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SEB's 2019 Annual Meeting

The Future of Forests: Perspectives from Indigenous People, Traditional Practices and Conservation

Cincinnati, Ohio

June 2-6, 2019



Plans for the 2019 SEB meeting in Cincinnati (June 2-6) are really shaping up. The theme for the meeting will be, "The Future of Forests: Perspectives from Indigenous People, Traditional Practices and Conservation." Invited speakers will include: Mike Hopkins (Brazilian National Institute of Amazonian Research), Mike Dockry (U.S. Forest Service), Theresa Culley (University of Cincinnati), Jim Miller (Missouri Botanical Garden), Kathy Morrison (University of Pennsylvania), and Robert Bye (National Autonomous University of Mexico).

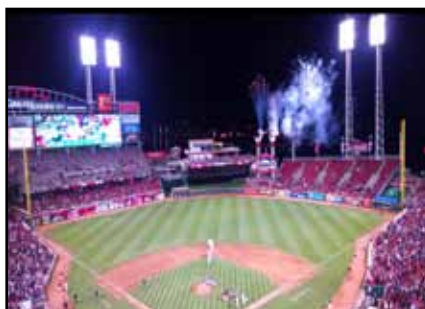


No doubt, a memorable DEB talk will be given by John Rashford at the Freedom Center overlooking the Ohio River.

Also, there will be workshops on viticulture by Nick Dunning (UC) and iPhone video-making led by John De La Parra (Harvard).



Lots of field trips are planned to exciting places such as Big Bone Lick,



Plants & People

**The Newsletter of
The Society
For
Economic Botany**

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<http://www.econbot.org>

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The articles within the Newsletter are independently submitted and do not represent the position of The Society For Economic Botany as a whole.

Deadlines for submissions are February 1 (Spring Issue) and September 1 (Fall Issue).

Notes from the Field

This issue is a little delayed due to a busy fall. However, it is not too late to remember all the great events at the 2018 meeting and activities resulting from that meeting.

Our Joint Meeting in Madison was full of sessions, fieldtrips, workshops, and, well, great people, the backbone of SEB. We met with our sister society Society of Ethnobiology. And because there are so many overlapping interests, it was struggle to choose between sessions. We look forward to meeting with them again in the future.

The 2018 council meeting was very successful in pushing new awards forward and our continued support for members. There are a few articles shared inside this issue in case you missed the meeting or were in a different session. They are reflections by a student, workshop reviews, and a unique session on Applied Ethnobiology for employment, Ginseng panel and field trip, and the DEB interview.

Very important is the list of committees as we need you to Volunteer. Please consider working with us, for you.

In 2019 we have a full program in Cincinnati, OH See page 1.

The awards from the 2018 meeting are listed on page 4.

There are also grants and job opportunities shared. I am sure there are more out there so please remember to send them in we can list them on our job board.

See you in Cincinnati!

Trish Flaster



Student Reflections on the 2018 Conference

Reflections on My Experience at the 2018 Society for Economic Botany Meeting in Madison Wisconsin: Food Security, Sovereignty, & Traditional Knowledge

Submitted by Georgia Fredeluces Hart,
georgia.hart@gmail.com

I have long known about and wanted to attend an SEB Meeting and am so happy that I was able to join for my first, and not last, meeting this past June! This meeting was hosted in a beautiful location and had convenient and affordable housing options for students. The registration was also very reasonable for students. A travel grant for attendance at the conference made my attendance possible.

What I enjoyed most about the meeting was probably the kindness that the other students, professionals, and faculty members showed towards me. When your work is somewhat at the margins of academia, these sorts of societies and the professional comradery they provide are so important to feeling validated and inspired to continue work in Ethnobotany. The SEB and SOE societies felt like families.

I enjoyed and learned a lot from the talks during concurrent sessions. Edelmira Linares inspired me with her engaging presentation and collaboration with local women in the creation of cookbook dedicated to recipes with local wild greens. Orou Gaoue presented the benefits of and challenges in the field to move towards a more hypothesis-driven direction. Matthew Bond gave an excellent talk on the cultural and ecological factors that predict what people know about medicinal plants. Michelle Baumflek shared the important and inspiring work she is doing in the context of traditional gathering and public lands policy through collaboration with tribal nations in the Northeast. Cissy Fowler

gave a fascinating talk on food security and fire. I appreciated how the DEB, Gary Paul Nabhan, whose work I have read and cited, but whom I have never heard speak, emphasized the need for conservation and biocultural conservation to address the economic sustainability and financial equity of research and conservation projects for local communities. He also presented the possibility of collaborations that are not “anti” anyone or anything, but can occur from a common space. Kumu Al Keali'i Chock delivered clear and important information about the Hawaiian Islands and Hawaiian ethnobotany. His contributions to ethnobotany and education continue to impress me. Robbie Hart gave a fascinating talk demonstrating the importance of traditional knowledge to climate change data analysis and conclusions. There are many more that I could mention, but these were my highlights.

Another wonderful component of the conference was the fieldtrips. I attended the fieldtrip entitled: A Force of Nature: Native Peoples and the Making of the South Central Wisconsin Landscape. We were able to learn about the Ho-Chunk culture, the practice of building burial mounds, and to visit burial mounds. Our fieldtrip leader was extremely knowledgeable and passionate. I also enjoyed the chance to walk through a Wisconsin forest and be introduced to some plants in the region, such as eastern red cedar, *Juniperus virginiana* is not a true cedar, like western red cedar, *Thuja plicata*.

I love how we ended some night drinking 'awa and listening to/playing bluegrass in the hotel lobby. This is definitely my scene. ☺

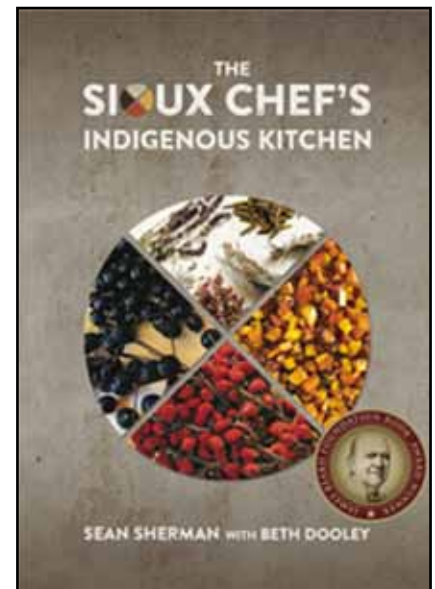
Mahalo nui loa and thank you very much to the Society for Economic Botany for the opportunity, education, and warm welcome.



