsen

- 3:00 PHYS2001 Thorhaug, Anitra* - Gallgaher, Barry - Chew, Gwendolyn - Schwarz, Arthur - Kiswara , Wawan - Prathee, Anchana
Blue and Black Carbon of Mangroves and Seagrass in Southeast Asia
- 3:15 PHYS2002 Hupp, Jason R.* - McCoy, Johnathan I. E. - Lynch, Douglas J. - Johnson, Mark A.
Reducing carbon assimilation measurement uncertainty from aqueous samples in open flow-through gas exchange systems

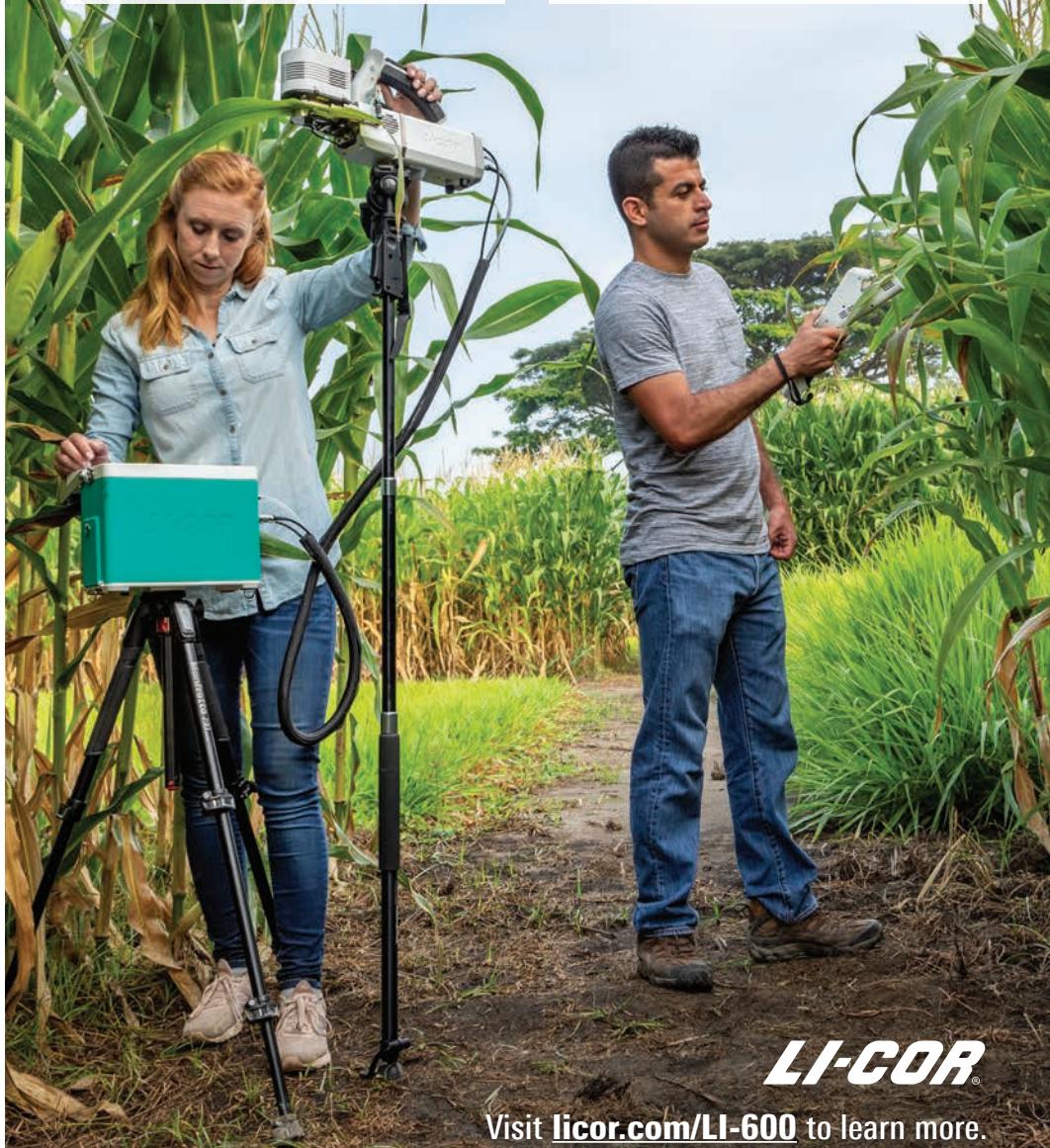
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- 3:30 PHYS2003 Tucker, Lauren* - Bobich, Edward - Davis, Stephen - Mellano, Valerie - Ewers, Frank
The effect of water stress on canker disease in *Juglans californica*
- 3:45 PHYS2004 Ordeman, Elizabeth
Uncovering the Trigger of Post-Pollination Petal Senescence in *Ipomoea purpurea*
- 4:00 PHYS2005 Momayyezi, Mina* - Borsuk, Aleca - Brodersen, Craig - Gilbert, Matthew - Theroux-Rancourt, Guillaume - McElrone, Andrew
Leaf anatomy links CO₂ diffusion and light absorption under inherent and drought-induced conditions in two walnut species
- 4:15 PHYS2006 Lewis, Raymond
The effects of salinity on the development of microscopic life history stages of the marine brown alga *Alaria marginata*

3:00 PM - 4:45 PM Population Genetics/Genomics I

Chair: Jeremy Coate

- 3:00 POPGEN1001 Medrano, MÃ³nica - Alonso, Conchita* - Bazaga, Pilar - LÃ³pez, Esmeralda - Herrera, Carlos
Comparative genetic and epigenetic diversity in pairs of sympatric, closely-related plants with contrasting distribution ranges in southeastern Iberian mountains
- 3:15 POPGEN1002 Gomez Quijano, Maria Jose* - Etterson, Julie - Gross, Briana
Why do Coastal Seeds Fail? A Population genetics and phenotypic analysis of coastal and non-coastal Northern red oak in Minnesota
- 3:30 POPGEN1003 Arnelas Seco, Itziar* - Perez-Collazos, Ernesto - Devesa, Juan - Manzaneda, Antonio J. - Catalan, Pilar
Morphological differentiation and genetic isolation of intraspecific floral morphotypes of Iberian knapweeds (*Centaurea* sects. *Jacea* and *Leptanthus*, Asteraceae)
- 3:45 POPGEN1004 Cisternas, Anita* - Jogesh, Tania - Skogen, Krissa - Fant, Jeremie
Evolution of selfing syndrome and its influence on genetic diversity and inbreeding: A range-wide study in *Oenothera primiveris* (Onagraceae)
- 4:00 POPGEN1005 Stevens, Mia* - Loveless, Marilyn - Ison, Jennifer
Hummingbirds are not Fabaceae pollinators: *Erythrina flabelliformis*, a hummingbird-pollinated desert perennial, has significant fine-scale genetic structure and low pollen movement distances
- 4:15 POPGEN1006 So, Cameron* - Weis, Arthur - Shaw, Ruth - Shaw, Frank - Rotman, Sydney - Sibolibane, Micha
The adaptive potential of lifetime fitness increases under a future climate change scenario in a population of *Brassica rapa*

3:00 PM - 4:00 PM S03 Diversity Keynote Lecture
Diversity and inclusion in the sciences:
Relationships and reciprocity
Dr. Beth Leonard

Introduced by: Unknown

4:00 PM - 5:00 PM S05 Annals of Botany lecture Rod Peakall
Sexual deception in Australian orchids, insights on the evolution of extreme pollinator specialization and its reversibility
Introduction - Jeffrey Karron

5:00 PM - 6:00 PM Exhibit Hall Open

5:00 PM - 6:30 PM BSA Council Meeting

All Society Poster Tuesday Session

5:00 - 6:00

ECOLOGY

- | | |
|--------|--|
| PEC001 | Knauf, Kyla* - Ernst, Adrienne
Phylogenetic Diversity – A Potential Indicator of Invasion Resistance |
| PEC002 | Brookover, Zoe - Christman, Brian* - Laport, Robert
Modeling Population Dynamics of the American Chestnut (<i>Castanea dentata</i>) Near the Historical Range Limit in west Tennessee |
| PEC003 | Suglia, Elena* - De La Pascua, Danielle - Strauss, Sharon - Schmitt, Johanna - Gremer, Jennifer
Phenological responses to variable timing and frequency of herbivory in a native wildflower |
| PEC004 | Wu, Yingtong
What determines species range size? Testing niche-breadth and niche-position hypotheses in North and Central American oaks (<i>Quercus</i> spp.) |

PEC005	Antoine, Ariel* - Williams, Tanisha - McDonnell, Angela - Cantley, Jason - Jobson, Peter - Martine, Christopher Biogeographic barrier testing methods suggest genetic differentiation within a morphologically-stable species of the Australian Monsoon Tropics
PEC006	QUAN, JIAXIN* - Munzbergova, Zuzana - Latzel, Vit Drought stress: How long can plants remember?
PEC007	Nyandwi, Alphonse* - Eckardt , Winnie - DeVore, Melanie Stinging trichome density and morphology of three nettle species reflect mountain gorilla feeding behavior
PEC008	Querns, Aleah* - Wooliver, Rachel - Vallejo-MarÃn, Mario - Sheth, Seema The Evolution of Thermal Tolerance and Clines in Native vs. Invasive Populations of <i>Mimulus guttatus</i>
PEC009	Van Natto, Alyson* - Friedman, Jannice - Kim, Natalie Synchrony of phenology of leaf bud burst and flowering in animal and wind pollinated trees
PEC010	Kleiman, Blaire How do weeds affect insects in mango farms of South Florida?
PEC011	McCall, Andrew* - Banta-Long, Wendy - Brennan, Aedin - Cain, Ethan - Hurst, Philip - Fiegel, Haley - Karkut, Max - Ngo, Hang - O'Neill-Dee, Conner - Postema, Elizabeth - Sok, Rebecca - Smith, David S. How does growth and reproduction of spicebush (<i>Lindera benzoin</i>) vary over three seasons?
PEC012	Deecker, Elizabeth* - Billman, Brittany - Siryani, Nijmih - Rollinson, Emily Effects of Invasive Aphids on Common Milkweed Ecology
PEC013	Yule, Kelsey* - Steger, Laura National Ecological Observatory Network (NEON) Biorepository Plant and Algal Samples Available for Ecological and Evolutionary Research
PEC014	Soares, Vanessa* - Scremen-Dias , Edna - Daibes, LuÃs Felipe - Damasceno-Junior, Geraldo - Pott, Arnildo - De Lima , Liana Role of Fire on Regeneration from Seed of Two Pioneer Species of a Tropical Wetland
PEC015	Coleman, Jovan* - Grimes, Alexander - Whitcomb, Sean Ecosystem services provided by the urban forest of the Mesa Community College Arboretum
PEC016	Crandall, Raelene* - Knight, Tiffany Invasive shrub increases forest resilience to drought and fire disturbances

PEC017	Borer, Catherine* - Leathers, Jack Altered calcium cycling in the forest understory in the context of flowering dogwood decline
PEC018	Haynes, Audrey Presence of N-fixing neighbors increases leaf N and water use efficiency in <i>Castilleja applegatei</i> , a root hemiparasite
PEC019	Johnson, Loretta* - Wiebe, Paige - Galliart, Matt - Alsdurf, Jacob - Keenan, Megan Intraspecific variation in big bluestem Andropogon gerardii populations across a precipitation gradient of the Central US grasslands: Response to experimental drought
PEC020	Etterson, Julie - Franks, Steven - Mazer, Susan - Schneider, Heather - Shaw, Ruth - Soper Gorden, Nicole* - Weber, Jenn - Weis, Arthur Project Baseline: A genetic time capsule for studying plant evolutionary responses to global change
PEC021	Gillard, Morgane - Castillo, JesÃ³s M. - Mesgaran, Mohsen B. - Futrell, Caryn J. - Grewell, Brenda J.* High aqueous salinity exposure does not preclude germination of invasive Iris pseudacorus

ECOPHYSIOLOGY

PPE001	Lim-Hing , Simone* - Gandhi, Kamal JK - Barnes, Brittany F - Morrison, Lawrence A - McCarty, Elizabeth - Villari, Caterina Untangling the micronutrient status and defense responses in loblolly pine (<i>Pinus taeda</i>)
PPE002	Davis, Rebekah* - Davis, Kaleigh - Mason, Chase Capillary Electrophoresis Buffer Optimization for Plant Secondary Metabolite Analysis
PPE003	Rodriguez, Arantza - Castillo, Raul - Collazo-Ortega, Margarita* Inbreeding reduces seed germination of the Neotropical riverweed <i>Marathrum foeniculaceum</i> (Podostemaceae)
PPE004	Segovia-Rivas, AlÃ¡* - Olson, Mark - Donoghue, Michael - Edwards, Erika - Rosell, Julieta - Anfodillo, Tommaso - Moeglein, Morgan Plant hydraulics and height of <i>Viburnum</i> across climate gradients
PPE005	Henry, Christian* - Browne, Marvin - Sack, Lawren Foliar uptake and cuticular conductance

PPE006	Gage , Amy S* - Handel, Steven - Popp, Eva - Flanders, Jenna Enhancing coastal sand dunes with a native woody vine: coastal ecotypes of <i>Parthenocissus quinquefolia</i> outperform inland ecotypes in salt spray and sand burial greenhouse experiments
PPE007	Dawson, Hilary Rose* - Maxwell, Toby - Bridgman, Scott - Reed, Paul - Silva, Lucas Morphological and functional leaf trait responses to experimental drought in Pacific Northwest grasslands
PPE008	Zhang, Yongjiang Warming Enhanced Water and Nutrient Deficits of Wild Blueberries
PPE009	Shapiro, Alex - Pena-Alfaro, Marisa* - Farias, Lina - Hathaway, Ron - Heschel, M. Shane Cotyledon stomatal density differentiation and quantitative genetic analysis of seedling traits in <i>Impatiens capensis</i> ecotypes

EDUCATION AND OUTREACH

PEO001	Edwards, Molly* - Rahni, Ramin - Russo, Silviana Science IRL: a YouTube channel that's here to show you what being a scientist is like, in real life!
PEO002	Nepal, Madhav* - Bott-Knutson, Rebecca - Mathew, Febina - Janaswamy, Srinivas - White, Troy Enhancing College Experience of Native American Students through FAST-REEU Program
PEO003	Sutherland, Brittany* - Barrett, Craig - Beck, James - Latvis, Maribeth - McKain, Michael - Sigel, Erin - Kooyers, Nicholas Combating invasives by encouraging growth: The Consortium for Plant INvasion Genomics (CPING)
PEO004	Goodwillie, Carol* - Clark, Patricia Bringing trees to life through theatre arts

ETHNOBOTANY

PET001	Perdomo, Rosemary - Yerima, Fadel - Priano, Christine - Koroch, Adolfina* Potential Antioxidant Capacity and Antibacterial Effect of <i>Xylopia aethiopica</i> Plant Extracts
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- PET002 Liu, Shih-Hui* - Lin , Chih-Chung - Yang , Yuen-Po
Lessons For On-Farm Conservation Of Djulis Diversity In Taiwan: I. An Ethnobotanical Survey Of *Chenopodium formosanum*
- PET003 Aganyira, Kellen* - Tabuti , J.R.S
Determinants of participation in state and private PES projects in Uganda
- PET004 Hart, Robbie
Biodiversity and ethnobotany of Himalayan homegardens

EVOLUTIONARY DEVELOPMENTAL BIOLOGY (EVO-DEVO)