Natural Bridges State Park, a stop on the fieldtrip near Leland, Wisconsin

2018 Meeting Banquet

We would be amiss without mentioning the banquet an exquisite event with Native American Sioux Chef, Sean Sherman who takes a forward-thinking approach to indigenous cuisine, bringing his culture into the light to share with the rest of the world. Well we experienced it and what a delicious meal it was with local ingredient. So salivate on these memories....



- Corn and smoked mushrooms with blackberry
- White bean puree with Walleye wild rice crackers, rosehip sauce
- Bison with sunchokes and smoked blueberry sauce
- Maple blue
- Corn pudding with hazelnuts.



2018 Annual Awards Winners

SEB has a strong tradition of supporting our students. We have several awards: the Schultes Award (named for the father of Ethnobotany, this is a graduate field research award), the Fulling Award (named after the Founder and Editor of our Journal, Edmund Fulling, for the best oral presentation), and a poster Award named for Julia F. Morton, a founding member and world-renowned Economic Botanist.

Edmund H. Fulling Award

The awards for 2018 were given to the following students:

Fabien Schultz received the Edmund H. Fulling Award for best oral presentation by a young professional for his presentation "Investigation of Antimalarial & Genotoxic Properties of African Medicinal Plants Traditionally Used in Western & Central Uganda."

Julia F. Morton Award

Florencia Pech-Cardenas received the Julia F. Morton Award for best poster presentation by a young professional for her poster "Linking Heritage Tourism, Livelihoods, & Natural Resources Management in Mayan Communities." Due to the excellence of his poster, a second Morton Award was given to Daniel Williams for the poster entitled "The Role of Polymorphism in *Chenopodium* domestication."



Richard Evan Schultes Research Award

The Society is also dedicated to supporting the development of young scientists in the field and the Richard Evan Schultes Research Award is the embodiment of this spirit. The Schultes Award committee evaluated 12 proposals this year, originating from five countries (seven from the United States, and one each from DRC, Kenya, Cameroon, Germany, and the United Kingdom). As in prior years, applicants were mainly Ph.D. students, with the occasional M.S. or post-doctoral applicant.

This year there were several strong contenders, but the committee (Robbie Hart, Dr. Tamara Tiktin, Dr. Natalie Mueller, and Dr. Wendy Applequist) all agreed to recommend the proposal of Amanda Thiel for funding, and to simultaneously make a strong suggestion that, for this year, SEB consider funding a second award to Alain Ngute. Ms. Thiel's proposal "Cultural Values and Ethnobotanical Knowledge among the Q'eqchi Maya in Guatemala" presented an interesting anthropological question, well grounded in the theoretical literature and with an appropriate methodology to give us high confidence in her success. Her results will advance our understanding of the interplay of cultural demands and ethnoecological knowledge and have the potential to support awareness and revitalization efforts. At the same time, we were all excited by Mr. Ngute's "Beyond Timber: The Commercialization of Edible Caterpillars in Cameroon," which proposes to join ethnobotany to ethnozoology by identifying host trees for marketed edible caterpillars, and we felt that his

relevant, innovative, and interdisciplinary study has a high probability of success.

Consider submitting your proposal for the 2019 Schultes Research Award. Check the Society website for guidelines: <http://www.econbot.org/index.php?module=content&type=user&func=view&pid=50>.

The committee suggests the following ranking system:

Point values for *followed directions* (5); *significance or potential contribution to botany* (30); *overall quality/conceptual background* (30), *relevant citations* (10), *appropriate methodology* (20), *budget justified* (5), and *letters of support* (10).

The committee makes the following recommendations:

- Eliminate the letter of reference; this is an unclear guideline and difficult to evaluate across different national academic cultures. Adjust the solicitation on the website to reflect that we only will accept a confirmation email of student/postdoctoral status (currently the only requirement, with the letter of reference optional).
- Add a *broader impacts* consideration with point values, with reviewer instructions that this could include the promise of the student or project to broaden participation/build capacity in economic botany, give back to the local community.

It is requested that a summary be submitted to the newsletter or a paper to the journal at the close of the research.

Continued on page 5



2018 Awards

continued from page 4

Klinger Book Award

Brad Bennett, Chair, bennett@fu.edu

Klinger Committee Klinger Book Award: We are pleased to announce the winners: Mike Balick and Rosita Arvigo for their book, *Messages from the Gods: A Guide to the Useful Plants of Belize*. Mike and Rosita have worked for over 25 years to produce this excellent guide. Belize is an ecologically and culturally diverse nation with over 3,400 species of plants, so there is a treasure of knowledge here.

The 2017-2018 Klinger Committee (B.C. Bennett, J.R. Stepp, and J. Rashford) selected three finalists for this year's Klinger Book Award. Michael Balick and Rosita Arvigo's *Messages from the Gods: A Guide to the Useful Plants of Belize* was a previous finalist. The text is a comprehensive treatment of Belizean ethnobotany, based on extensive fieldwork and thorough botanical identification and documentation. V. Jain and S.K. Jain's *Compendium of Indian Folk Medicine and Ethnobotany* is an extensive compilation of India's more than 4,500 useful plants. The book, which includes about 1,000 references, attests to the biological and ethnic diversity of the world's second largest country. *The Illustrated History of Apples in the United States and Canada*, compiled by Daniel J. Bussey and edited by Kent Whealy is a massive, encyclopedic work, which describes 6,350 U.S. apple varieties. The seven-volume treatment includes 1,400 watercolors from the USDA's Pomological Watercolor Collection. At first glance, *The Illustrated History of Apples* might seem like an odd contender for the Klinger Book Award. Yet it provides historical documentation of a slice of the diversity found within the world's most important temperate fruit crop.