- PEV001 Mendelson, Ellie* - Zumajo, Cecilia - Ambrose, Barbara
The Fruit Developmental Network in Early Diverging
Angiosperms *Austrobaileya scandens* and *Illicium floridanum*
- PEV002 Rose , Irving Jason* - Martinez-Gomez, Jesus - Specht, Chelsea
Inflorescence Structure and Development in Liliales: What is the Ancestral
State of the Liliales order?
- PEV003 de Neve, Amber* - Klein, Harry - Bartlett, Madelaine
The development and evolution of unisexual flowers in Poaceae
- PEV004 Dunivant, Taryn* - Singh, Vibhuti - Hileman, Lena
Investigation of the function and expression of *CYCLOIDEA* genes in
Mimulus lewisii
- PEV005 Kuempers, Britta
Tiny plants with great potential – Understanding growth and reproduction
in Duckweed
- PEV006 Noroozi, Maryam* - Cohen, Jim - Witherspoon, Jocelyn - Ryan, Gillian
- Bogler, David - Miller, James - Riahi, Mehrshid - Ghahremaninejad,
Farrokh
Pollen diversity and evolution in Boraginaceae
- PEV007 Nedblake, Haylee* - Wessinger, Carolyn - Hileman, Lena
Evolution of floral pigments in *Penstemon*
- PEV008 Majumder, Sambadi
A comparative study of the differential terpene production in 3 species of
polyploid and diploid wild sunflowers and an evaluation of the associated
differential GXE interactions
- PEV009 Guan, Clarice* - Skinner, David - Specht, Chelsea
Piecewise phyllotaxis in *Costus* (Costaceae)

- PEV010 Parihar, Bharti* - Almeida, Ana Maria
A Morphological and Molecular Approach Towards Plantlet Development
in *K. marnieriana*
- PEV011 Thrash, Tyler* - Lee, Hansol - Baker, Robert L.
Quantitative Trait Loci for Constraining Models of Resource Allocation in
Brassica rapa

MOLECULAR ECOLOGY

- PME001 Cobo, Irene* - Herndon, Nic - Staton, Margaret - Grau, Emily - Buehler,
Sean - Richter, Peter - Risharde , Ramnath - Demurjian, Charles -
Almsaeed, Abdullah - Wegrzyn, Jill
Integrative imputation-driven meta-analysis of genome-wide and genome-
environment association analyses provides insights into genetic control of
fitness related traits in trees: *Populus trichocarpa* as case study

7:00 PM - 8:30 PM BIPOC Mixer

8:00 PM - 9:30 PM LGBTQ & Allies Happy Hour

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WEDNESDAY, JULY 29TH

9:00 AM - 10:00 AM Exhibit Hall Open

9:45 AM - 10:00 AM S07 Opening Welcome
Chair: Unknown

10:00 PM - 5:00 PM W06 Workshop
Introduction to High-Throughput Sequencing: Techniques, Applications, and Analysis -
Chair: Brittany Sutherland

10:00 AM - 2:30 PM AM1 Anatomy and Morphology
Chair: Funmilola Mabel OJO; Daniel Gladish

- 10:00 AM1001 Gladish, Daniel K.* - Saito, Susumu - Miki, Yasushi - Niki, Teruo
Special thin-section preparation makes possible high-resolution "reverse" tomography by light microscopy and laptop computer
- 10:15 AM1002 Hodge, John* - Li, Qing - Doust, Andrew
Reconstructing the engine of ontogeny: Evidence for hierarchical function-value traits governing developmental processes
- 10:30 AM1003 Barceló-Anguiano, M - Hormaza, Jose - Losada, Juan M*
SOURCE-SINK TRANSPORT IN POLYPLOID TREES: A CASE EXAMPLE IN AUTOTETRAPLOID MANGO (*Mangifera indica*)
- 10:45 AM1004 Zumajo, Cecilia* - Stevenson, Dennis - Ambrose, Barbara
Evolution of the seed coat
- 11:00 AM1005 Pegg, Timothy* - Gladish, Daniel - Edelmann, Richard
Immunoprofiling of Cell Wall Carbohydrate Modifications during Flooding-Induced Aerenchyma Formation in Fabaceae Roots

11:15 AM1006	Teixeira-Costa, Luiza* - Ceccantini, Gregorio What's in a name? That which we call a <i>haustorium</i> by any other name would cause misunderstanding of parasitic plant biology
11:30 AM1007	Kirchoff, Bruce The Structure of the inflorescence in the Lowiaceae (Zingiberales) has similarities to that of the Strelitziaceae that may support common ancestry
11:45 AM1008	Li, Qing - Doust, Andrew* High temporal resolution growth analysis of the C4 grass <i>Setaria viridis</i> in high and low light environments
12:00	Break
12:30 AM1010	OJO, Funmilola Mabel* - Nwokeocha, Chinyere Constance Morphological and Foliar Epidermal studies of <i>Andropogon gayanus</i> (Kunth) <i>Andropogon tectorum</i> (Schum & Thonns) Complex in Southwestern, Nigeria
12:45 AM1011	Seago, James L More About Endodermis in Angiosperm StemsAmborellaCeratophyllum,
1:00 AM1012	Gama, Gugu* - Oskolski, Alexei Comparative stem anatomy of South African species of <i>Grewia</i> and related genera (Malvaceae)
1:15 AM1013	Borsuk, Aleca* - Roddy, Adam - Theroux-Rancourt, Guillaume - Brodersen, Craig Structural organization of the spongy mesophyll in laminar leaves with reticulate venation
1:30 AM1014	L. Cunha Neto, Israel* - Pace, Marcelo - Douglas, Norman - H. Nee, Michael - C. F. de SÃ¡, Cyl - Moore, Michael - Angyalossy, Veronica Stele diversity and evolution in Nyctaginaceae: medullary bundles across the family
1:45 AM1015	Pace, Marcelo* - Hernandez-Hernandez, Brenda - Lohmann, Lucia - Angyalossy, Veronica - Cacho, N. Ivalu Wood and bark anatomical synapomorphies of Bignoniaceae clades, with an emphasis in the taxonomic placement of <i>Astianthus</i>
2:00 AM1016	Nejapa Mendoza, Rosa Celia* - Cabanillas, Pablo A. - Pace, Marcelo Ontogeny of the successive cambia in the stems of <i>Wisteria</i> (Leguminosae), a temperate genus of lianas
2:15 AM1017	Luna Márquez , Lorena* - Pace, Marcelo Ontogeny and phylogenetic distribution of the lobed stem cambial variant within the pantropical genus <i>Bytneria</i> (Malvaceae s.l., Bytnerioideae)

10:00 AM - 1:15 PM COL01 Biodiversity synthesis: Linking large phylogenies with species traits and ecologies

Chair: Ryan Folk ; Carolina Siniscalchi

10:00	Introduction
10:15COL01002	Siniscalchi, Carolina* - Kates, Heather - Soltis, Pamela - Soltis, Douglas - Guralnick, Robert - Folk, Ryan Testing the evolutionary success of nitrogen-fixing symbioses in challenging soil environments
10:30COL01003	Guralnick, Robert* - Li, Daijiang Niches in time, space, and environment: Concepts and comparative contexts
10:45COL01004	Stucky, Brian* - Guralnick, Robert - Deck, John - Denny, Ellen - Bolmgren, Kjell - Li, Daijiang - Walls, Ramona Wrangling heterogeneous plant trait data with symbolic reasoning
11:00COL01005	Nogales da Costa Vasconcelos, Thais* - O'Meara, Brian - Beaulieu, Jeremy Historical drivers leading to spatial gradients of diversity in flowering plants
11:15COL01006	Suisse, Jacob - Sundue, Michael - Testo, Weston* Fronds in high places: large-scale integrative analyses explain global patterns of fern diversity
11:30COL01007	Marx, Hannah Using phylogenies to understand why diverse communities exist in extreme environments
11:45	Break
12:30COL01009	Edwards, Robert D.* - Mandel, Jennifer The Importance of Large-scale Phylogenomics in Understanding the Evolution of North American Compositae
12:45COL01010	Heyduk, Karolina* - McAssey, Edward - Ray, Jeremy - Leebens-Mack, Jim Synthesizing phylogeny and ecophysiology to understand photosynthetic evolution in the Agavoideae
1:00	Discussion

10:00 AM - 12:00 PM REP1 Reproductive Processes 1

Chair: Asawari Albal; Dorothy Christopher

- 10:00 REP1001 Karron, Jeffrey* - Christopher, Dorothy - Semski, Wendy - Trapnell, Dorset - Smallwood , Patrick Alan - Mitchell, Randall
Pollination, paternity and Bateman's principle in a hermaphroditic plant
- 10:15 REP1002 Semski, Wendy* - Mitchell, Randall - Karron, Jeffrey
Individual flowering schedules and floral display size in monkeyflower: a common garden study
- 10:30 REP1003 Powers, John* - Sakai, Ann - Weller, Stephen - Campbell, Diane
Sexual dimorphism, inter-island evolutionary divergence, and diel variation in floral volatiles of wind-pollinated *Schiedea globosa* (Caryophyllaceae)
- 10:45 REP1004 LARUE, Clement* - BASSET, Gaelle - LEPAIS, Olivier - PETIT, Remy
Is self-pollen interference driving the evolution of gynodioecy in European chestnut?
- 11:00 REP1005 Joly, Simon* - Schoen, Daniel
Evolution of cleistogamy is strongly associated with zygomorphy in flowering plants
- 11:15 REP1006 Abdelaziz, Mohamed* - Muñoz-Pajares, A. Jesú's - Bakkali, Mohammed
Self-fertilization is not always a dead end: the evolution of outcrossing species in a selfing clade
- 11:30 REP1007 Igiť, Boris* - Ramanauskas, Karolis
Candidate-based discovery of self-incompatibility across eudicots
- 11:45 REP1008 Albal, Asawari* - G, Azad - Shrotri, Saket - GOWDA, VINITA
What drives floral gender expression? Example from an andromonoecious spiderwort *Murdannia simplex* (Commelinaceae)

10:00 AM - 2:00 PM SY3 From Genes to Distributions: physiological ecology as an integrator of polyploid biology

Organized by: Christopher Krieg

10:00 SY3SUM	Krieg, Christopher* - Augustine, Steven - Givnish, Thomas From Genes to Distributions: physiological ecology as an integrator of polyploid biology
10:30 SY3001	Wei, Na* - Ashman, Tia-Lynn - Cronn, Richard - Liston, Aaron Polyploidy confers ecological advantage in wild and synthetic <i>Fragaria</i>
11:00 SY3002	Anneberg, Thomas* - Segraves, Kari Neopolyploidy in <i>Heuchera cylindrica</i> causes increased nutrient limitation phenotypes of functional traits
11:30 SY3003	Southgate, Morgan* - Barrington, David Ecological dynamics of hybridization in the <i>Adiantum pedatum</i> complex at local and regional scales
12:00	Break
12:30 SY3005	Simonin , Kevin A* - Roddy, Adam - Theroux-Rancourt, Guillaume - Jiang, Guo-Feng Simple scaling rules that link genome size to photosynthetic metabolism
1:00 SY3006	John , Grace P* - Bonnette, Jason - McQueen, Alice - Zhang, Li - Juenger, Thomas Anatomical and functional implications of allopolyploidy in Switchgrass (<i>Panicum virgatum</i>) across geographic sites
1:30	Discussion

10:00 AM - 12:00 PM SYMB2 Symbioses: Plant, Animal, and

Microbe Interactions II

Chair: Adam Schneider; Gregory Pec

10:00SYMB2001	Pec, Gregory* - Breight, Michael - Twigg, Paul - Shaffer, Julie Rhizosphere bacterial diversity and composition varies across <i>Zea mays</i> growth stages
10:15SYMB2002	Stahlhut, Katherine* - Dowell, Jordan - Temme, Andries - Burke, John - Goolsby, Eric - Mason, Chase Genetic control of arbuscular mycorrhizal colonization in <i>Helianthus annuus</i>

- 10:30SYMB2003 Scharnagl, Anna* - Simms, Ellen
Landscape-level mapping of the microbiome
- 10:45SYMB2004 Swift, Joel* - Miller, Allison - Kwasniewski, Misha - Hall, Megan
The root of it all: Factors influencing plant-associated microorganism communities in *Vitis*
- 11:00SYMB2005 Schneider, Adam* - Fitzpatrick, Connor
Unique bacterial assembly, composition, and interactions in a parasitic plant and its host

10:00 AM - 12:15 PM SYS3 Systematics III: Cooley Award presentations -

Chair: Daniel Spalink; Jun Wen

- 10:00 SYS3001 Pejhanmehr, Mersedeh* - Morden, Clifford - Yorkston, Mitsuko
Phylogenetic analysis of *Sida* (Malvaceae) and association with other Malveae genera
- 10:15 SYS3002 Saunders, Theresa* - Porter, J. Mark - Johnson, Leigh
Resolving relationships in *Aliciella* subsection *Subnuda* (Polemoniaceae)
- 10:30 SYS3003 Ranarivelo, Heritiana
Integrative taxonomy: investigating species boundaries in Malagasy *Psorospermum* using morphometrics and molecular phylogenetic methods
- 10:45 SYS3004 Skibicki, Sam* - Barrett, Craig
Creating genomic libraries from herbarium specimens for phylogenomics in the subtribe Zinniinae (Asteraceae; Heliantheae)
- 11:00 SYS3005 Amarasinghe, Prabha* - Joshi, Sneha - Page, Navendu - Wijedasa, Lahiru S. - Stone, Robert Douglas - Kathriarachchi, Hashendra - Merello, Mary - Judd, Walter - Kodandaramaiah, Ullasa - Cellinese, Nico
A global perspective on *Memecylon* (Melastomataceae): Insights into biogeography and character evolution
- 11:15 SYS3006 Frazão, Annelise* - Lohmann, Lucia
Using molecular and morphological data to investigate the *Tanaecium dichotomum* species complex (Bignonieae, Bignoniaceae)
- 11:30 SYS3007 Charboneau, Joseph* - Cronn, Rich - Liston, Aaron - Wojciechowski, Martin - Sanderson, Michael
Examining the evolution of selenium hyperaccumulation in the New World clade of *Astragalus* (Fabaceae) using phylogenomics
- 11:45 SYS3008 Bentz, Philip* - Harkess, Alex - Popecki, Margot - Starr, Dakota - Leebens-Mack, Jim
Timing of evolutionary origins of dioecy in *Asparagus* L

12:00 PM - 1:00 PM Exhibit Hall Open

12:30 PM - 1:45 PM BIOG2 Biogeography I

Chair: Hannah Marx

12:30BIOG2001 Breslin, Peter* - Wojciechowski, Martin - Majure, Lucas
Recent divergence, rapid diversification and multiple radiations of *Cochemiea* and *Mammillaria* (Cactaceae) in the Baja California, Mexico region: accounting for high species richness and peninsular endemism

12:45BIOG2002 Cacho, N. Ivalu* - McIntyre, Patrick - Jose-Zacatula, Daniel - Piñata de la Rosa, Itzel A - Lopez-Marmolejo, Clara - Vazquez-Ibarra, Marlene S - Medina-Rodriguez, Max D - Caraballo, Marcos
Investigating the interplay between convergence and divergence in the Caribbean ring-species *Euphorbia tithymaloides*

1:00 BIOG2003 Billings, Garrett* - Barkworth, Mary
Distribution of North American grasses within the subfamily Chloridodeae

1:15 BIOG2004 Baer, Kathryn C.
Using Forest Inventory Data to Predict Shifting Subsistence Plant Species Distributions in Interior Alaska

12:30 PM - 4:30 PM COL05 Colloquium Extreme conservation measures for plants at the extremes in the Hawaiian archipelago model system
Chairs: Nina Rønsted and Seana Walsh

12:30COL05SUM Rønsted, Nina* - Walsh, Seana
Extreme conservation measures for plants at the extremes in the Hawaiian archipelago model system

12:45COL05002 Keir, Matthew
Partnerships to Advance Plant Conservation in Hawai'i

1:00 COL05003 Winter, Kawika
Biocultural restoration in Hawai'i also achieves core conservation goals

1:15 COL05004 Nagendra, Uma* - Thorson, Amy - Ramelb, Ashley - Mo'okini-Oliveira, Puakea
Weathering the extremes in restoration: lessons from landslides on Kaua'i

1:30 COL05005 Nyberg, Ben* - Williams, Adam M. - Winter, Kawika
Unmanned Aircraft Systems and the Future of Botanical Conservation: A Case Study of a Cliff-Dwelling Island Endemic

1:45 COL05006	Koko, Jerry Arbuscular mycorrhizal fungi and <i>Moesziomyces aphidis</i> decrease disease severity of powdery mildew (<i>Neoerysiphe galeopsidis</i>) in endangered <i>Phyllostegia kaalaensis</i>
2:00 COL05007	Walsh, Seana* - Fant, Jeremie - Wood, Jordan - Havens, Kayri How demographic and genetic analysis tools used by zoos can help guide conservation collection management of the Critically Endangered Hawaiian lobeliad, <i>Brighamia insignis</i>
2:15 COL05008	Rønsted, Nina* - Walsh, Seana - Nyberg, Ben - Wood, Ken - Clark, Margaret - Lorence, David - Wolkis, Dustin - Nagendra, Uma - Drake, Donald - Keir, Matthew The impact of gaps and biases on new uses of the IUCN Red List in Hawaii
2:30	Break
3:00 COL05010	Stacy, Elizabeth Hawaii's landscape-dominant genus <i>Metrosideros</i> comprises many taxa of conservation concern
3:30 COL05011	Wolkis, Dustin - Deans, Susan* Assessing the use of herbarium specimens as an untapped source for 'ōhi'a seed preservation
3:45 COL05012	Wolkis, Dustin* - Walsh, Seana - Barnes, Chris - Rønsted, Nina Seed viability in Hawaii's foundational 'ōhi'a trees linked to locality and environmental variables
4:00	Discussion

12:30 PM - 2:30 PM ECO2 Ecology 2 : Adaptation and Landscape Genetics

Chairs: Jenni Velichka; Thomas Anneberg

12:30 ECO2001	Velichka, Jenni* - Friedman, Jannice Intraspecific variation in seed dispersal strategies between annual and perennial ecotypes of <i>Mimulus guttatus</i>
12:45 ECO2002	Das, Aayudh* - Preston, Jill Understanding how Pooideae stress adaptations explain climatic distributions
1:00 ECO2003	Laport, Robert - Aronson, Ellinor* Stomatal Size and Density Variations in the Polyploids of <i>Larrea tridentata</i> : Landscape Level and Areas of Co-Occurrences
1:15 ECO2004	Cross, Regan* - Eckert, Christopher Is local adaptation associated with long-term persistence beyond the range?

- 1:30 ECO2005 Anneberg, Thomas* - Segraves, Kari
Neopolyploidy exacerbates nutritional needs and affects resource capture and storage traits in *Heuchera cylindrica*

12:30 PM - 2:30 PM PHYL2 Phylogenomics II

Chair: Amanda Fisher; Wenbin Zhou

- 12:30PHYL2001 Strickler, Susan* - Gates, Daniel - Powell, Adrian - Hauser, Duncan - Vilela, Julianne - Hu, Alice - Li, Fay-Wei - Mueller, Lukas - Smith, Stacey
Genome sequence for the purple-flowered Andean shrub *lochroma cyaneum* (Solanaceae)
- 12:45PHYL2002 Woudstra, Yannick* - Viruel, Juan - Howard, Caroline - RÃ¸nsted, Nina - Grace, Olwen
Molecular identification and phylogenomic resolution of *Aloe vera* and relatives using customised nuclear target enrichment
- 1:00 PHYL2003 Simmonds, Sara* - Smith, James - Davidson, Christopher - Buerki, Sven
Untangling big genera using big data: Phylogenomics of *Piper* and *Peperomia* (Piperaceae)
- 1:15 PHYL2004 Gaynor, Michelle* - Fu, Chaonan - Gao, Lianming - Lu, Li-Min - Soltis, Douglas - Soltis, Pamela
Biogeography and ecological niche evolution in Diapensiaceae inferred from phylogenetic analysis
- 1:30 PHYL2005 Hodel, Richard* - Zimmer, Elizabeth - Wen, Jun
Nuclear phylogenomic analysis resolves the backbone of *Prunus* and identifies lineages impacted by frequent reticulate evolution
- 1:45 PHYL2006 Rahmatpour, Nasim* - Hauser, Duncan - Nelson, Jessica - Villarreal Aguilar, Juan Carlos - Ho, Ming-Yang - Li, Fay-Wei
A new extant cyanobacterial lineage that diverged from *Gloeobacter* over 1.4 billion years

- 12:30 REP2001 Pearson, Avery* - Nicole Incarnato , Miyauna Monique - Johnson, Ren - Stevens, Mia - Ison, Jennifer
Independent bees working together: Male fitness of prairie perennial *Echinacea angustifolia* is more influenced by cumulative bee visitation than by any individual species
- 12:45 REP2002 Christopher, Dorothy* - Karron, Jeffrey - Trapnell, Dorset - Mitchell, Randall
Population selfing rates vary with floral display size and pollinator activity in natural populations of monkeyflower
- 1:00 REP2003 Tai, King-Chun - Shrestha, Mani - Dyer, Adrian G. - Yang, En-Cheng - Wang, Chun-Neng*
Floral colour diversity on the mountainous island of Taiwan reveals phylogenetic clustering and selective filtering due to bee preferences
- 1:15 REP2004 Kemp, Jurene* - Vallejo-Marin, Mario
Pollen dispensing schedules in buzz-pollinated plants: Comparing species with contrasting floral morphologies
- 1:30 REP2005 Dellinger, Agnes* - PÃ©rez-Barrales, RocÃ³o - FernÃ¡ndez-FernÃ¡ndez, Diana - SchÃ¶nenberger, JÃ¼rg
Bees are inefficient pollinators in cloud forests - investigating pollinator shifts in neotropical Melastomataceae
- 1:45 REP2006 Ohashi, Kazuharu* - JÃ¼rgens, Andreas
Three options are better than two: complementary nature of different pollination modes in *Salix caprea*
- 2:00 REP2007 Perez-Barrales, Rocio* - Sa, Tilio - Matias, Rapahel - Rodrigues, Ebenezer - Consolaro , HÃ©lder - Cardoso de Castro, Cibele
Does pollinator preference and flower traits affect reproduction in co-flowering species?
- 2:15 REP2008 Ayre, Bronwyn* - Krauss, Siegy
Impact of introduced western honeybees on native plants

1:00 PM - 3:00 PM W07 Workshop
 Tips for Success: Applying to Graduate School
Presented by: Anna Monfils

1:30 PM - 2:30 PM Special Lecture Emerging Leader Lecture
 Patterns and People in African Plant Systematics
 Emily Sessa
Introduction by Pam Diggle - Editor *American Journal of Botany*

1:30 PM - 2:30 PM D3 Discussion Session
 National Science Foundation Information Session for
 Early Career Individuals
Chair: Amanda Ingram

1:45 PM - 2:30 PM FT2 Floristics & Taxonomy II
Chair: Harvey Ballard Jr; Justin Williams

- | | | |
|------|--------|---|
| 1:45 | FT2001 | Saryan, Preeti* - Gupta, Shubham - GOWDA, VINITA
Bringing clarity in complexes: A machine learning approach for unsupervised discovery and characterization of clusters using morphological data |
| 2:00 | FT2002 | Ballard Jr, Harvey
Violets (<i>Violaceae</i>) of the Great Plains and eastern North America: An overview, and a new website |
| 2:15 | FT2003 | Murphy, Thomas H.* - Estes, L. Dwayne
Taxonomy of the <i>Clematis reticulata</i> species complex: Enhancing species delimitation with herbarium and common garden datasets |

1:30 PM - 3:00 PM D4 Discussion Session
 The search for legacy tropical forest datasets
Chair: Shelia Ward

**3:00 PM - 5:00 PM BIHD1 Biodiversity Informatics & Herbarium
Digitization I**

Chairs: Katelin Pearson and Brent Mishler

- 3:00 BIHD1001 Valdebenito, Hugo* - Zak, Vlastimil - Riera, Pablo - Escobar, Selene
Herbarium of Economic Botany of Ecuador (QUSF): Historical account, development, representativity, and types
- 3:15 BIHD1002 Horton, Dasha
Herbarium Curation and Conservation Practices: Survey and Analysis of Archival Adhesive Material
- 3:30 BIHD1003 Snyder, Lauren
How digitization of collections at small, local herbaria contributes to plant biodiversity knowledge.
- 3:45 BIHD1004 Enquist, Brian
The commonness of rarity: Global and future distribution of rarity across land plants
- 4:00 BIHD1005 Katzer, Amanda* - Cooper, Kelsey D. - Morelli, Toni Lyn
Biodiversity in the National Parks: How Citizen Science Can Help
- 4:15 BIHD1006 Gutierrez-Gonzalez, Nelly* - Koontz, Jason - Brosius, Tierney - Medina, Rafael
The value of small collections: 12 unaccounted type specimens from the 1893 Rydberg expedition to Nebraska discovered in a liberal arts college
- 4:30 BIHD1007 Knapp, Sandra* - Wilson, Scott - Vincent, Sarah - Hardy, Helen
The changing face of access to natural history collections – the European SYNTHESYS experience
- 4:45 BIHD1008 Vorontsova, Maria* - Lowry, Porter P - Andriambololonera, Sylvie R. - WilmÃ©, Lucienne - Rasolohery, Andriambolantsoa - Humphreys, Aelys,M.
Inequality in plant diversity knowledge and unrecorded plant extinctions:
An example from the grasses of Madagascar

3:00 PM - 5:00 PM		CG2 Contributed Papers
		Functional & Comparative Genetics/Genomics II
Chairs: Alan Yocca and Brittany Sutherland		
3:00	CG2001	Roberts, Wade* - Alverson, Andrew Evidence for a recent whole-genome duplication in a diatom genome
3:15	CG2002	Catalan, Pilar* - Sancho, Ruben - Inda, Luis Angel - Diaz-Perez, Antonio - Des Marais, David - Gordon, Sean - Vogel, John - Contreras-Moreira, Bruno Subgenome-detection algorithms and cross-bracing dating approaches reveal the ancestry of known and 'ghost' homeologous subgenomes in grass <i>Brachypodium</i> allopolyploids
3:30	CG2003	Qiu, Yichun - Adams, Keith* Divergence of duplicated genes by repeated partitioning of splice forms and subcellular localization
3:45	CG2004	Abrahams, Richard* - Pires, Joseph - Schranz, M. Eric The Role of Gene Duplication in the Evolution of the Glucosinolate (Mustard Oil) MAM Locus
4:00	CG2005	McKibben, Michael* - Barker, Michael Candidate Domestication Genes in Multiple Crops are Enriched With Paleologs from Ancient Whole Genome Duplications
4:15	CG2006	Li, Zheng* - Barker, Michael Ancient genome duplication, gene loss, and diploidization of land plants
4:30	CG2007	Shan, Shengchen* - Boatwright, J. Lucas - Liu, Xiaoxian - Chanderbali, Andre - Fu, Chaonan - Soltis, Pamela - Soltis, Douglas Transcriptome dynamics of the inflorescence in reciprocally formed allotetraploid <i>Tragopogon miscellus</i> (Asteraceae)
4:45	CG2008	Huang, Yi* - Morrison , Glen R - Wilson, Sarah - Li, Zheng - Barker, Michael - Litt, Amy Preliminary annotation and analysis of the <i>Arctostaphylos glauca</i> genome

3:00 PM - 5:00 PM	COL07 Colloquium
Phylogenomics and evolution of superrosids	
Chair: Hong Ma	
3:00	Introduction
3:15 COL07002	Sun, Miao* - Folk, Ryan - Gitzendanner, Matt - Smith, Stephen - Chen, Zhiduan - Soltis, Pamela - Soltis, Douglas - Guralnick, Robert Phylogenetic and diversification analyses of rosids
3:30 COL07003	Cai, Liming* - Davis, Charles - Liu, Liang - Xi, Zhenxiang - Rest, Joshua - Lemmon, Emily - Lemmon, Alan - Must, Austin - Buddenhagen, Christopher - Amorim, AndrÃ© - Sugumaran, M Dissecting the genomic evolution of Malpighiales—whole genome duplication, incomplete lineage sorting, and introgression
3:45 COL07004	Kates, Heather* - Folk, Ryan - Guralnick, Robert - Soltis, Pamela - Soltis, Douglas Building and using a massive-scale 13,000 species phylogeny for the nitrogen-fixing clade
4:00 COL07005	Guo, Jing - Xu, Weibin - Hu, Yi - Huang, Jie - Zhao, Yiyong - Zhang, Lin - Huang, Chien-Hsun* - Ma, Hong Phylotranscriptomics in Cucurbitaceae Reveal Multiple Whole Genome Duplications and Key Morphological and Molecular Innovations
4:15 COL07006	Ma, Hong * - Li, Hao - Huang, Chien-Hsun Phylotranscriptomics in Rosaceae and evolutionary implications on fruit type and regulatory genes
4:30 COL07007	Stull, Gregory W.* - Kates, Heather - Tian, Qin - Folk, Ryan - Guralnick, Robert - Soltis, Douglas - Soltis, Pamela - Yi, Tingshuang A deeply sampled phylogenomic tree for Rosaceae, with preliminary insights on chromosome evolution, ancient polyploidy, and diversification patterns across the family
4:45	Discussion

3:00 PM - 3:45 PM CWR1 Crops and Wild Relatives

Chair: Laura Klein

- 3:00 Introduction
- 3:15 CWR1002 Rubin, Matthew* - Bhakta, Niyati - Brand, Leah - Cyr, Maxwell - Frawley, Emma - DeHaan, Lee - Long, Quinn - Schlautman, Brandon - Van Tassel, David - Miller, Allison
Growing the botanical foundation for crop development: characterizing patterns of variation and covariation in herbaceous perennials
- 3:30 CWR1003 Herron, Sterling A* - Rubin, Matthew - Miller, Allison
Lifespan-associated seed and early growth trait patterns in *Lathyrus*, *Phaseolus*, and *Vicia* (Fabaceae)

3:00 PM - 5:00 PM ECO3 Ecology 3: Weeds, Exotic and Invasive Plants, Restoration Ecology, and Research Natural Areas

Chairs: Joshua Miles Mesa and Margaret Devall

- 3:00 ECO3001 Mesa , Joshua Miles* - Dlugosch, Katrina
Invaded Range Yellow Starthistle (*Centaurea solstitialis*) Exhibit Increased Tolerance to Herbivory
- 3:15 ECO3002 Avanesyan, Alina* - Lamp, William
Variation in plant responses to grasshopper herbivory among the cultivars of the introduced *Miscanthus sinensis*
- 3:30 ECO3003 Janssen, Eric* - Zaya, David - Molano-Flores, Brenda
Using Robust Design Models to Assess Colonization and Extirpation Probabilities of Forest Plants in Illinois
- 3:45 ECO3004 Kleiman, Blaire
Weeds, Pollinators, and Parasitoids - Using Weeds for Insect Manipulation in Agriculture
- 4:00 ECO3005 Melen, Miranda* - Lustenhouwer, Nicky - Parker, Ingrid
Eco-evolutionary drivers of native and exotic range expansion in a weedy annual plant, *Dittrichia graveolens* (Asteraceae)

4:15 ECO3006 Winkler, Daniel* - Shackelford, Nancy - Paterno, Gustavo - Svejcar, Lauren - Leger, Elizabeth - Suding, Katharine
Seeding rates and site aridity explain global patterns of dryland restoration success

4:30 ECO3007 Devall, Margaret
A New Research Natural Area Website

3:00 PM - 4:00 PM S11 Kaplan Memorial Lecture
Angiosperm seeds are a mess!
William Friedman

Introduction by: Cynthia Jones

3:00 PM - 5:00 PM W08 Workshop
So you want a job in 2020?: Approaching a changing job market as a postdoc

Chair: Stephanie Conway

4:00 PM - 5:00 PM ASPT Business Meeting

4:00 PM - 5:00 PM CV Reviews

4:00 PM - 5:00 PM Kaplan Reception

5:00 PM - 6:00 PM Exhibit Hall Open

5:00 PM - 6:00 PM Development and Structure Mixer and Business Meeting.