The committee was unanimous in its selection of the 2018 Klinger Award—Balick and Arvigo's *Messages from the Gods*. Representing decades of research by its authors, the book is both comprehensive in its coverage and accessible to a wide range of audiences. It serves as a model of thorough and ethical ethnobotanical fieldwork. The other books remain eligible for the Klinger Book Award for the next two years.

President's Award

The President's Award was bestowed on Dr. Robert Voeks for his outstanding service to the Society. He has been Editor of our journal *Economic Botany* for 10 years! During his tenure, Bob has improved the journal's ratings, review times, and the quality of the articles.

We were also able to provide travel awards and complimentary meeting registration to four Students/PostDocs and four members from Developing Nations. Find their names under Travel Awards.

New Public Engagement Award

The Society for Economic Botany has a new Public Engagement Award available. Organized by John de la Parra, an SEB Council member, there will be cash prizes of \$500, \$150, and \$100 sponsored by Vine Biotech, LLC. The goal of this award is to communicate to the public, as well as current and future society members, a better understanding of the varied perspectives on Economic Botany around the world. Grab your cell phone or a camera and let's get the word out about who we are and what we do. If you know someone with a great story to tell please consider purchasing a discounted gift membership at only \$10 so that they can participate in this competition!

Travel Awards

We owe a huge thanks to our meeting coordinators, Eve Emshwiller and David Spooner who wrote a grant so that many more awards could be given for attendance. Congratulations to the awardees!

Student/Postdoc Awards

Georgia Fredeluces—georgia.hart@gmail.com

Jason Irving—jtwi2@kent.ac.uk

Rossana Paredes—rossanaparedes88@tamu.edu

Grady Zuiderveen—giz5033@psu.edu

Members from developing countries who received awards:

Catherine Lukhoba—clukhoba@yahoo.co.uk

*Zia-ur-Rehman Mashwani—zia.botany@gmail.com

*Olunmi Sharaibi—OSharaibi@ufh.ac.za

Olunmi Wintola—olunmiwintola@yahoo.com

*Zia-ur-Rehman Mashwani and Olunmi Sharaibi were not able to attend.

Submitted by Travel Awardee Rossana Paredes, rossanaparedes88@tamu.edu

The 2018 meeting was a success. I was able to learn from the diverse studies of people-plant relationships that are currently conducted around the world. Also, I had the opportunity to network with ethnobotanists and discuss research interests, methodologies and issues found within the discipline. Thanks to the SEB financial support, I could present my research on TEK dynamism, discuss details with fellows, and receive good feedback. I enjoyed being part of the meeting and I plan to attend the next one!

Finally

At our annual meeting, SEB Council approved an increase in spending for the next year to fund awards for our members. We want to continue investing and supporting our members. Keep your eyes on the website for these new awards.

SOE Honors Gail Wagner

Gail has been an essential figure in SEB for decades. She has been a council member, Secretary, and President two times. She has hosted a meeting and is the ultimate dedicated mentor to many students. Over the years, Gail has offered papers on teaching techniques, plant center piece games, and oh so much more.

In Gail's presentation, she spoke about family: her biological family, academic family, and society family. I highlight this part of her talk because family is the basis of SEB for many of us. Like a family, we care about our members by offering support for employment, research guidelines, mentorship, ethics, and Economic Botany experiences.

Congratulations to Gail for a job well done and for continuing to inspire the child and mentor in each of us.



2019 Committees

I encourage all members to look at the list below and the SEB website to see what committees you might want to join. Members are what make us great. So let us know how you want to be involved.

- Archives: Lisa Offringa
- Auditing: Dan Moerman
- Bylaws: Mike Balick
- Editorial Board: Bob Voeks
- Education & Outreach: Sunshine Brosi
- Endowment: Steve Casper
- Ethics: Letitia McCune
- Executive: Gayle Fritz
- Finance: Wendy Applequist
- Membership: Sunshine Brosi
- Newsletter: Trish Flaster
- Nominations and Awards (and DEB): Steve Casper
- Program and Publicity: Sunshine Brosi
- Publications: Sunshine Brosi (with Bob Voeks)
- Website: Sonia Peter
- Student: Alex O'Neill (with Susanne Masters)
- Klinger Book Award: Brad Bennett
- Schultes Award: Robbie Hart

Student Committee

I want to welcome Santosh to the committee. Here is a little introduction.

Santosh is currently in the drafting phase of his Ph.D. with the Alpine Plant Diversity Research Group at the Kunming Institute of Botany in Yunnan, China. He just completed a research program through the Rufford Foundation, which centered around niche modeling of highly traded medicinal and aromatic plants from Nepal. The highlighted plants include *Neopicrorhiza scrophularifolia*, *Nardostachys grandifolia*, *Dactylorhiza hatagirea*, *Aconitum spicatum*, and *Valeriana jatamansii*. More information can be found here: https://www.rufford.org/projects/santosh_kumar_rana_magar.



2018 Conference Workshops

For several annual meetings we have had Teaching Tuesdays. Here is the list of the workshops and a couple reviews for the 2018 meeting.

Thanks to Annie Virnig and Sonia Peters for finding these great offerings

- *Workshop 1:* Araceli Aguilar-Melendez: Cooking Oaxacan Chili Peppers to ‘Taste’ the Biocultural Gastronomic Diversity of Mexico
- *Workshop 2:* Jonathan Amith: Got Ethnobiology Data? An Introduction to an Ethnobiological Data Management/Publishing Tool and Emerging Data Standard
- *Workshop 3:* Betsabe Castro Escobar: Caribbean Plants that Heal at Touch: Preparing Traditional Rubbing Alcohols and Salves
- *Workshop 4:* Jennifer Helmer: Wild and Wonderful Weeds
- *Workshop 5:* Sharon Bladholm: Interfacing Nature, Science, and Conservation through Art



Bottle of “alcoholado”

An afternoon preparing Caribbean “Alcoholados”

Submitted by: Betsabé D. Castro Escobar, bcastro@berkeley.edu.