All Society Poster Wednesday Session

5:00 - 6:00

FLORISTICS & TAXONOMY

- PFT001 Jaksich, Sarah - Oppenheimer, Hank - From, Margaret - Kellar, Pamela*
Phylogenetics of Hawaiian *Diplazium* (Athyriaceae: Polypodiales)
- PFT002 Becker, Anna* - Fritsch, Peter - Cellinese, Nico
Evolution of Hawaiian Blueberries (*Vaccinium*)
- PFT003 Kurtz, Cassandra
Investigating the Northern Research Station's Forest Inventory and Analysis Vegetation Data
- PFT004 Groffman, Dominique - Block, Timothy - Skema, Cynthia*
A niche analysis of *Ripariosida hermaphrodita* (Malvaceae), Virginia mallow
- PFT005 Barkworth, Mary* - Gelle, Faisal Jama - Pickering, Helen - Billings, Garrett - Awale, Ahmed Ibrahim
Documenting the biological heritage of the Laas Geel, Somaliland, Rock Art Preserve
- PFT006 Valles, Kristian
A New Flora for Northern Utah
- PFT007 Eduardo Palomino, Fiorella Paola
INSIGHTS OF THE FLORISTIC BIODIVERSITY OF A HIGH ANDEAN PLATEAU GRASSLAND IN SOUTHERN PUNO PERÚ
- PFT008 Esch, Ryan* - Lyon, Stephanie
Flora of Treehaven

FUNCTIONAL GENETICS/GENOMICS

- PCG001 Mosquera, Veronica* - Maughan, Peter - DeTemple, Joseph - Whipple, Clinton
Genetic regulation of anthocyanin biosynthesis in flower color in *Gilia*
- PCG002 Min, Ya* - Ballerini, Evangeline - Edwards, Molly - Hodges, Scott - Kramer, Elena
Understanding Floral Meristem Termination by Exploring Genetic Architecture Underlying Stamen Whorl Numbers in *Aquilegia*

PCG003	Pradhan, Bijaya* - Hunter, Carter - Nelson, Dillon - Nepal, Madhav Genome-wide Identification of WRKY Genes in <i>Amborella trichopoda</i> Bail . (Amborellaceae)
PCG004	DeTemple, Joseph* - Mosquera, Veronica - Whipple, Clinton Floral Trait Differences between <i>Gilia yorkii</i> and <i>G. capitata</i>
PCG005	Dowling, Caroline* - Schilling, Susanne - Shi, Jiaqi - McCabe, Paul - Melzer, Rainer Timing is everything: Towards elucidating the genetic control of flowering time in <i>Cannabis sativa</i>
PCG006	Starr, Dakota* - Bewg, William - Leebens-Mack, Jim - Tsai, CJ Creating white asparagus with CRISPR-Cas9
PCG007	Shi, Jiaqi* - Schilling, Susanne - Dowling, Caroline - McCabe, Paul - Melzer, Rainer The XY files: sex determination in hemp
PCG008	Singh, Baljeet* - Bhardwaj, Vinay - Umesh, Goutam Mining of useful natural variations through SNP based GWAS in crop plants

HYBRIDS AND HYBRIDIZATION

PHH001	Adler, Ava* - Powers, John - Moore, Michael - Sakai, Ann - Weller, Stephen Speciation and Gene Flow in <i>Schiedea</i> (Caryophyllaceae)
PHH002	Quintana, Isadora* - Turchetto, Caroline - Costa Teixeira, Marcelo Geometric morphometric analyses in <i>Nicotiana Alatae</i> section in South Brazil
PHH003	Andreev, Victor* - Straub, Shannon - Fishbein, Mark Asymmetry in gene flow between <i>Asclepias speciosa</i> Torr. and <i>A. syriaca</i> L
PHH004	Jensen, Laynie* - Landis, Jacob - Otto, Garrett - McCarthy, Elizabeth Simulating evolution of flower color in <i>Nicotiana</i>
PHH005	Sánchez, Enmily* - Zweck, Justin - Moreno, Mauro - Peña, Paola - Oleas, Nora Genetic evidence of natural hybridization between <i>Stenomesson aurantiacum</i> and <i>Phaedranassa dubia</i> (Amaryllidaceae)
PHH006	Salony, Susnata* - Ajay, Anjitha - ASHOKAN, AJITH - Saryan, Preeti - GOWDA, VINITA Can genome size and chromosome number help in resolving taxonomic confusions in the genus <i>Hedychium</i> ?

MACROEVOLUTION

- PMC001 Coca, Marina* - Valcarcel, Virginia - Garcia, Nagore
Uncertainty of climatic classification systems: Transitional zones and its influence in evolutionary studies
- PMC002 Lemenager, Marion* - Clark, John L. - Martín-Rodríguez, Silvana - Almarales-Castro, Abel - Joly, Simon
Evolution of converging flower morphologies in Antillean Gesneriaceae associated with multiple pollination syndromes
- PMC003 Simpson, Andrew
Diversification in the Rosales at multiple taxonomic levels influenced by dispersal, geographic range size, and pre-existing species richness
- PMC004 Miladin, Jenna* - Steven, Janet - Collar, David
The relative importance of pollination and climate on floral morphology in the genus *Silene*

PALEOBOTANY

- PPB001 Richmond, Dean* - Lupia, Richard - Philippe, Marc
Protocedroxylon from the marine shales of the Upper Jurassic Knoxville Formation, Tehama County, California
- PPB002 Baghai-Riding, Nina* - Starnes, James - Axsmith, Brian - Hotton, Carol - Hunsucker, Myrtle
Paleoenvironmental and Taphonomic Implications of a Palynological Sample from the Forest Hill Formation
- PPB003 Zou, Xiaoyu* - Wilf, Peter - Donovan, Michael P. - Kocsis, László - Briguglio, Antonino
The First Fossil Leaf Flora from Brunei Darussalam: A Preliminary Report
- PPB004 Huegele, Indah* - Manchester, Steven
The Dakota Sandstone of Kansas was a hotspot for platanaceous diversity during the mid-Cretaceous
- PPB005 Jud, Nathan* - De Benedetti, Facundo - HermSEN, Elizabeth J. - Gandolfo, Maria
Estimating the phylogeny of *Azolla*: a comparison between analysis of morphology and molecular data with and without tip-dating
- PPB006 DeVore, Melanie* - van der Hoek, Yntze - Pigg, Kathleen
Sedges with a tussock-like growth habit from the latest early Eocene Republic flora of the Okanogan Highlands and their bearing on grazing mammal evolution

PPB007	Correa, Julian* - Manchester, Steven Fagales Phylogeny and Morphological Signal
PPB008	Li, Xiangchuan* - Xiao, Liang - Hui, Zhengchuang - Yao, Yunzhi - Ren, Dong - He , Wenlong - Yang, Qiang Diverse fossils from the Miocene of Zeku in the northeastern Tibetan Plateau indicate high historical biodiversity and favorable paleoenvironment

PHYCOLOGY

PPY001	Maglie, Michele* - Marzullo, Angela - Maietti, Annalisa - Baldisserotto , Costanza - Pancaldi, Simonetta Semi-continuous autotrophic and mixotrophic cultivation of <i>Tisochrysis lutea</i> : antioxidant activity evaluation of methanolic extracts by DPPH assay
PPY002	Waldee , Benjamin Joseph* - Lewis, Raymond The effect of salinity on oogenesis and sporophyte production in the brown alga <i>Alaria marginata</i>
PPY003	Pietrasik, Nicole* - Granite, Anthony - Stovall, Megan - Shalygin, Sergei - Johansen, Jeffrey Revealing the cyanobacterial diversity of a wet rock wall at Vernal Falls, Yosemite National Park, CA

PHYLOGENOMICS

PPL001	Dzuric, Jasmina Sex determination, speciation, and reproductive incompatibility in <i>Amaranthus</i>
PPL002	Moreno Aguilar, Maria Fernanda* - Arnelas Seco, Itziar - Sanchez Rodriguez, Aminael - Viruel, Juan - Catalan, Pilar Museomics unveil the phylogeny and biogeography of the neglected Juan Fernandez archipelago <i>Megalachne</i> and <i>Podophorus</i> endemic grasses and their connection with relict Pampean-Ventanian fescues
PPL003	Alonso, Alejandro - Coca, Marina - Monjas, David - Gallego-NarbÃ³n, AngÃ©lica * - FernÃ¡ndez-Mazuecos, Mario - Valcarcel, Virginia Genotyping-by-sequencing reveals the impact of climatic niche on the successful colonization of Madeira by ivies (<i>Hedera</i> L., Araliaceae)
PPL004	Angulo, Juan* - Wickett, Norman - Pokorny, Lisa - Johnson, Matt -

Medina, Rafael - Goffinet, Bernard - Shaw, Jonathan - Liu, Yang
Reconstructing the rapid radiation of pleurocarpous mosses using 802 nuclear genes

- PPL005 SU, CHUN* - Duan, Lei - Chang, Zhaoyang - Wen, Jun
Chloroplast phylogenomics and character evolution of Eastern Asian *Astragalus* (Leguminosae) – tackling the phylogenetic structure of the largest genus of flowering plants in Asia

PHYSIOLOGY

- PPS001 COLPO, ANDREA* - Pancaldi, Simonetta - Ferroni, Lorenzo
Quantification of Photosystem II photoprotection in *Selaginella martensii* Spring (Lycopodiophyta) acclimated to different light regimes
- PPS002 Baird, Alec* - Taylor, Samuel - Pasquet- Kok, Jessica - Vuong, Christine - Zhang, Yu - Watcharamongkol, Teera - Scoffoni, Christine - Edwards, Erika - Christin, Pascal-Antoine - Osborne, Colin - Sack, Lawren
Developmental basis for the worldwide climatic distribution of grass leaf size
- PPS003 Fleurial, Killian* - Zwiazek, Janusz
Got Aquaporins? Understanding responses and tolerance mechanisms of plants exposed to phytotoxic tailings water and hypoxia
- PPS004 Loureiro, Rafael
PRONTO - A standard method to evaluate Physiological Responses Of moon regoliTh crOps

SYMBIOSSES: PLANT, ANIMAL, AND MICROBE INTERACTIONS

- PSM001 Kolter, Andreas* - Gemeinholzer, Birgit
Identifying shifts in foraging behavior of bumblebees in the last decades: Metabarcoding of German natural history collections
- PSM002 Pak, Ji-Hyun* - Aguirre, Luis - Adler, Lynn - Theis, Nina
Leaf damage increases the floral volatiles of common Milkweed *Asclepias syriaca*
- PSM003 Valdes, Imena* - Acevedo, Christian - Hawthrone, Tawny - Finch, Jessamine - Havens, Kayri
When is a native not a native? Preliminary results of pollinator support of native plants and their cultivated varieties in *Penstemon digitalis*

5:00 PM - 6:00 PM W09 Workshop Teaching Online Botany
Laboratory for Non-majors
Chair: Benjamin Montgomery and Kate Farrah7

7:00 - 8:30 PM Diversity, Equity and Inclusion Listening and Discussion
Session -
Chair: Mariama Boney, Achieve More, LLC



**Listening, Learning, and Leading:
Diversity, Equity, and Inclusion in Botany**

Facilitator: Mariama S. Boney, LMSW, CAE

July 29 at 7:00 p.m.



THURSDAY, JULY 30TH

9:00 AM - 10:00 AM Exhibit Hall Open

9:45 AM - 10:00 AM S12 Opening Welcome -
Chair: Unknown

10:00 AM - 12:00 PM BL1 Bryology/Lichenology AJ Sharp Session -
Chair: Scott Schuette

- 10:00 BL1001 Huereca, Alejandro* - Salcedo-Martinez, Sergio M. - Robledo-Leal, Efren - GarcÃa-Sancho, Leopoldo - Etayo, Javier
The Mexican Lichenicolous Fungi: New Taxa, New Records and What is Currently Known
- 10:15 BL1002 INDORF, Marc-FrÃ©dÃ©ric* - ROUTE, Tana - Bergeron, Yves - Fenton, Nicole
Plant species coexistence in Baie-James, QuÃ©bec: a hierarchy of community assembly processes
- 10:30 BL1003 Harrison, Georgia
Impact of Rock Climbing Disturbance on Cliff Vegetation
- 10:45 BL1004 Patel, Nikisha* - Medina, Rafael - Johnson, Matt - Goffinet, Bernard
Autopolyplody contributes to cryptic speciation in mosses
- 11:00 BL1005 Keuler , Rachel A* - Jensen, Jacob - Leavitt, Steve
Hybridization in the diversification processes in the most speciose genus of lichen-forming fungi, *Xanthoparmelia*
- 11:15 BL1006 Piatkowski, Bryan* - Yavitt, Joseph - Turetsky, Merritt - Shaw, Jonathan
Carbon storage and niche preference track phylogeny in *Sphagnum* (peat moss)
- 11:30 BL1007 Whitaker, Katherine* - Budke, Jessica
Exploring Sporophyte Transpiration Rates in Mosses

10:00 AM - 12:00 PM COL03 Colloquium

Enriching basic and applied botany through multi-stakeholder collaborations -

Chair: Caroline Puente-Lelievre

- 10:00COL03SUM Puente-Lelievre, Caroline
Enriching basic and applied botany through multi-stakeholder collaborations
- 10:00COL03001 Masalia, Rishi* - Klein, Laura
Back to Canna-basics: investigating Cannabis label fidelity
- 10:15COL03002 Blackman, Benjamin
Revealing the dynamics of sunflower domestication with archaeological DNA
- 10:30COL03003 Chao , Krystal Shinhuei* - Metzgar, Jordan
Predicting medicinal activity in Chinese magnoliid dicot species using phylogenetic diversity
- 10:45COL03004 Handy, Sara* - Mammel, Mark - Windsor, Amanda - Knolhoff, Ann - Mangrum, Brad - Fong Sam, Jennifer - McFarland, Melinda - Callahan, John - Croley, Timothy
Using Genome Skimming to Diagnose Botanical Contamination in a Ugandan Foodborne Illness Outbreak
- 11:00COL03005 Chapman, Mark
Seedbanks and herbaria for DNA and other data: understanding underutilised crops for food security
- 11:15COL03006 Schori, Melanie* - Leon, Blanca - Kittell, Karen
Crop Wild Relative data in the Germplasm Resources Information Network
- 11:30COL03007 Ott, Brittany* - Hunter, Elizabeth - Kirk, Riley - Little, Damon - Bertin, Matthew - Literman, Robert - Sarmashghi, Shababeddin - Erickson, David - Bafna, Vineet - Wen, Jun - Handy, Sara
The interface between Government, Academia and Industry: leveraging basic research for applied questions
- 11:45COL03008 Finch, Kristen* - Cronn, Rich - Jones, Andy - Lancaster, Cady - Lebow, Beth
Combatting Illegal Logging via Global Collaboration and Innovation in Wood Identification Technologies

10:00 AM - 12:00 PM ECO4 Ecology 4: Vegetation and Community Ecology

Chair: Cynthia Huebner; Zachary Reed

- 10:00 ECO4001 Huebner, Cynthia* - Thomas Van-Gundy, Melissa - Underwood, Christopher
Comparison of Seedbank Composition over a Gradient of Pyrophilic Vegetation
- 10:15 ECO4002 Szakacs, Alexandria* - Wentworth, Thomas - Krings, Alexander
In Search of the “Piedmont prairies”: Multivariate Analyses of Heliophilic Plant Communities of the Eastern Piedmont of North America
- 10:30 ECO4003 Titus, Jonathan* - Gjeta, Ermelinda - Titus, Priscilla
Plant species occupy different habitats on castle walls in Elbasan, Albania
- 10:45 ECO4004 Trang, Kenneth* - Wilson, Carol
Ecological niche modeling of Australian Loranthaceae mistletoes using a novel haustorial perspective
- 11:00 ECO4005 Kwon, Youl* - Melton, Anthony - Soltis, Pamela - Soltis, Douglas
Ecological Niche Models for species of the genus *Rhexia* (Melastomataceae)
- 11:15 ECO4006 Dungey, Michael* - Eckert, Christopher
A broad-scale test of whether constraints on dispersal contribute to the northern range limit of a Pacific coastal dune plant
- 11:30 ECO4007 Reed, Zachary* - Bridges, Edwin - Orzell, Steve - Budach, Brett
Local-scale niche modeling of *Stenanthium densum* (Melanthiaceae), a fire-stimulated flowering plant endemic to the southeastern Coastal Plain

10:00 AM - 11:15 AM EO2 Education and Outreach I:

Outreach & Pedagogy -

Chairs: Benjamin Montgomery; Kyra Krakos; Rebecca Humphrey

- 10:00 EO2001 Lujan, Manuel* - Warner, Kellan - Nagalingum, Nathalie
How San Francisco highschool students are using drones and herbarium collections to uncover Australian Cycads diversity
- 10:15 EO2002 Nepal, Madhav* - Browning, Larry - Miller, Matthew - Vestal, Sharon - White , P. Troy
Teaching Modules for 7-12 Science/Agriculture Educators through I-LEARN Professional Development Workshop
- 10:30 EO2003 Emry, David* - Mercader, Rodrigo - Reed, Benjamin
Using writing assignments to help students frozen by the fear of criticism and rejection

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- A systematic vademecum to the vascular plants of Saba*
- Guide to the vascular flora of Buxton Woods Coastal Reserve (Dare County, North Carolina, U.S.A.)*
- Lichen field guide for Oklahoma and surrounding states*
- Putting down roots: Foundations of botany at Carolina, 1792-1902*
- The Letters of Mary Strong Clemens 1873-1968: A Botanical Collector's Mountaintop Life of Blissful Hardship*

10:45 EO2004	Sinha, Aditi Using Mystery to Encourage Active Learning
11:00 EO2005	Smith , Mark R Imaging Systems and Workflows for Digitizing Pinned, Wet and Slide Mounted Specimens

10:00 AM - 2:15 PM EVDV1 Evolutionary Developmental Biology (Evo-Devo) -

Chair: Clinton Whipple; Heather Phillips

10:00EVDV1001	Whipple, Clinton* - Maughan, Peter - Jarvis, David - Mosquera, Veronica - DeTemple, Joseph Developing Genomic and Genetic Resources for a Novel Evo-Devo Model in <i>Gilia</i> (Polemoniaceae)
10:15EVDV1002	Sinnott-Armstrong, Miranda* - Middleton, Rox - Ogawa, Yu - Moyroud, Edwige - Prum, Richard - Glover, Beverley - Rudall, Paula - Vignolini, Silvia - Donoghue, Michael Structural color, cell walls, and the evolution of <i>Viburnum</i> fruits
10:30EVDV1003	Lee, Aaron* - Bhatti, Maryum - Rahman-Vyas, Hiba - Howarth, Dianella - Donoghue, Michael - Clement, Wendy Honeysuckle (<i>Lonicera</i> , Caprifoliaceae, Dipsacales) NAC subfamily Ia evolution and implications for the evolution of organ fusion
10:45EVDV1004	Phillips, Heather* - Landis, Jacob - Specht, Chelsea To Fuse or not to Fuse: Investigating the Evolution and Development of Floral Fusion in the Zingiberales
11:00EVDV1005	Min, Ya* - Kramer, Elena I do not need a superman when I have a superwoman
11:15EVDV1006	Majumder, Sambadi Effects of whole genome duplication on terpenoid biosynthesis in wild sunflowers
11:30EVDV1007	Williams, Joseph Evidence for lower and upper limits on pollen size evolution after autopolyploidy

11:45	Break
12:00	Break
12:30	EVDV1010 Appleton, Andrea* - Schenk, John Patterns of Staminode Evolution in <i>Paronychia</i> (Caryophyllaceae)
12:45	EVDV1011 Sengupta, Aniket* - Hileman, Lena A CYC-RAD interaction pre-dates the origin of Lamiales zygomorphy
1:00	EVDV1012 Bukhari, Ghadeer* - Zhang, Jingbo - Stevens, Peter - Zhang, Wenheng Floral symmetry and the evolution of floral characters in angiosperms
1:15	EVDV1013 Guan, Clarice* - Landis, Jacob - Valderrama, Eugenio - Skinner, David - Phillips, Heather - Specht, Chelsea Pieces of the Puzzle: Investigations of Spiromonostichy in the Spiral Gingers (<i>Costus</i> , Costaceae)
1:30	EVDV1014 Patterson, Erin* - Heeney, Michelle - Gallagher, Joseph - O'Connor, Devin - Cartwright, Amy - Bartlett, Madelaine The evolution and development of awns in the grass subfamily Pooideae
1:45	EVDV1015 Li, Xiang* - Caicedo, Ana Understand One Repeatedly Appeared Trait in Our Enemy: High Seed Shattering in Weedy Rice (<i>Oryza</i> spp.)
2:00	EVDV1016 Kostyun, Jamie* - Zhang, Thompson - Patterson, Erin - Whipple, Clinton - Bartlett, Madelaine The pleiotropic developmental mutant <i>tasselshealth3</i> encodes an essential mRNA processing factor

10:00 AM - 11:30 AM MACRO2

Chair: Jeff Rose

Macroevolution II

- 10:00 MACRO2001 Muir, Christopher
Independent evolution of ab-and adaxial stomatal density enables adaptation
- 10:15 MACRO2002 Zenil-Ferguson, Rosana - Di Stilio, Veronica*
Phylogenetic patterns of trait evolution in *Thalictrum*: the role of integration, timing and interdependence in lineage diversification
- 10:30 MACRO2003 Kandziora, Martha* - Gehrke, Berit - Popp, Magnus - Gizaw Seid, Abel - Brochmann, Christian - Pirie, Michael D.
Immigrants prevail: lessons from dating the Afroalpine flora
- 10:45 MACRO2004 Nge , Francis Jason
Diversification dynamics of the temperate Australian flora, maintenance of species diversity and radiations

11:00MACRO2005 Lemenager, Marion* - Clark, John L. - Martín-Rodríguez, Silvana - Almarales-Castro, Abel - Joly, Simon
Evolution and intraspecific variation of corolla morphologies in association with pollination strategies

11:15MACRO2006 Larcombe , Matthew James* - Jordan, Gregory - Higgins, Steven, I
Paleoendemics and the extinction conundrum: past performance is not a good predictor of future performance

10:00 AM - 12:00 PM REP3 Reproductive Processes 3

Chair: Adriana Aranda-Rickert; Jannice Friedman; Yuval Sapir

- 10:00 REP3001 Friedman, Jannice* - Leydet, Karine
Do plants pick their partners post-pollination: Investigating mate preferences and non-random mating in the monkeyflower *Mimulus guttatus*
- 10:15 REP3002 Castro, Mariana - Husband, Brian - Loureiro, Joao - Castro, S'lvia*
The role of multiple reproductive barriers: Strong post-pollination interactions govern cytotype isolation in the tetraploid-octoploid *Gladiolus communis* contact zone
- 10:30 REP3003 De Lima Berg , Karla* - Schwoch, Jaime - Cruzan, Mitchell
Gametophytic selection and selective embryo abortion in *Mimulus guttatus*
- 10:45 REP3004 Singh-Cundy, Anu
Sequence variation in histidine-domain arabinogalactan proteins (HD-AGPs) generates interspecific prezygotic mating barriers among the core eudicots
- 11:00 REP3005 Nishida, Sachiko* - Hashimoto, Yusuke - Yamamoto, Akane - Kanaoka, Masahiro - Naiki, Akiyo - Takakura, Ko-Ichi
Pollen-pistil interactions in reproductive interference
- 11:15 REP3006 Sapir, Yuval* - Gallagher, Megan
What maintains flower colour variation within populations?
- 11:30 REP3007 Aranda-Rickert, Adriana* - Brizuela, Maria Magdalena - Torróns, Javier - Di Stilio, Veronica
Reproductive biology of South American *Ephedra*



10:15 AM - 2:00 PM SY4 Symposium

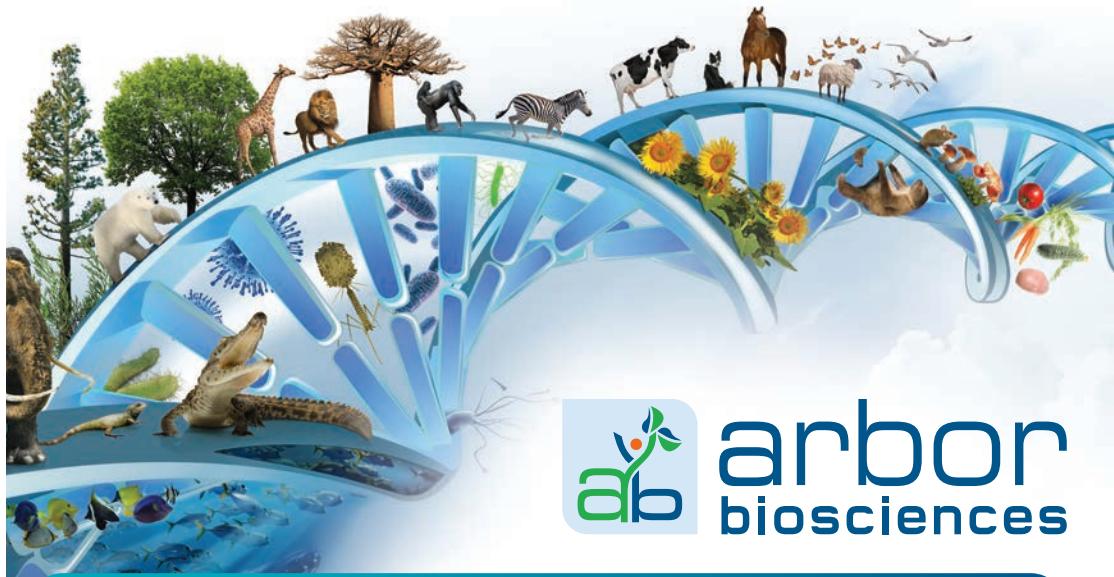
Angiosperms353: A new essential tool for plant systematics

Chairs: Rachel Jabaily and Laura Lagomarsino

Sponsored by Arbor Biosciences

10:15 SY4SUM	Lagomarsino, Laura* - Jabaily, Rachel Angiosperms353: A new essential tool for plant systematics
10:15	Presentation
10:30 SY4002	Baker, William J. Completing the Flowering Plant Tree of Life with Angiosperms353
11:00 SY4003	Pokorny, Lisa* - Johnson, Matthew - Dodsworth, Steven - Maurin, Olivier - Epitawalage, Niroshini - Bellot, Sidonie - BotiguÃ©, Laura R. - Brewer, Grace E. - Chase, Mark - Cowan, Robyn S. - Eiserhardt, Wolf L. - de la Estrella, Manuel - Hidalgo, Oriane - Kersey, Paul J. - Kim, Jan T. - Larridon, Isabel - McDonnell, Angela - Murphy, Bruce - Pellicer, Jaume - de Vos, Jurriaan - Wickett, Norman - Leitch, Ilia - Forest, FÃ©lix - Baker, William J. A phylogenomic approach to decode contentious relationships across flowering plants
11:30 SY4004	Frost, Laura* - Santamaria, Daniel - Lagomarsino, Laura Cabinet to table: an artisanal approach to get the most out of Angiosperm-353 data from herbarium specimens
12:00	Break
12:30 SY4006	Aguirre Santoro, Julian* - Zuluaga Trochez, Alejandro - Stonesmyth, Emma - Betancur, Julio - Jabaily, Rachel Phylogenomics of <i>Puya</i> (Bromeliaceae): evolution in the dry valleys and high-elevation ecosystems of the Andes
1:00 SY4007	McDonnell, Angela* - Martine, Christopher Phylogenomics and Breeding System Evolution of Australian Solanum ("S. dioicum group", Solanaceae)
1:30 SY4008	Johnson, Matthew On the potential of Angiosperms353 for population genomics

Studying angiosperm evolution and phylogenetics?

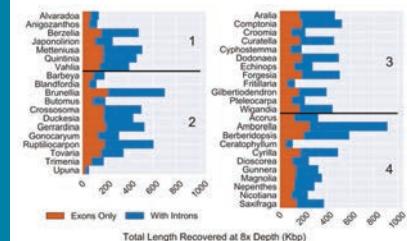


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Angiosperms-353

Targeted NGS Panel for All Flowering Plants

- Includes 353 putatively single copy loci that are orthologous across all angiosperms
- Use for phylogenetic studies on any taxonomic level, even species



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11:00 AM - 12:00 PM ECOPH1 Ecophysiology I
Chair: Anna Jacobsen; Frank Ewers

- 11:00ECOPH1001 Gonzalez, Jose Vicente - Ely, Francisca* - Rada, Fermin
Anatomical and photosynthetic plasticity in juvenile and adult leaves of *Chusquea mollis* L. G. Clark (Magnifoliae, Chusqueinae, Bambusae)
- 11:15ECOPH1002 Thonglim, Ajaree* - Delzon, Sylvain - Larter, Maximilian - Karimi, Omid - rahimi, Arezoo - Offringa, Remko - Keurentjes, Joost J. B. - Balazadeh, Salma - Smets, Erik - Lens, Frederic
Intervessel pit membrane thickness functionally explains best the differences in embolism formation in stems amongst *Arabidopsis thaliana* accessions
- 11:30ECOPH1003 Ongjoco, Anna Jiselle* - Bobich, Edward - Ewers, Frank - Questad, Erin
Strategies Utilized by *Pinus coulteri* and *Pinus attenuata* for Surviving at Low Elevations in the San Bernardino Mountains
- 11:45ECOPH1004 Mozzi, Giacomo* - Hultine, Kevin - Crivellaro, Alan
Leaf traits in succulent and non-succulent plants show both similar constraints and divergent strategies in water storage and resources use

12:00 PM - 1:00 PM Exhibit Hall Open

12:00 PM - 12:30 PM W10 Workshop
Drawing with Alice Tangerini
Chair: Alice Tangerini

12:00 PM - 1:00 PM W11 Workshop
A Digital Flora of North America for a Digital Age An Interactive Session with the Flora of North America
Chair: Jocelyn Pender

12:30 PM - 2:15 PM BIHD2 Biodiversity Informatics & Herbarium Digitization II

Chairs: Katelyn Pearson and Brent Mishler

- 12:30BIHD2001 MILLER, JOSEPH* - Bruneau , Anne - Pennington, Toby - de la Estrella, Manuel - Lehmann , Caroline - Egan, Ashley N. - Klitgaard , Bente - Neves, Danilo - Cardoso, Domingos - Gagnon, Edeline - Koenen, Erik - James, Euan - Forest, FÃ©lix - Pezzini, Flavia - Lewis, Gwil - Ringelberg, Jens - Maurici Borges , Leonardo - Queiroz , Luciano - Telford , Elizabeth - Schley , Rowan - Cardinal-McTeague, Warren - Vatanparast , Mohammad - Onstein , Renske - Ojeda Alayon , Dario - VelÃ¡squez , Francisco - dexter, kyle - Choo , Le Min - Wieringa , Jan - Hughes , Colin - Sinou , Carole - Terra, Vanessa
Towards a legume biodiversity portal
- 12:45BIHD2002 Barkworth, Mary - Dyreson, Curtis* - Brandt, Ben - Pearse, Will - Cobb, Neil
Symbiota2: Developer's release
- 1:00 BIHD2003 MILLER, JOSEPH
Data quality initiatives at GBIF
- 1:15 BIHD2004 King, Megan* - Struwe, Lena
How Collections-based Undergraduate Research Adapted to a Pandemic: A Case Study of the Herbarium Army at Rutgers University
- 1:30 BIHD2005 Rabeler, Richard* - Macklin, James - Pender, Jocelyn - Shorthouse, David
Digitization of US Herbaria - how close did we get to the 2020 goal?
- 1:45 BIHD2006 Yost, Jenn* - Pearson, Katie - Alexander, Jason - Love, Natalie - Mazer, Susan - Mishler, Brent
Capturing flowering time data from herbarium specimens: The California Phenology TCN