During the “Teaching Tuesday” afternoon at the joint meeting of the Society for Economic Botany and the Society of Ethnobiology, there was one workshop with the intention of transporting its participants to the Caribbean to prepare an old botanical remedy. The fragrant and medicinal concoction has been an essential item of Puerto Rican home apothecaries. This secret remedy is rubbing alcohol known as “alcoholados.” Its history dates back to the 16th century, when European explorers crusading the Caribbean encountered the West Indian bay tree or “malagueta” (*Pimenta racemosa*). It’s possible that the plant was also used by Native Indigenous Caribbean people or “Taino” in medicinal and healing practices. Using the bay rum tree leaves, people rubbed their bodies to release the plant’s volatile oils, imitating the smell of an earthy fresh cologne. With time, Puerto Rican “jibaros” or peasants figured out that mixing the fresh leaves of this plant with rum extracts the essential oils of the plant, making a more potent and longer-lasting cologne. But this rubbing alcohol was revered for its refreshing, spiritual, and healing properties. Later on, the rubbing alcohol spread to other Caribbean islands that adopted this practice and expanded its botanical ingredients and healing properties. Similar to Dominican “botellas,” “alcoholados” are made of several plant ingredients that vary from region

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Table display with botanical ingredients for making “alcoholados.”

2018 Conference Workshops

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and personal preference. A standard recipe would be infused with natural plants and essential oils, primarily West Indian bay, eucalyptus, coffee, and tobacco leaves. In other Caribbean islands, added ingredients include patchouli, ginger, sage, peppermint, rue, lemongrass, citrus, and different spices. For hundreds of years, “alcoholados” have been an essential companion of many Caribbean homes for its fresh scent and healing and spiritual properties. Similar to salves, rubbing alcohols are used topically to treat a variety of ailments. Common treatments are for poor blood circulation, arthritis, muscular pain, fungus, insect bites, neuralgia rheumatism, headaches, fevers, and respiratory problems. “Alcoholados” can also serve as natural expectorants for congestion, treating colds, flus, bronchitis, and asthma. Although the traditional preparation of “alcoholados” has decreased among Caribbean homes due to the introduction of modern substitutes, people still keep this tradition alive. If anyone is interested in more information about “alcoholados,” please contact me.

Araceli Aguilar-Melendez: Cooking Oaxacan Chili Peppers to ‘Taste’ the Biocultural Gastronomic Diversity of Mexico

I was lucky to attend this flavorful workshop. Araceli provided many types of sauces, salsa verde, rojo, with chips and guacamole for all. The most unique salsa was the peanut salsa. She took dried red chiles maybe chiles de arbol, and placed them in hot oil and then added them to peanuts and lime cilantro in the blender to mix up this unique salsa.

At the close of the session, she put our names in the proverbial hat and we all won prizes related to making salsas, and we left bellies full and chiles in hand!



Pimenta racemosa (Myrtaceae) – West Indian Bay Tree



Participants of the Caribbean workshop almost ready to prepare their remedies

Education: What to Talk About with Your Students

Submitted by Sunshine Brosi, slbrosi@frostburg.edu

Pie, The Economic Botany Flavor

As the leaves fall, I make pie. I teach my students how to make pie crust. We cut the butter into the dough and talk about the history of pie and the origin of the ingredients. How on earth is this related to ethnobotany? Pie is a dessert that you must sit down for. You need to have a fork and a plate. Cupcakes are made for kids' birthday parties where you can run and ingest sugar at the same time. The handpies of Cornwall, England (Cornish pasty), lower Pennsylvania and Maryland (pocket pies), and West Virginia, USA (pepperoni roll) are woven into our collective mining histories. A whole pie, however, is a perfect vessel for ethnography. Each pie has to be divided into pieces and won't feed too many people so only a few can sit at a time. Each pie slice needs to be carefully eaten with time between bites to savor and talk. A conversation over pie is intimate with natural rhythms of pauses for conversations as the fork is set down between bites. A pie is a perfect thank-you gift. Pies are seasonal and adapt to the strawberries and rhubarb of spring, the blueberries of summer, and the apples of fall (Wolf River has always been my favorite). A pie takes sitting-still time to make: talking over peeling, talking while rolling out the crust, and waiting for the



pie to bake. My mom made the most marvelous pies, especially whenever we had company. My memories are sitting on the front porch in the Kentucky heat savoring a pie and conversations. Pie was also an important part of Thanksgiving and Christmas meals. A beautiful masterpiece to bring out that—even when you were stuffed—you had room for. As a cash-strapped graduate student, I would make pumpkin pies at Thanksgiving to buy my daughter Christmas gifts. I could watch

Executive Team & Council

After a thrilling ballot, the following results for our 2018-2019 Executive Team are:

President: Sunshine Brose (Chair)

President Elect: Mark Nesbitt

Past President: Gayle Fritz

Secretary: Nanci Ross

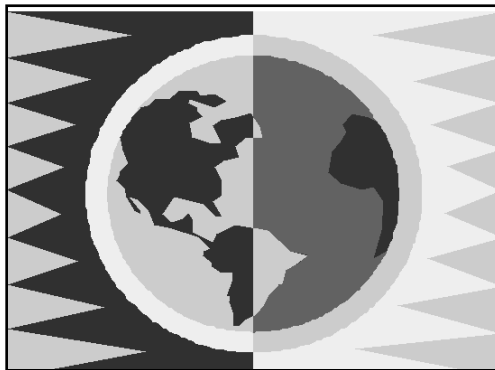
Treasurer: Wendy Applequist

Johan La Parra and Lisa Offringa are our new Council members. They join the current Council members.

Term Expires 2019	Term expires 2020	Term expires 2021
Jillian de Gezelle North Carolina State University Raleigh, NC USA	Narel Paniagua Herbario Nacional de Bolivia La Paz, Bolivia	John de la Parra Harvard University Boston, MA
Zbynek Polesny Faculty of Tropical AgriSciences Czech University of Life Sciences Prague, Czech Republic	Ulysses Paulino de Albuquerque Universidade Federal Rural de Pernambuco Recife, Brazil	Lisa Offringa Nutranext Moss Beach, CA

Non-Voting Council members are Bob Voeks, Editor of the Journal and Trish Flaster, Newsletter Editor

Botanizing the Web



FoodTank <https://foodtank.com/>

October is a national celebration of Farm-to-School programs. Following is an excerpt from their website:

In the U.S. alone, over 42,000 schools are changing their communities with farm-to-school programs, impacting the lives of over 23 million students. And schools and organizations across the world—from Australia to Zambia—are redesigning food education with onsite gardens, educational farms, and nutritious meals.