12:30 PM - 2:00 PM BL2 Bryology/Lichenology Combined II

Chair: Scott Schuette

- 12:30 BL2001 Johnson, LMK
Trace Metal Accumulation in Lichen in Three Habitats at Powdermill Nature Reserve
- 12:45 BL2002 Scharnagl, Klara
Patterns of epiphytic lichen diversity from tropical rainforests to the boreal

12:30 PM - 2:30 PM ECO5 Ecology 5: Plant and Community Response to the Environment and Stressors
Chair: Sarah Yakimowski and Brenda Molano-Flores

- 12:30 ECO5001 Molano-Flores, Brenda* - Johnson, Sara - Janssen, Eric - Glass, Nicholas T - Whelan, Christopher J
Could road salt explain the decline of *Thuja occidentalis* in urban fens?
- 12:45 ECO5002 Aiello, Erin* - Parker, Ingrid - Haubensak, Karen - Grove, Sara
Combined stressors of drought and invasion reduce Douglas fir performance
- 1:00 ECO5003 Mohl, Emily* - McCall, Andrew - Scanga, Sara - Saunders, Patricia - Garneau, Danielle - Nuzzo, Jacqueline
Geographic variation in growth and compensation in common milkweed, *Asclepias syriaca*
- 1:15 ECO5004 Vera, Roy* - Cota-Sanchez, Hugo - Grijalva, Jorge
Tree beta diversity explains changes in soil properties in cocoa agroecosystems in conjunction with shifting agriculture
- 1:30 ECO5005 Iriart, Veronica* - Baucom, Regina - Ashman, Tia-Lynn
Herbicide drift reveals species-level variation in stressor resistance and weakens co-flowering interactions in 25 wild plant species
- 1:45 ECO5006 Yakimowski, Sarah* - Ferrish, Justin - Samis, Karen
On the evolution of salt tolerance: divergence in fitness and physiology phenotypes between freshwater and marine populations of *Cakile edentula*

12:30 PM - 2:15 PM SYS4 Systematics IV: Monocots part B to Rosids part A
Chairs: Nancy Morin and Morgan Gostel

- 12:30 SYS4001 Ely, Francisca* - Gonzalez, Jose Vicente
Flowering cycle of *Chusquea mollis* L.G. Clark (Magnolioideae, Chusqueinae, Bambusoideae) in the Venezuelan Andes
- 12:45 SYS4002 Larridon, Isabel* - Zuntini, Alexandre R. - Barrett, Russell - Wilson, Karen - Bruhl, Jeremy J. - Goetghebeur, Paul - Baker, William J. - Brewer, Grace E. - Epitawalage, Niroshini - Fairlie, Isabel - Forest, FÃ©lix - Kikuchi, Izai - Pokorny, Lisa - Semmouri, Ilias - Spalink, Daniel - Simpson, David A. - Muasya, A. Muthama - Roalson, Eric
Resolving generic limits in Cyperaceae tribe Abildgaardieae using targeted sequencing

- 1:00 SYS4003 Stonesmyth, Emma* - Aguirre Santoro, Julian - Zuluaga Trochez, Alejandro - Jabaily, Rachel
Revisiting the Chilean Puya (Bromeliaceae) hypothesis using a phylogenomic approach with the Angiosperm 353 probe set
- 1:15 SYS4004 Welker, Cassiano - McKain, Michael - Kellogg, Elizabeth A.*
Plastome phylogenomics of Andropogoneae, a new classification, and biogeography of the tribe
- 1:30 SYS4005 ASHOKAN, AJITH* - GOWDA, VINITA
Phylogenetic systematics, historical biogeography and character evolution in the taxonomically complex genus *Hedychium* J.Koenig (Zingiberaceae)
- 1:45 SYS4006 Koenemann, Daniel
Speciation in the New World Tropics: Species Boundaries in the Plant Genus *Triplaris* (Polygonaceae)
- 2:00 SYS4007 Bedoya , Ana Maria* - Olmstead, Richard
Andean uplift, drainage basin formation, and the evolution of riverweeds (Podostemaceae)

1:00 PM - 2:30 PM ECOPH2 Ecophysiology II

Chair: Anna Jacobsen; Frank Ewers

- 1:00ECOPH2001 Waring, Elizabeth* - Perkowski, Evan - Smith, Nicholas
Nitrogen acquisition strategy and photosynthetic demand drive allocation responses in cotton and soybean
- 1:15ECOPH2002 Neufeld, Howard* - Perkins, Fern
Host Tree Species is an Important Determinant of Corticolous Lichen Responses to Elevated CO₂ and O₃ after 10 Years Exposure in the ASPEN-FACE
- 1:30ECOPH2003 Ekwealor, Jenna* - Clark, Theresa - Dautermann, Oliver - Russel, Alexander - Ebrahimi, Sotodeh - Stark, Llo - Niyogi, Krishna - Mishler, Brent
The photosynthetic effects of Mojave Desert sun on *Syntrichia caninervis*
- 1:45ECOPH2004 Ashlock, Sarah
Contributions of ecophysiological divergence to Neotropical plant diversity
- 2:00ECOPH2005 Nolting, Kristen* - Holsinger, Kent
The consequence of intraspecific trait variation and co-variation for plant performance in the South African shrub genus, *Protea* (Proteaceae)

1:00 PM - 3:00 PM W12 Workshop

Multi-dimensional instruction in Botany using the Four-Dimensional Ecology Education (4DEE) Framework: How to transform lessons

Chair: Luanna Prevost

3:00 PM - 5:15 PM COL06 Colloquium

Mechanisms of rapid adaptation through the expression of “heterogenomicity”

Chair: Margaret Frank and Michael McKain

- 3:00 COL06SUM Frank, Margaret* - McKain, Michael
Expressions of heterogenomicity across scales
- 3:15 COL06002 Li, Fay-Wei
The “symbionics” of hornwort-cyanobacteria interaction: from community assembly, genomic diversity, to genetic regulation
- 3:45 COL06003 Harris, Zachary* - Klein, Laura - Migicovsky, Zoe - Chitwood, Dan - Fennell, Anne - Ma, Qin - Kovacs, Laszlo - Kwasniewski, Misha - Londo, Jason - Miller, Allison
Rootstock effects on shoot system phenotypes in a hybrid grape vineyard
- 4:00 COL06004 Alger , Elizabeth I
Transposable elements shape the transcriptional landscape in woodland strawberry
- 4:15 COL06005 Notaguchi, Michitaka
Study on mechanism of hetero grafting
- 4:30 Discussion

3:00 PM - 4:45 PM ECOPH3 Ecophysiology III

Chair: Anna Jacobsen; Frank Ewers

- 3:00ECOPH3001 Ewers, Frank* - Lopez-Portillo, Jorge - Angeles, Pedro G. - Mendez-Alonzo, Rodrigo
Leaf indument and water in mangrove trees – is it a love-hate relationship?
- 3:15ECOPH3002 Baniaga, Anthony* - Spriggs, Elizabeth - Edwards, Erika - Donoghue, Michael
Polyploidy underlies morphological and ecological diversity in the taxonomically difficult *Viburnum dentatum* species complex of eastern North America

- 3:30ECOPH3003 Avila-Lovera, Eleinis* - Ashlock, Sarah - Vargas, Oscar M - Funk, Jennifer - Kay, Kathleen M - Goldsmith, Gregory R
Plasticity, not genetic differentiation, drives trait-environment relationships in Neotropical understory herbs
- 3:45ECOPH3004 Gul, Bilquees
An Innovative Perspective on Food Security: Halophyte crops for the future
- 4:00ECOPH3005 Ransone, Katherine* - Steven, Janet
Drought stress reduces biomass and alters tissue water content in *Silene latifolia*
- 4:15ECOPH3006 Dowell, Jordan* - Mason, Chase
Correlation in plant volatile metabolites: physiochemical properties as a proxy for enzymatic pathways and an alternative metric of biosynthetic constraint
- 4:30ECOPH3007 Rosli, Roshanizah* - Metali, Faizah - Musselman, Lytton - Tennakoon, Kushan
The impact of hemiparasite *Cassytha* on native and introduced host species

3:00 PM - 5:00 PM EO3 Education and Outreach III: Diversity & Inclusion in Botany

Chair: Kyra Krakos; Benjamin Montgomery

- 3:00 EO3001 Thorhaug, Anitra* - Gilmour, John - Ramphele, Mamphela - Hughes, Barry - Schwarz, Arthur
Holistic education of secondary Science and Math for “At Risk” South African youth.
- 3:15 EO3002 Whitcomb, Sean
Undergraduate students can perform authentic botanical field research without leaving the campus
- 3:30 EO3003 Ahedor, Adjoa
Individual undergraduate research (IUR), a strategy for promoting botany with remarkable broader impacts in 2-year colleges
- 3:45 EO3004 Callahan, Hilary* - Meek, Jared - Dolt, Caroline - Asif, Aneaze
Digital Botanical Diversity: Infusion, Inclusion, and the Liberal Arts
- 4:00 Discussion

3:00 PM - 5:00 PM POPGEN2 Population Genetics/Genomics II -
Chair: Jeremy Coate

- 3:00POPGEN2001 Hernandez, Adriana* - Landis, Jacob - Specht, Chelsea
The Population Dynamics and Evolutionary History of the Highly Polymorphic *Calochortus venustus* (Liliaceae)
- 3:15POPGEN2002 Jones, Maia* - Nagalingum, Nathalie - Liu, Jian
RAD Sequencing Approach to Population Genomic Assessment of *Cycas candida* (Cycadaceae)
- 3:30POPGEN2003 Bard, Nicholas* - Miller, Christopher S - Bruederle, Leo Paul
Conservation genomics of *Carex scirpoidea* subsp. *convoluta*
- 3:45POPGEN2004 Barrett, Craig* - Sinn, Brandon - Simon, Sandra - Difazio, Stephen -
Santee , Mathilda Viola - Fama, Nicole
Flexible, economical methods for genome-scale variant discovery using ISSR sequencing
- 4:00POPGEN2005 Williams, Tanisha* - Antoine, Ariel - McDonnell, Angela - Cantley, Jason -
Jobson, Peter - Martine, Christopher
Population genomics and the influence of biogeographic barriers in *Templetonia hookeri* (Fabaceae), an endemic legume of the Australian Monsoon Tropics

3:00 PM - 5:00 PM REP4 Reproductive Processes 4 -
Chairs: Johanne Brunet and Rebecca Humphrey

- 3:00 REP4001 Brunet, Johanne* - Flick, Andrew - Bauer, Austin
Phenotypic selection on flower color and floral display size by three bee species
- 3:15 REP4002 Nunes, Carlos E. P.* - Nevard, Lucy - Montealegre-Zapata, Fernando -
Vallejo-MarÃn, Mario
Are flowers tuned at the frequency of pollinators? Stamen resonance and bee buzzing frequencies in *Solanum* with contrasting floral morphologies
- 3:30 REP4003 Ostrowski, Susanna* - Spigler, Rachel
Plasticity of floral longevity in *Sabatia angularis* (Gentianaceae): tracking the optimum under different pollination rates
- 3:45 REP4004 Moreira Hernandez, Juan* - Terzich, Nicholas - Zambrano-Cevallos, Ricardo - Oleas, Nora - Muchhal, Nathan
Differential tolerance to increasing heterospecific pollen deposition in two sympatric species of *Burmeistera* H. Karst. & Triana (Campanulaceae: Lobelioideae)

- 4:00 REP4005 Humphrey, Rebecca* - Graham, Spencer
Relationship between pollen aperture number, germination rate, and pollen-tube growth in the pollen-heteromorphic *Thalictrum thalictroides* (Ranunculaceae)
- 4:15 REP4006 Valverde, Javier* - Perfectti, Francisco - Gómez, José María
Pollination effectiveness in a generalist plant: adding the genetic component
- 4:30 REP4007 Muchhalo, Nathan* - Moreira Hernandez, Juan - Zuluaga Trochez, Alejandro
The Long Stems Characteristic of Bat-Pollinated Flowers Greatly Reduce Bat Search Times while Foraging

3:00 PM - 4:00 PM S14 ASPT Incoming President Address

Herbaria: Collectively Saving Plant and
Fungal Biodiversity
Barbara Thiers

Introduced by Pam Soltis

4:00 PM - 5:00 PM ASPT Awards Ceremony

5:00 PM - 6:00 PM Exhibit Hall Open

5:00 PM - 6:00 PM Paleobotanical Section Business Meeting

All Society Poster Session

5:00 - 6:00

POPULATION GENETICS/GENOMICS

- 5:00 PPG001 Rosati , Ethan M
Undergraduate Student Research Conducting Barcoding and Comparison of DNA Extractions of ITS Region Between Angiosperm and Gymnosperm Herbarium Specimens

5:00	PPG002	Hayes, Jonathan* - Williams, Tanisha - Goad, Rachel - Martine, Christopher Genetic diversity & connectivity of <i>Chasmanthium latifolium</i> (Poaceae) in Pennsylvania & the effect on conservation status
5:00	PPG003	Krupar, Shelby Genetic Diversity and Spatial Genetic Structure of <i>Guzmania monostachia</i> (Bromeliaceae) in Florida
5:00	PPG004	Villalobos-Barrantes, Heidy M* - Vergara-Meriñó, Beatriz - Guerrero, Pablo C. Molecular systematics and genetic diversity in the <i>Eriosyce curvispina</i> complex (Cactaceae)
5:00	PPG005	Pelosi, Jessie* - Krieg, Christopher - Adelhelm, David - Jarnagin, Kerianne - Zeller, Zachary - Sessa, Emily Population structure and dynamic fluctuations of effective population size in a polyploid fern complex
5:00	PPG006	Thompson, Hana* - Eckert, Christopher Investigating whether asexuality facilitates range expansion using transcriptome analysis with a clonal wetland plant
5:00	PPG007	Lee, Soo-Rang* - Ha, Young-Ho - Oh, Seung-Hwan Risk of genetic swamping in the progenitor of the domesticated apple (<i>Malus sieversii</i>) from the diversity hotspot, Tien Shan, Kazakhstan
5:00	PPG008	Tamrakar, Rubin* - Bailey, C. Donovan - Lehnhoff, Erik - Sahd, Kyle An Assessment of Genetic Variation Associated with Differential Response to Fire Among Populations of Cheatgrass (Poaceae, <i>Bromus tectorum</i>)
5:00	PPG009	Steele, Stephanie* - Ryder, Oliver - Maschinski, Joyce RNA-Seq as a tool to assess adaptive genetic variation and evolutionary potential for bark beetle response in the rare Torrey pine

REPRODUCTIVE PROCESSES

5:00	PRP001	Eberl, Emma* - Friedman, Jannice Post-pollination processes in a dioecious wind-pollinated plant
5:00	PRP002	Mesic, Matea* - Schlessman, Mark Fruit maturation, cross pollination, and water stress promote male flower production in andromonoecious <i>Polarisia dodecandra</i> subsp. <i>riograndensis</i> (Cleomaceae)
5:00	PRP003	Van Etten, Megan Using <i>Brassica rapa</i> to quickly assess pollinator quantity and quality

- 5:00 PRP004 Pereira-Silva, Brenda * - De Paula, Livia Maria - Carvalho-Leite, Ludimila Juliele - Martins-Morais, Paulo Wesley - Machado-Santos, Pedro Henrique - Paulino-Neto , Hipólito Ferreira
Floral and reproductive biology of *Luehea grandiflora* (Malvaceae) in a Brazilian Savanna
- 5:00 PRP005 Souza , Marcela Faria* - Santos, Pedro Henrique Machado - Silva, Brenda Pereira - De Paula, Livia Maria - Carreño, Javier Isnardo - Paulino-Neto , Hipólito Ferreira
Reproductive phenology, floral morphology and floral visitors of *Attalea geraensis*, a neotropical palm in a fragment of Brazilian Cerrado
- 5:00 PRP006 Rodriguez, Rosa* - Wolfe, Andi - Kubatko, Laura
Anther morphology and abiotic factors affect pollen presentation
- 5:00 PRP007 Schlessman, Mark* - Lee, Kevin - Perkins, Carrie - Harrington, Margaret
Fruit set, mineral nutrition, and herbivory, but not mating, affect male flower production in andromonoecious *Polanisia dodecandra* subsp. *trachysperma*
- 5:00 PRP008 CARVALHO-LEITE , LUDIMILA JULIELE * - DÁOLIA-MAIA , ARTUR CAMPOS - Paulino-Neto , Hipólito Ferreira
Chemical ecology and reproductive biology of *Annona cornifolia* (Annonaceae) in a Brazilian Savanna
- 5:00 PRP009 Haberkorn, Matt
Plant Clones of the Northern Sonoran Desert: Abundance, Relative Cover, and Adaptations
- 5:00 PRP010 Nicole Incarnato , Miyauna Monique* - Pearson, Avery - Stevens, Mia - Johnson, Ren - Zelman, Ezekiel - Jackson, Evan - Ison, Jennifer
How do solitary bee taxa vary in their contribution to the male fitness of a mate-limited prairie perennial, *Echinacea angustifolia*?