Bringing locally sourced and fresh food closer to students can help equip them for a healthy and environmentally friendly future. According to the National Farm to School Network, every dollar invested in farm-to-school activities reduces food waste at school, increases a child's fruit and vegetable consumption by more than 40 percent, and even improves test scores. Beyond the school, food education investments multiply, increasing local economic activity and engaging parents—and communities—in healthier eating habits at home.

They highlight various international farmer groups and other salient issues. Happy Browsing!



her and cook—giving her the scraps and a cookie cutter so that she would be entertained. I sold 40 pumpkin pies one Thanksgiving to faculty on campus and was able to pay most of my month's rent. I've been known to make a dozen pot pies at a time on a Saturday for the freezer. I'm just as likely to post a picture of a pie as I am a puppy on social media. I hope I made you hungry.

Editor: I recently read Sally Mann's book, *Hold Still*. While photographing the South she needed a place to stay. She was graciously given a wonderful home, and daily folks would bring food her to eat. Each casserole or pie a few bites taken out and a note saying, we could not finish this—could you help us? Southern hospitality at its best!

So maybe we need a workshop on pie at the 2019 meeting?

Mexican Cooking Workshop

The banquet images were from Letitia McCune



Summer Field School

Anthropology of Food—An Off-the-Beaten-Track 2019 Summer Field School, Gozo, Malta

General Information

Today, food and eating are core subjects in social sciences anywhere. For social and cultural anthropologists, food connects the human body to its ecological, social, and political worlds. While forcing researchers to keep focused on daily life in their studies, food is always more than food. Issues of power, identity, place, politics, economy, social relationships, and so on, are revealed by what we eat, with whom we eat, how, where, and when. Food and eating, moreover, hold a central place in the fieldwork process itself. Anthropologists too must eat. Unfamiliar habits, taste, smell and abilities evoke reflection about roles, norms, positions, and unexpected emotions. The aim of this thematic unit is to collectively explore the different topics, possibilities, and limitations that emerge when doing food-related fieldwork on Gozo, Malta. Whether emerging through a direct focus on a food-related phenomenon, or through the encounter of food habits and cuisine in methods, we'll digest lessons from the field together.

Goals

'Anthropology of Food' is a thematic focus within the Off the Beaten Track summer field school, which offers hands-on fieldwork training on the islet of Gozo, Malta.

- Develop a personal research topic in cooperation with the other participants of the program and even with the other projects (cf. aging, graphic, sensoriums, oral history).
- Enhance your participant observation skills through ethnographic fieldwork.
- Find access to your field, collect and align your primary data.
- Explore the potential of interdisciplinary methods and different ways of representation.
- Contribute to a scientific publication, and/or make your own.

Everyone with a genuine interest in the topic is welcome to apply, no experience is strictly needed. In order to be part of this, please request the application form for the Off-the-Beaten Track program on our website. Please note: it is mandatory to contact the leading researcher beforehand concerning your research ideas.

Examples of Previous Research

- Maltese Bread: A Changing Symbol of the Island's Identity, by Greta Kliever
- Eating in the Real Gozo. Sound, Authenticity, And Identity in Gozitan Restaurants, by Bryce Peake
- Selling Flavor, Selling Fable. The Commodification of Traditional Identity on the Island of Gozo, by Hannah Howard

Program director: Sam Janssen, sam.janssen@xpeditions.be

Leading researcher: Marjan Moris, marjan.moris@xpeditions.be

June 5 - June 24, 2019

July 2 - July 21, 2019

July 29 - August 17, 2019

Program Cost 3,250 euros; Discounts and scholarships are available.

Application & information: www.anthropologyfieldschool.org

2019 SEB Meeting

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Fort Ancient, Sun Watch Village, the Edge of Appalachia, the Whitewater Shaker Village, the Cincinnati Garden Center, and the world-famous Cincinnati Zoo and Botanical Garden (featuring Fiona the Hippo!). Just for fun, there will be a pub crawl to several of the outstanding local microbreweries, a trip to the ball park to see the Reds play and a chance to take in a soccer match with the red-hot Football Club Cincinnati.

Transportation Details

Airlines to CVG include: Delta, American, United, Air Canada, etc. with direct flights to Europe, Canada, and most major cities in the United States.

Budget airlines include: Southwest, Frontier, and Allegiant

Bus lines: Megabus and Greyhound

Rail service: Amtrak



Housing Options:

Standard dormitory—\$30 per night/person

Double occupancy, meals—\$30/day/person

En Suite dormitory—\$35/night/person, double occupancy

Hotels (all within one block of campus):

- Kingsgate Marriott—\$136/night, single/double occupancy
- Fairfield Inn—\$120/night, single/double occupancy, breakfast included
- Hampton Inn—\$158/night, single/double occupancy, breakfast included

For a final teaser, Cincinnati was recently listed by *The New York Times* as one of the top 10 “must visit” places in THE WORLD!! So come and see what is shaking in Cincinnati!



Interview with Dr. Gary Paul Nabhan, 2018 DEB

Submitted by Susanne McMasters, Student Committee, info@susannemasters.com

He isn't keeping count of his publications, thinks skipping out on school contributed to his progress, and speaks of individuals as inspirations to his research. Gary is an ethnobotanist whose landscape of plants is populated with people he values. His work extends beyond recording of ethnobotanical knowledge to its revival. Here are some more insights into our Distinguished Economic Botanist for 2018.