SYSTEMATICS

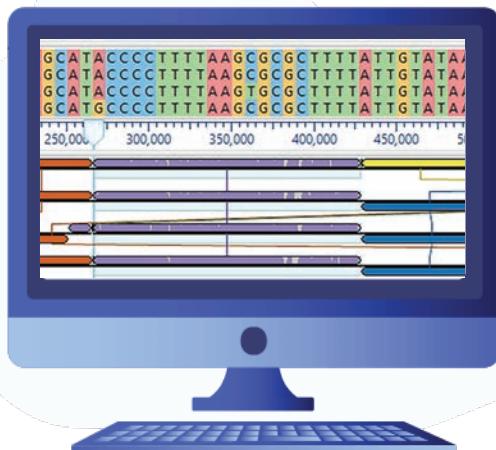
- 5:00 PSY001 Par, Esther* - Roy, Tilottama
Investigating evolutionary relationships within the tribes Pogostemoneae and Gomphostemmataeae (Subfamily:Lamioideae; Family:Lamiaceae)
- 5:00 PSY002 Santee , Mathilda Viola* - Barrett, Craig
Integrative species delimitation in Californian striped coralroot orchids
- 5:00 PSY003 Tippery, Nicholas* - Benoit, Lori - Les, Donald - Bugbee, Gregory - Stebbins, Summer
Global genetic diversity in hydrilla (*Hydrilla verticillata*) and evidence for a novel invasive strain in North America

- 5:00 PSY004 Huang, Wu* - Hollingsworth, Peter - Twyford, Alex
Using Nuclear genome to tell plant species apart
- 5:00 PSY005 Boss, Shawn* - Chang, Tien-Hao - Bashaw, Benjamin - Lamey, Lyndsay - Roy, Tilottama
Phylogeny and Biogeography of the Temperate North American False Foxgloves (*Agalinis* sp.; Family: Orobanchaceae)
- 5:00 PSY006 McGarvey, Luisa * - Jiao, Lynn - Douglas, Norman - Flores, Hilda - Ochoterena, Helga - Moore, Michael
Exploring species boundaries of *Thelesperma* (Asteraceae) on gypsum using phylogenetic and morphometric analysis
- 5:00 PSY007 Gerrits, Julie* - Tyrrell, Christopher
Morphological analysis of *Arthrostylidium pubescens* (Poaceae: Bambusoideae: Bambuseae: Arthrostylidiinae) for species delineation
- 5:00 PSY008 Castillo, Gabriela* - Sarazen, Jill - Moore, Michael
Using Molecular Phylogenetics to Uncover Cryptic Species Within *Tiquilia palmeri*
- 5:00 PSY009 Humphreys, Emily* - Edwards, Caroline - Last, Noah - Olivieri, Julia - Brunner, Anna - Mikenas, Jessica - Henzler-Lhasawa, Chamden - Douglas, Norman - Flores, Hilda - Ochoterena, Helga - Hernandez Ledezma, Patricia - Nosratinia, Sonia - LoPresti, Eric - Weber, Marjorie - Thulin, Mats - Perersen, Gitte - Friis, Ib - Smith, Stephen - Moore, Michael
If You've got a Tree, Climate: Reconstructing the History of Evolution and Climate Preference in the Four O'Clock Tribe (Nyctaginaceae tribe Nyctagineae)
- 5:00 PSY010 Liu, Michelle* - Finch, Evan - Leatherman, Lila - Douglas, Norman - Flores, Hilda - Ochoterena, Helga - Moore, Michael
Understanding the Evolution of Gypsum Endemism using Target Enrichment
- 5:00 PSY011 Bilsborrow, Jordan* - Culham, Alastair - Dizkirici, Ayten - KÃ¶nyves, KÃ¡lmÃ¡n - Garnett, George J. - David, John
A molecular study of the genus *Muscaria* Mill. s.lat. (Asparagaceae, Hyacinthinae)
- 5:00 PSY012 Imwattana, Karn* - Shaw, A. Jonathan
Species delimitation in the *Sphagnum capillifolium* complex in North America
- 5:00 PSY013 Jordan, Chazz* - Eserman, Lauren - Coffey, Emily - Brinkman, Becky
Evolutionary Relationships in the Euglossine Bee Pollinated Orchid Genus *Stanhopea*

- 5:00 PSY014 Benton, Ben* - Schneider, Adam
Untangling a Mistaken Identity: Describing the Two Species Within *Aphyllon fasciculatum*
- 5:00 PSY015 Whitehurst, Lauren* - Soltis, Pamela - Soltis, Douglas
Assessing Phylogenetic Diversity Patterns for the Vascular Flora of Florida
- 5:00 PSY016 Moroni, Pablo* - O'Leary, Nataly
Insights into the Tribe Duranteae (Verbenaceae): A molecular phylogenetic approach to the systematics of the New World genus *Duranta* L
- 5:00 PSY017 Thixton, Hana* - Santee , Mathilda Viola - Freudenstein, John - Barrett, Craig
Phylogeography and fungal host specificity in the *Corallorrhiza maculata* species complex
- 5:00 PSY018 O'Leary, Nataly* - Moroni, Pablo - Frost, Laura
First step towards a molecular phylogeny of *Citharexylum* (Verbenaceae)
- 5:00 PSY019 Hays, Mallory - Antar, Guilherme - Drew, Bryan*
Phylogenetic placement of Monochilus in the Ajugoideae (Lamiaceae)
- 5:00 PSY020 Nicolas, Antoine* - Diallo, Fatimatou - Khasroo, Zemima - Obinelo, Adaeze - Plunkett, Gregory M.
Phylogenetics and Biogeography of Worldwide *Hydrocotyle* (Araliaceae)
- 5:00 PSY021 Jones, Mackenzie G.* - Bogle, Aubrie J. - Smalley, Sam - Dodge, Reagan - Nix, Madeleine - Egan, Ashley N.
A new record of *Pueraria bella* (Fabaceae) in China enables the morphological and phylogenetic placement of an enigmatic and rare species
- 5:00 PSY022 Ickert-Bond, Stefanie* - Endara, Lorena - Burleigh, Gordon
Capturing the flag: advancing phylogeny inference in *Ephedra* using targeted sequencing capture
- 5:00 PSY023 Choi , Tae Young,* - Kim, Hye-Won - Ro, Yumi - Kim, Aleksey - Kim, Hye-RIn - Son, Dong Chan - Kim, Dong-Kap - Lee, Soo-Rang
Complete chloroplast genomes of *Iris* species occurring in Central Asia: molecular structures, comparative, and phylogenetic analyses
- 5:00 PSY024 Fabre, Paige* - Wolfe, Andi
Staminode morphology, function, and evolution in *Penstemon* (Plantaginaceae)
- 5:00 PSY025 Bhatti, Maryum* - Lee, Aaron - Rahman-Vyas, Hiba - Howarth, Dianella - Donoghue, Michael - Clement, Wendy
Combining benchwork and bioinformatics to reconstruct the evolutionary history of CUP-SHAPED COTYLEDON in honeysuckles and relatives
- 5:00 PSY026 Harris, Jesse* - Tripp, Erin - Smith, Stacey
Homoplasious character assessment in *Clematis* subgenus *Viorna*

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TROPICAL BIOLOGY

- 5:00 PTB001 Valdebenito, Hugo* - Miranda, Nelson - Zabala, Damian
Structure and floristic composition of a forest fragment in the Mindo
Andean Cloud Forest, Ecuador
- 5:00 PTB002 Xiong, XiangWen* - Wu, Mingzi
Evaluation of a Delightful Ecological & Energized Module for Global Public
Green by Tropical Plant
- 5:00 PTB003 Nagahama, Ai* - Tagane, Shuichiro - Ngoc, Nguyen Van - Binh, Hoang
Thi - Suyama, Yoshihisa - Yahara, Tetsukazu
Phenology of tropical montane forests in southern Vietnam: leafing is
associated with precipitation but flowering is not
- 5:00 PTB004 Valverde, Javier* - Carvalho, Carolina S. - Jordano, Pedro - Galetti,
Mauro
Large herbivores regulate the spatial recruitment of a hyperdominant
Neotropical palm
- 5:00 PTB005 Sur, Gary* - Zahn, Geoffrey - Stacy, Elizabeth
Evaluating Host-Taxon, Environment, and Distance Effects on Leaf Fungal
Endophytes in Hawaiian *Metrosideros*
- 5:00 PTB006 Xavier, Aleena* - Saryan, Preeti - GOWDA, VINITA
Leaky barriers and lack of boundaries: Understanding species complexes
in the genus *Hedychium* J.Koenig
- 5:00 PTB007 Nyenya, Ratidzayi
Blooming where they are planted: A study of *Dracaena* in cultivation in an
indoor tropical forest

5:30 PM - 6:30 PM Ecological Section Business Meeting

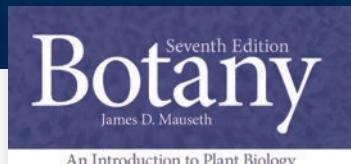
7:00 PM - 8:00 PM SHC Member Meeting

7:00 PM - 8:00 PM BSA Members Meeting

Botany: An Introduction to Plant Biology

Seventh Edition

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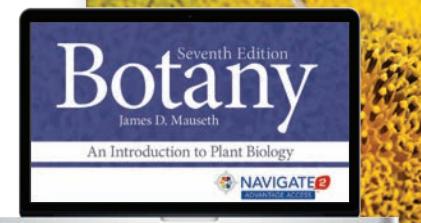


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FRIDAY, JULY 31ST

9:00 AM - 5:00 PM Exhibit Hall Open

9:45 AM - 10:00 AM S15 Special Lecture Opening Welcome
Chair: Unknown

10:00 AM - 12:00 PM W05 Workshop
The promises and perils of pigments: quantifying
color in plants
Chair: Justin Whitall

10:00 AM - 12:00 PM COL08 Colloquium
Plant life in Neotropical rocky outcrops
Chair: Johanna Jantzen and Maria Beatriz de Souza Cortez

10:00COL08SUM Jantzen, Johanna* - de Souza Cortez, Maria Beatriz - Nogales da Costa Vasconcelos, Thais - Soltis, Douglas - Soltis, Pamela
Plant life in Neotropical Rocky Outcrops

10:15COL08001 Vidal Jr., JoÃ£o de Deus* - Pereira de Souza, Anete - Koch, Ingrid
Landscape composition, marginality, and climatic stability roles on the
patterns of woody plant endemism in the Cerrado

10:30COL08002 de Souza Cortez, Maria Beatriz* - Folk, Ryan - Grady, CJ - Stewart,
Aimee - Spoelhof, Jonathan - Smith, Stephen A. - Soltis, Douglas -
Soltis, Pamela
Is the occurrence of ancient angiosperms associated with old, climatically
stable and infertile landscapes in Brazil?

10:45COL08003	Nogales da Costa Vasconcelos, Thais* - Alcantara, Suzana - Andrino, Caroline - Forest, FÁ©lix - Reginato, Marcelo - Simon, Marcelo - Pirani, JosÃ© Rubens Fast diversification through a mosaic of evolutionary histories characterizes the endemic flora of the campo rupestre
11:00COL08004	Alcantara, Suzana Morphological and ecological divergence in Neotropical Velloziaceae
11:30COL08005	Liu, Sukuan* - Smith, Stacey Phylogeny and Biogeography of South American Marsh Pitcher Plant Genus <i>Heliamphora</i> (Sarraceniaceae) Endemic to the Guiana Highlands
11:45	Discussion

10:00 AM - 12:00 PM ECO6 Ecology 6: Reproductive Ecology

Chair: Sarah Richman

10:00 ECO6001	Cullen, Nevin* - Xia, Jing - Wei, Na - Kaczorowski, Rainee - Arceo-Gomez, Gerardo - O'Neill, Elizabeth - Hayes, Rebecca - Ashman, Tia-Lynn Pollinator traits are a better predictors of insect-carried pollen load attributes than the local floral resources
10:15 ECO6002	Vyas, Amal K* - GOWDA, VINITA Patient Impatiens : partitioning and cooperativity in congeneric sympatric <i>Impatiens</i> spp. (Balsaminaceae) In Kaas plateau, Maharashtra
10:30 ECO6003	De La Pascua, Danielle* - Smith-Winterscheidt, Corrinne - Dowell, Jordan - Goolsby, Eric - Mason, Chase Evolutionary trade-offs in the chemical defense of floral and fruit tissues across genus <i>Cornus</i>
10:45 ECO6004	Fetters, Andrea* - Cantalupo, Paul - Wei, Na - Saenz Robles, Maria Teresa - Stephens, Jessica - Pipas, James - Ashman, Tia-Lynn The pollen virome revealed: interactions with pollinators and proximity to human disturbances shape the pollen virome of wild plants
11:00 ECO6005	Richman, Sarah* - Maalouf, Isabelle - Smilanich, Angela - Leonard, Anne Nectar secondary metabolites and pesticide exposure synergistically affect pollinator physiology and behavior

10:00 AM - 12:15 PM Germinating Ideas - Lightning Talks I

10:00 AM - 12:00 PM PHYL3 Phylogenomics III

Chair: Unknown

- 10:00PHYL3001 Ortiz, Edgardo M.* - Schaefer, Hanno
Improved and automated marker recovery from targeted capture data
- 10:15PHYL3002 Hoffberg, Sandra* - Eaton, Deren
Amount of hybridization differs with varying gene tree lengths in reference aligned RADseq data
- 10:30PHYL3003 Givnish, Thomas* - Lemmon, Alan - Lemmon, Emily - Specht, Chelsea - Eifler, Evan - Karimi, Nisa
Phylogenomics, floral evolution, and formation of an ornamented ring species-complex in the Bay Area Clade of *Calochortus* (Liliaceae)
- 10:45PHYL3004 Eifler, Evan* - Lemmon, Alan - Lemmon, Emily - Givnish, Thomas
Novel Phylogenomics in *Geissorhiza* (Iridaceae): Preliminary results from the Cape Floristic Region
- 11:00PHYL3005 Nicolas, Antoine* - Alfaro, Bryan - Babio, Lucas - Ferraro, Justin - Franklin, Sean - Nair, Harikrishnan - Plunkett, Gregory
Molecular assessment of the *Azorella multifida* complex and its diversification within humid upper Andean habitats
- 11:15PHYL3006 McKenzie, Patrick* - Eaton, Deren
Using *jpcal* to simulate and visualize genealogies and sequences on species trees or networks
- 11:30PHYL3007 Liu, Jing - Ren, Chen - Wen, Jun*
Phylogenomics of *Aralia* sect. *Aralia* (Araliaceae): insights into its species delimitations and diversification in eastern Asia

10:00 AM - 11:30 AM POPGEN3 Population Genetics/Genomics III -

Chair: Jeremy Coate

- 10:00POPGEN3001 Twyford, Alex* - Becher, Hannes - Brown, Max - Yanqian, Ding - Powell, Robyn - Pellicer, Jaume - Ilia, Leitch - Chris, Metherell
Genome gymnastics and problematic polyploidy in eyebrights (Euphrasia, Orobanchaceae)
- 10:15POPGEN3002 Suissa, Jacob - Taylor, W. Carl - Kinosian, Sylvia* - Schafran, Peter - Bolin, Jay - Zimmer, Elizabeth
Revealing the origins of a polyploid complex of *Iso'tes* in northwestern North America
- 10:30POPGEN3003 Shastry, Vivaswat
Model-based genotype and ancestry estimation for potential hybrids with mixed-ploidy

- 10:45 POPGEN3004 Mattingly, Kali* - Hovick, Steve
Synthesized autopolyploids of *Arabidopsis* are more plastic than their diploid progenitors
- 11:00 POPGEN3005 Mabry, Makenzie - Pires, Joseph*
The Evolutionary History of Wild and Domesticated *Brassica oleracea* (Brassicaceae)
- 11:15 POPGEN3006 Audi, Lauren* - Nyree, Zerega
Tracing breadfruit introductions into the Caribbean using next generation sequencing

10:00 AM - 2:00 PM SY5 Symposium
Insights into the diversity of plant sex chromosomes -
Chair: Sarah Carey; Joanna Rifkin

- 10:00 SY5SUM Carey, Sarah* - Rifkin, Joanna
Insights into the diversity of plant sex chromosomes
- 10:00 SY5001 Charlesworth, Deborah
Studying the evolution of sex chromosomes: some ways in which plants are better than animals
- 10:30 SY5002 Hasan, Ahmed* - Duggal, Jaspreet - Ness, Rob
Consequences of recombination for the evolution of the mating type locus in *Chlamydomonas reinhardtii*
- 11:00 SY5003 Carey, Sarah* - McDaniel, Stuart
Cryptic evolutionary strata in an ancient UV sex chromosome system
- 11:30 SY5004 Harkess, Alex
Sex determination with two genes in garden asparagus
- 12:00 Break
- 12:30 SY5006 Rifkin, Joanna* - Beaudry, Felix - Humphries, Zoë - Choudhury, Baharul - Wright, Stephen - Barrett, Spencer
A role for pre-existing recombination suppression in the evolution of a plant neo-sex chromosome
- 1:00 SY5007 Ashman, Tia-Lynn
The secrets of plant sex determination as revealed by strawberries
- 1:30 Discussion

10:00 AM - 12:00 PM W14 Workshop

The promises and perils of pigments:
quantifying color in plants

Chair: Unknown

10:00 AM - 5:00 PM W15 Workshop Using Digitized Herbarium Data
in Research: Applications for Ecology,
Phylogenetics, and Biogeograph

Chair: Pamela Soltis

11:00 AM - 12:00 PM CV Reviews

12:00 PM - 1:00 PM Exhibit Hall Open

12:00 PM - 1:30 PM PLANTS Grantee/Mentor Debrief - Private

Chair: Heather Cacanindin

12:30 PM - 2:00 PM CB3 Conservation Biology 3

Chair: Else Demeulenaere

12:30 CB3001 Demeulenaere, Else* - Endara, Lorena - Burleigh, Gordon - Ickert-Bond, Stefanie
Genetics and Ethnoecology for the Development of Conservation Policies for Endemic Plants of Pacific Islands

12:45 CB3002 Reatini, Bryan* - Valdebenito, Hugo
Is reproductive interference contributing to the local extinction of the endemic Galápagos tree species *Psidium galapageium*?

1:00 CB3003 Larson, Joseph - DeNittis, Alyson - Perez, June - Kopp, Olga*
Ex Vitro Rooting and Acclimatization for the Micropropagation of *Lepidium ostleri*, an Edaphic Endemic Plant Species

1:15 CB3004 Naranjo, Andre* - Melton, Anthony - Soltis, Douglas - Soltis, Pamela
Endemism and Future Climate Change in the Scrub Mint Clade (Lamiaceae): Identifying Areas and Species of Critical Concern

- 1:30 CB3005 Rittgers, Amber - Coffey, Emily - Eserman, Lauren*
Conservation genetics of the endangered Apalachicola Rosemary,
Conradina glabra

12:30 PM - 2:45 PM COL10 Colloquium
The Science of Meaningful Undergraduate Research Experiences
Chair: Edward McAssey; Karolina Heyduk

- 12:30COL10SUM McAssey, Edward
The Science of Meaningful Undergraduate Research Experiences
- 12:30COL10001 Clement, Wendy
From a love of art to an eye for detail: Connecting undergraduates with research opportunities in plant systematics
- 12:45COL10002 Ison, Jennifer
Independent bees, working together: Using self-reflection and cohort building to support successful research experiences for all students
- 1:00 COL10003 Burke, Janelle* - Hodges, Paige - Wilkin, Emma Jeanne
Model for Sustained research experiences in Botany from Howard University
- 1:15 COL10004 Chomentowska, Anri* - Miller, Jill
Undergraduate research on mating systems and interspecific reproduction in wild tomatoes: reflecting on the scientific and personal significance
- 1:30 COL10005 Merced, Amelia
Get off your phone and pick up the tablet: using Survey123 for ArcGIS to collect ecological data
- 1:45 COL10006 Cantley, Jason
A model for successful undergraduate research experiences at a large Primarily Undergraduate Institution: notes and tips from a junior PI beginning research on plant evolutionary adaptations of a young Hawaiian adaptive radiation
- 2:00 COL10007 Goodrich, Katherine
Plant research at a PUI: Inclusive mentoring in botany at Widener University
- 2:15 COL10008 Jabaily, Rachel* - Fetterly, Emma - Bodine, Erin
A liberal arts approach to studying life history evolution of the Bromeliaceae
- 2:30 COL10009 Martine, Christopher
Undergrads participated in species discovery and you're not going to believe what happened next

12:30 PM - 2:30 PM ECO7 Ecology 7: Species Interactions

Chair: Suzanne Koptur

- 12:30 ECO7001 Koptur, Suzanne* - Primoli, Andrea Salas - Pimienta, Maria
Defoliation in perennial plants: predictable and surprising results in *Senna* species
- 12:45 ECO7002 Howard, Mia* - Kao-Kniffin, Jenny - Kessler, Andre
Shifts in plant-microbe interactions over ecological succession and their effects on plants' resistance to herbivores
- 1:00 ECO7003 Vilella-Arnizaut, Isabela* - Fenster, Charles
Quantifying plant-pollinator interactions in the Prairie Coteau
- 1:15 ECO7004 Ramos, Sergio E.* - Rzodkiewicz, Lacey - Turcotte, Martin - Ashman, Tia-Lynn
Effects of herbicide on floral and vegetative traits in rapid *Brassica rapa*: implications for ecological interactions
- 1:30 ECO7005 Veltkamp, Hannah* - Houghton, Sydney - Stevens, Michael T.
Netleaf hackberry (*Celtis reticulata*) seeds are positively affected by ingestion by coyotes
- 1:45 ECO7006 Collings, Jeremy* - Arsuffi, Tom
Deer herbivory alters plant community structure in the Edwards Plateau
- 2:00 ECO7007 Hakes, Alyssa
The location of the rare Pitcher's thistle (*Cirsium pitcheri*) along a dune community can influence weevil attack. Can it influence pollinators as well?
- 2:15 ECO7008 Holmes, Katherine* - Power, Alison
Neighbor, competitor: the role of resource availability and neighbor identity in plant susceptibility to herbivores

12:30 PM - 2:40 PM Germinating Ideas - Lightning Talks II

12:30 PM - 2:15 PM SYS5 Systematics V: Gymnosperms to Monocots part A

Chair: Unknown

- 12:30 SYS5001 Gernandt, David* - Liston, Aaron
Multilocus nuclear phylogenetics of the main lineages of *Pinus* and other pinoid Pinaceae

12:45	SYS5002	Garcia, Nicolas* - Folk, Ryan Progress in elucidating the phylogeny and species delimitation in a Chilean endemic clade of lilies
1:00	SYS5003	Sassone, Agostina* - Blattner, Frank R. Phylogenomics in South American garlics: preliminary results on diversification within <i>Nothoscordum</i> (Amaryllidaceae)
1:15	SYS5004	Takawira-Nyenya, Ratidzayi* - Mucina, Ladislav - Cardinal-McTeague, Warren - Thiele, Kevin Sansevieria (<i>Snake plants</i>) are a herbaceous clade within <i>Dracaena</i> (Dragon Trees): Inference from non-coding plastid and nuclear DNA sequence data

1:00 PM - 5:00 PM W16 Workshop

Phylotranscriptomic analyses: using RNA-seq data in phylogenetic reconstruction and evolutionary analyses -

Chair: Ya Yang

3:00 PM - 5:00 PM CG3 Functional & Comparative Genetics/Genomics III

Chair: Unknown

3:00	CG3001	Marchant, Daniel Blaine* - Nelms, Brad - Walbot, Virginia Beyond the protoplast: isolating and analyzing fixed cells for single-cell research
3:15	CG3002	Picard, Colette - Povilus, Rebecca* - Williams, Ben - Gehring, Mary Single nucleus analysis of <i>Arabidopsis</i> endosperm reveals new, transcriptionally distinct cell types
3:30	CG3003	Schafran, Peter* - Xu, Xia - Robison, Tanner - Hauser, Duncan - Gunadi, Andika - Wickell, David - Villarreal Aguilar, Juan Carlos - Li, Fay-Wei Twelve high-quality genomes highlight genomic diversity across the hornworts
3:45	CG3004	Groot Crego , Clara* - Hess, Jacqueline - de La Harpe, Marylaure - McNair, Neil - Yardeni, Gil - Paris, Margot - Barfuss, Michael H. J. - Till, Walter - Leroy, Thibault - Paun, Ovidiu - Lexer, Christian Comparative genomics approaches as tools to unveil the drivers of evolutionary radiations : a case study in <i>Tillandsia</i> (Bromeliaceae)

4:00	CG3005	Sudianto, Edi* - Wu, Chung-Shien - Chaw, Shu-Miaw The origin and evolution of plastid genome downsizing in Southern Hemispheric cypresses (Cupressaceae)
4:15	CG3006	Robison, Tanner* - Hauser, Duncan - Nelson, Jessica - Lewis, Louise - Li, Fay-Wei Exploring the dynamic plastid and mitochondrial genomes of a new species of green algae (Chaetopeltidales, Chlorophyceae)
4:30	CG3007	Mohn, Rebekah* - Yang, Ya Centromere protein evolution and chromosome count variation in <i>Drosera</i> (Droseraceae), a group with holocentromeres
4:45	CG3008	Deb, Sontosh* - Lewis, Michelle - Jones, Sydney - Risman, Daniel - McKain, Michael Variation of transposable elements across <i>Steinichisma hians</i> (Poaceae) populations in the Southeastern USA

3:00 PM - 5:00 PM PHYL4 Phylogenomics IV
Chair: Unknown

3:00	PHYL4001	Sanderson, Michael - Burquez, Alberto - Copetti, Dario - McMahon, Michelle* - Zeng, Yichao - Wojciechowski, Martin A new (old) approach to genotype-based phylogenomic inference within species, with an example from the saguaro cactus (<i>Carnegiea gigantea</i>)
3:15	PHYL4002	Mabry, Makenzie - Pires, Joseph* Phylogeny and multiple independent whole-genome duplication events in the Brassicales
3:30	PHYL4003	Karimi, Nisa* - Lemmon, Alan - Lemmon, Emily - Hernandez, Adriana - Eifler, Evan - Strickler, Susan - Specht, Chelsea - Givnish, Thomas Phylogenomics, reticulate evolution, historical biogeography, shifts in climatic niche, and parallel adaptive radiations in floral syndrome in the genus <i>Calochortus</i> (Liliaceae)
3:45	PHYL4004	Nissenbaum, Matthew* - Burke, Sean - Orton, Lauren - Holthuijen, Wieteke - Duvall, M Dispelling the Mirage of C4 Driven Drought Tolerance in Poaceae: A Phylogenomic Study
4:00	PHYL4005	Lewis, Michelle - Blakely, Sarah - McKain, Michael* Phylogenomics of the genus <i>Hosta</i> : Disentangling the impact of an ancient polyploid event on phylogeny resolution

- 4:15 PHYL4006 Zhou, Wenbin* - Soghogian, John - Xiang, Jenny
Phylogenomics of *Hamamelis* and *Castanea* with 353 Angiosperm genes
and RAD-seq data – A proposed approach for cleaning the paralogs
- 4:30 PHYL4007 Ramanauskas, Karolis* - IgiÅ‡, Boris
Extract and annotate genes from raw RNA-seq reads: kakapo

3:00 PM - 4:00 PM S17 Address of the BSA President-Elect -
The Shapes of Botany
Cynthia Jones

Introduced by Linda Watson

4:00 PM - 5:00 PM Botanical Society of America Award Presentations

5:00 Closing Remarks

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 - real or implied threat of physical harm
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Falsely reporting unacceptable behavior is a violation of the Code of Conduct.

The meeting organizers, Society staff and Society executive officers reserve the right to enforce this code of conduct in any manner deemed appropriate. Anyone violating the code of conduct may be: (a) warned to cease the behavior and that any further reports will result in more serious sanctions (b) expelled from the meeting (without refund), and/or (c) prohibited from attending future meetings indefinitely or for a period of time (d) removed from membership in any or all of the partner societies involved in BOTANY conferences and/or e) held accountable through notification of the individual's employer of the action taken regarding this violation.

Establishing this code of conduct is intended to prevent incidents of harassment, discrimination, and violence, and to maintain the high quality of scientific discourse that our members have come to expect from BOTANY conferences.

The participating societies shall not be responsible for any defamatory, offensive, or illegal conduct of BOTANY conference participants, and shall not be held liable for personal injury, property damage, theft or damage of any kind suffered by the participants at or in connection with the BOTANY conference. By registering for and attending the annual BOTANY Conference, each participant acknowledges that they have read this Disclaimer, and expressly releases the Societies and its board members, directors, officers, employees, or agents from any and all liability in connection with such Conference.

Reporting a Code Violation

If you are being subjected to, or notice that someone else is being subjected to behavior that violates this Code of Conduct, please contact our independent Ombudsman, Sherry Marts, PhD, at smartsconsultingllc@gmail.com or 202-670-7746

All complaints will be treated seriously and responded to promptly.

All reports are confidential and only the Code of Conduct Committee and anyone involved in carrying out sanctions will be aware of the report if the Ombudsperson deems the incident to be a violation.

If possible, provide the following information, preferably in writing:

- Identifying information (name/badge information, appearance) of the participant doing the harassing
 - The behavior that was in violation
 - The approximate time and place of the behavior (if different than the time the report was made)
 - The circumstances surrounding the incident
 - Other people involved in or witnessing the incident

Anyone experiencing or witnessing behavior that constitutes an immediate or serious threat to public safety, or a criminal act should contact 911. Those witnessing a potential criminal act should also take actions necessary to maintain their own personal safety.

Process for Investigating a Code Violation

After a code violation has been reported to our independent Ombudsperson, the Ombudsperson will conduct an investigation to ascertain if the behavior was in violation of the code, including interviewing other witnesses to the event. If an incident is deemed a violation, the Ombudsperson will pass all reported information to the Code of Conduct Committee (composed of one representative from each participating society) that shall deliberate on the nature of the violation, reach a decision on an action to be taken, and convey that information to the Ombudsperson. The Ombudsperson will then convey that message and decision of the Committee to the participant that has been reported in violation and, to anyone involved in carrying out sanctions if that is deemed necessary, and if requested, to the person who directly experienced the harassing behavior.

Addressing Grievances

If you feel you have been falsely or unfairly accused of violating this Code of Conduct you should notify our independent Ombudsperson, Sherry Marts, PhD, with a concise description of your grievance. Your grievance will be handled promptly. (smartsconsultingllc@gmail.com or 202-670-7746)

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Hope to See you there!