In his DEB speech at the Society for Economic Botany and Society of Ethnobiology joint meeting in Madison, Wisconsin 2018, Gary questioned how ethnobotany and ethnobotanists can contribute to a positive trajectory. We can move on from documenting imperiled natural resources to train people in Traditional Ecological Knowledge and resource science so that they are the front-line responder to their environmental issues. We can direct money into a community rather than spending it on the expense of dropping experts in. Gary emphasized the importance of recognizing not just restoration ecology, but also restoration economy, and he is a key leader in Slow Money systems. His has a dualistic approach rather than privileging conservation of species over people.

- While many ethnobotanists and anthropologists have looked further afield and conducted research abroad, your Ph.D. was focused on your doorstep. What prompted you to conduct your Ph.D. research so close to home?

Gary: *“I'm of Arab descent and I was really interested in how people adapt their agriculture and food systems to water scarcity and other constraints in desert climates. So I did my research at the closest desert farms to where I was going to school. I wanted to have daily or weekly contact rather than being dropped into an area I didn't have a relationship with.”*

- Rainforests attract attention because of their charismatic species and the number of species they can sustain, and feature heavily in the mythology of “medicine man” finding medicinal plants in the rainforest that is a prominent portrayal of ethnobotany. In contrast, arid lands attract less attention. What motivates you to study plants that grow in arid lands?

Gary: *“I think that I had a lot of friends working in the rainforest at that time. It was the first big push of ethnobotany and ecology funding in rainforests. I was aware that there were desert*

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Interview with Dr. Gary Paul Nabhan, 2018 DEB

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arid plants that had unique chemicals related to their adaptations to desert conditions, plants that had aromatic and medicinal properties. Also, deserts can be high in endemism. They might not have high species diversity but because of limited distribution, the species that are there can be at risk. And I thought that was worthy of study and observation. Plus, I get claustrophobic in forests. All that green around you. In a desert, you never have to worry about all that green.”

- Do you think arid lands merit more attention on a broader scale than they get?

Gary: “Yes. Unfortunately. Arid lands research is a growth industry given climate change. We are making a lot of the world hotter and dryer and we better recognize successful techniques because we are going to have to deal with these conditions.”

- Of all your notable achievements, which has been the most significant to you?

Gary: “Never finishing high school and playing hooky a lot in the Indiana dunes where I got to spend time with plants. It really opened my eyes and taste buds. I’m not kidding when I think our informal education is as important as our formal education. And we don’t let kids have enough time in nature now. I think a lot of us were recruited to ethnobotany because we like to get paid for doing what we loved most when we were kids. Also, I have to say that thinking about your own achievements doesn’t get you very far because you get most of your inspiration from the awesome people around you. I wish as much recognition that I have had went to them. I wish we gave more awards to communities rather than individuals.”

- Have you got a muse?

Gary: “I have the voices of tribal elders and older voices in ethnobotany that I think about a lot. I think we learn a lot by apprenticeship to elders and mentors. And I think the best plant people I know not only have excellent formal education but were humble enough to think about learning from others. For example, if I am writing about basketry, I should be mentored by someone who has made baskets all their life. The mentorship lunch at the SEB is great. That interaction with a mentor is key, and fewer and fewer young people have that available to them. I also think that plants are mentors. I have written books about a single plant, and trying to get into their state of being. That is why I recently wrote a book about mesquite. I love that intellectual exercise; it is really an emotional exercise too. Trying to understand the sense of place that is embedded in another organism.”

- What challenges have you encountered in your work?

Gary: “My own limitations. I think there is challenge in wanting to make commitment to a community; people that you care about and then have to keep applying for funding to maintain it. It is difficult to help communities through challenges that they are facing. I really respect people that are very much multilingual. I speak Spanish and some Italian and a little bit of two native languages but it is a steep learning curve.”

- In ‘Food, Genes and Culture’ you challenge popular diet fads with a nuanced approach integrating genetics and culture. What initiated your approach to the topic of diet?

Gary: “Having a Tohono O’odahm friend in a diabetes prevention program die at age 35 of diabetes-related issues. You take very seriously that he was more vulnerable to the foods that we were eating. Whether epigenetic or genetic predisposition. I wanted to understand it because I was in such remorse for losing a friend. I tried to learn and to unpack and understand what happened. It is a response using what intellectual skills I have to try and understand something so that we might avoid it in the future.”

- To date how many books have you published? And how many academic papers?

Gary: “I don’t keep track. Someone told me. I really don’t know.”

- Currently academia values journal articles more than books. What do you think are the benefits of writing books?

Gary: “I think a book has more staying power. It can embody complexity more than the typical journal article. Yet I have learnt so much from reading journal articles in ethnobotany that I feel I should take the time to return to people I have benefitted from. I think all scholars should write in both forms—journal articles, and books or podcasts or blogs. There isn’t only one way to validly communicate our work to society. Public funds pay for our research. I think we have an obligation to reach people who don’t read academic journals to teach them the value of our studies.”

- For you, what plant best symbolizes the taste of Arizona?

Gary: “Mesquite [Prosopis spp]. Because it has a pretty wide distribution there. It has healing power; it has this great aroma, its savory nuanced flavor.”

Gary also added “I’ve written about Mexican oregano [Lippia graveolens] because it embodies terroir because all the oils are in its leaves to reduce transpiration and damage by herbivores in its environment. But we take it and use it because it has this incredible intensity of flavor to us.”

- You have done a lot of work not only recording but also highlighting place-based foods in North America. What do you feel are the most effective ways of reinvigorating interest in these foods?

Gary: “Great American Picnics where slow food and chefs collaborated for a while. We just said to folks bring the most unique foods of your place to the chefs and let them do anything they want with it. I think it is a wonderful way to remind people that each place on this continent has different tastes, textures, and colors whether that is salmon and buckleberries in the northwest, or maple syrup in Vermont, that are never as good when served in other places. When I travel I just want an opportunity to taste what is from here. My point is that I really think having community feasts where we take pride in the unique foods of our place is one of the best feedback loops we can encourage.”

- You are considered a seed-saving expert. Can you describe some seeds that have been significant to you?

Gary: “There is a Nabhan date in Oman named for my family. Joke on me. I have worked with heirloom vegetables, fruits, and seeds for so long and I didn’t even know till then there was one named for my family.”



Applied Ethnobiology

Special Session for Applied (Non-Academic) Ethnobiology & Ethnobotany Scholars & Practitioners
Submitted by: Trish Flaster, tflastersprint@earthlink.net

The first annual Networking Social for Applied (Non-Academic) Ethnobiology and Ethnobotany Scholars and Practitioners was held at the 2018 SEB-SoE joint meeting in Madison. The event was well-attended beyond the organizers' expectations. Students and early, mid- and late-career professionals filled the room and spilled out the door.

The "social" began with a panel of ethnobiologists/ethnobotanists from diverse fields (e.g., botany, anthropology, geography, medicine, nutrition, agriculture, natural products development) briefly describing their work experiences; the knowledge, skills and the cross-over skills in natural-social sciences they bring to their projects; and where they see opportunities for the future. Following the panel introductions, attendees broke into small networking groups to exchange ideas, build connections, and foster collaborations. Topics in breakout groups covered the variety of fields and opportunities open to ethnobiologists/ethnobotanists: food security and sovereignty, natural and cultural resource management and historic preservation, climate change resilience and adaptation, environmental futures, nutrition, public health, medicine (e.g., alternative cancer therapies), natural product development and sustainability, wildfire prevention, consulting for federal agencies (USAID, US Forestry Service, and the National Park Service), authoring field guides, and more.

This session was sponsored by Lisa Gollin (lxgollin@hawaii.edu) and myself with help from Cissy Fowler (cynthiafowler@gmail.com). Attendees enthusiastically called for us to make this an annual event. To further develop and expand the networking event, please let us know your interests and what you want to learn and accomplish at the 2019 session.



Research Ethics and Experiences

Submitted by Letitia M. McCune, Ethics Committee Chair, including Rainer Bussmann, Michael Gilmore, and Heike Vibrans (ethics committee)

During the SEB Annual Meeting in Kentucky, a presentation on methods of Intellectual Property Rights (IPR) protection was conducted, including ways to protect IPR upon plant collection, herbarium deposit, seed bank deposit, and material transfer. Following a brief description of international agreements and the clearinghouse mechanism of the Nagoya Protocol, a query was put to the audience as to what experiences they have had with permits or agreements, and what resources they would recommend for students and the membership at large. Understanding that the biggest asset of our society is the collected knowledge of our members, the Ethics Committee submits and addresses some of the responses below. If you have further experiences and queries to share, please contact letitiamccune@gmail.com. Attendee's comments:

1. Regarding permits in Mexico, one researcher finds that "Mexican collectors =OK; US imports=Difficult; Research agreements=Verbal."
 2. Unfortunately, it was observed that before Nagoya went into effect, permits were obtained through company contacts and there was a rush for them to complete before Nagoya went through. Because there was a concern that access would be denied, the companies fled with seeds before Nagoya was enacted.
 3. One member's experiences suggest that benefit sharing could include: Cross training of students; work with U.S. embassies in host countries; sharing protocols and educational resources with partners in developing countries; giving back by helping make local ethnobotanical gardens; and giving back by creating publications in the local language.
- Another member states that working with U.S. embassies can be problematic.
4. It is recognized that there is an amazing seed bank at the university in Kunming, China (Yunnan).
 5. What should SEB request journal editors enforce as condition for peer review + publication? e.g., author declares permit + agencies? This can be an inter-disciplinary issue. It has been suggested that IRB protocols (which vary greatly) and permit numbers are unnecessary, but declarations are necessary that SEB/ISE's standards on Code of Ethics have been followed, including prior informed consent and benefit sharing, as well as locations of voucher specimen deposits.
 6. Organizers of the Alaska Plants as Foods Medicine Symposium are putting together a guide for ethically harvesting plants in Alaska.
 7. "Document detailed use/preparation/and specific characters for use when available, then agreement for keeping information protected and details of what may be shared and how." We strongly feel the agreements come before the detailed documentation of use, etc. Prior informed consent is critical.
 8. One attendee would like SEB to help with conference permits and obtaining the USA Visa. Unfortunately, especially in today's political climate, this is difficult. Please see SEB's statement against the travel ban in this newsletter.
 9. "The most important means of assistance has been the invaluable mentorship of other SEB members."
 10. "We know of a company that sells seeds from all over the world. Their 'naturalist' collects seeds and never recognizes Indigenous Peoples or countries of origin. It looks very unethical. What can we do?" The first thing is not to buy from them. If there's evidence, collect it and give information to USDA or other relevant authorities.
 11. "Are there IRBs/External Review Boards available outside of an academic setting? For example, for a non-profit." In general, the answer is no. Unfortunately, many university review boards focus on the issues of a medical or clinical nature. Getting collaboration from a researcher from a university with a long history of similar projects may help in the process.
 12. One attendee asked for information on respectfully asking permission to community leaders to conduct work in the community and surrounding areas. The answer is that every community and culture can be different. Some have been "researched to death" and have

Research Ethics and Experiences

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set protocols in place, contracts, lawyers, etc. Getting to know those who have done research in the area will help you learn what is expected as well as start developing a relationship with the community.

13. Figure out how to stop people from making grandiose promises to local/indigenous groups regarding research. This situation makes it very hard for those to trust researchers who follow. Better to under-promise and over-deliver than create false hope." This is an excellent example of experience knowledge that can benefit the membership. As with any contract, one has to know what one can deliver. Let's hope some learn from this statement. If SEB were to develop a standard protocol, it would be difficult to create a "one size fits all." A researcher has to fulfill their obligations and follow the Code of Ethics and standard forms of access and benefit sharing.
14. One attendee emphasized that local scientific collaborators are essential. Always have upfront benefits for local communities and collaborating institutions.
15. "If you marry into a traditional culture from another country and traditional knowledge is passed down to you as part of lineage rules of culture, then what permits/agreements do you need in order to use that information?" (A real life current situation of a member.) It seems you would have to fulfill the requirements from both sides. Another SEB member living this scenario emphasizes that the burden is actually greater than for an outsider as you now have the responsibility to recover traditional practices/knowledge and pass it to family and community but additionally are the weak link in defenses against exploitation of the knowledge by unscrupulous researchers. This means being the liaison officer with the community against such researchers as well as being leery of your own Ph.D. students and those associated with your children. The positive side is being in the position to advocate for indigenous rights and a strong healthy image of indigenous communities.
16. If someone purchases plant material from a supplier in another country (via Internet, contacts, etc., assuming without permits) to give to another entity, is that unethical?" Provided the material is freely available in commerce it can actually be passed on without restriction. Of course, if somebody would know that the material is illegal in some way or other then the import itself would not be legal. However, if the material is directly linked to a culture or cultural uses and a subsequent product would be created that limits the cultural use of that material (e.g., plant variety

certificate, patents on medicinal use) then it would be wise to adequately document the exchange and encourage access and benefit sharing agreements.

In addition to this comprehensive work the committee also wrote the Code of Conduct requested by the 2017 council. The Code can be found at <http://www.econbot.org/index.php?module=content&type=user&func=view&pid=129> and here it is.

Society for Economic Botany Code of Conduct for Meetings and Other Functions

All members of the Society for Economic Botany (or attendees of the Society's functions) are required to follow the Society's Code of Conduct for Meetings. This includes, but is not limited to, any Society conference, other meeting, function, event, or professional activity. The behavior of the Society's members reflects on the reputation of the Society and should create a safe and professional atmosphere free of harassment, stalking, threats, abusive conduct, and bullying whether physical or verbal. Any member or attendee participating in these unwanted behaviors risks expulsion (without refund) from the event and the Society as well as further consequences, including the involvement of local law enforcement.

Society members (and attendees of Society's functions) are expected to:

- Not harass another based on race, national origin, religion, gender, sexual orientation, gender identity or expression, civil union or marital status, age, citizenship status, disability, pregnancy, ancestry, or medical condition.
- Not sexually harass another in the form of unwanted behavior of a sexual nature, whether physical or verbal that includes, but is not limited to, unwelcome sexual advances or requests for sexual favors.
- Present research and statements on other cultures or individuals in a respectful manner. Critique presentations and research with a focus on the presentation and work, not on the individual.
- Not purposefully disrupt oral and poster presentations.
- Not record or transmit audio, video, or images of oral or poster presentations without author approval.
- Speak up if a member (or event attendee) has done or is doing something that is against the Society's Code of Conduct or Guidelines on Ethics and understand that retaliation for complaints will not be tolerated.*

*Report activity contrary to these codes by contacting a Society officer, starting with the president (contact information can be found on the society website or at the

registration desk at meetings). Contact another Society officer if the first attempt is unsuccessful. Understand that the first step will be two Society officers approaching the accused and requesting the offending behavior to stop and that subsequent steps will be conducted as necessary. Know that confidentiality will be maintained if possible and that local police should be contacted for threats to public safety and criminal acts.

ICBG Ethics

Here is an added note on news about our former DEB, Doel Soejarto. The article elaborates on the ICBG program setup of the Vietnam and Laos project, benefit-sharing goals incorporated into its structure, the permitting/consent processes needed and the economic development and other benefit-sharing projects that they did. There was experimentation with a lot of different benefit-sharing methods, and close collaboration with the institutions in Vietnam and Laos that were involved.

D.D. Soejarto et al. "Studies on Biodiversity of Vietnam and Laos" 1998-2005: Examining the Impact. *J Nat Prod.* 2006;69(3):473-81.



Jason Gullo Mullins (South Eastern Cherokee)



An Interesting Meeting

National Summit for Gateway Communities
Date/location: Dec. 11-13, 2018
National Conservation Training Center
698 Conservation Way
Shepherdstown, WV 25443

What Will You Learn?

This three-day summit—December 11-13, 2018—in Shepherdstown, WV, will bring together gateway communities, their partners and experts from conservation, community and economic development, recreation and tourism, planning, and other creative fields to highlight success stories and lessons learned while engaging in robust discussions that lead to specific actions for invigorating the future of gateway and rural communities.

What Are Gateway Communities?

Communities that border publicly owned lands, such as national and state parks and forests, and that often struggle to balance the need for economic growth with the desire to protect their natural ecosystems, landscapes, and cultural heritage.

This group has also worked with the Appalachian Regional Commission and the National Endowment for the Arts to develop the Appalachian Gateway Communities Initiative. Since 2007, The Conservation Fund's Conservation Leadership Network, with generous support from the Appalachian Regional Commission (ARC) and National Endowment for the Arts (NEA), has led the Appalachian Gateway Communities Initiative (AGCI) to expand tourism, the arts, and other economic development opportunities for Appalachia's gateway communities. In May 2017, seven teams from Georgia, North Carolina, Ohio, Tennessee, Virginia, and West Virginia attended a regional workshop in Ringgold, GA. They each crafted an action plan that focused on the unique Appalachian assets that make their community an appealing place to live, work, and recreate. Read the case studies below to learn how three gateway communities from Lewis County, Kentucky, Nicholas County, West Virginia, Ohio Hill Country, Ohio, Muscle Shoals, Alabama, and Hays, Virginia, have strengthened their development efforts through these regional workshops.

What topics will be covered?

Download the draft agenda at https://www.conservationfund.org/images/cln_events-resources/Summit_-_Promo_Agenda_Draft_10-4-18.pdf

Program Features:

- Models for economic vitality
- Trends, opportunities, and impacts associated with tourism and asset-based economic development
- Strategies for capacity building

Publications

With their exotic flowers and lush foliage, orchids are often considered the quintessential tropical plant, but as a recent publication from the NYBG Press demonstrates, they are also native to the northeastern United States. Orchids are among the 27 plant families that are now available in the third installment of treatments released as part of the *New Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, by Robert F. C. Naczi, Ph.D. and Collaborators, a multi-year publishing project to document the vast diversity of plant species found in all or parts of 22 states and five Canadian provinces.

The family treatments, which incorporate the latest research and include the conservation status of all native species, have been published as individual, downloadable PDFs that can be viewed on a variety of devices such as a desktop computer, tablet, or smartphone.

Other well-known or important plant families in the third annual installment include geraniums, honeysuckles, birches, and water lilies.

To read the full press release, go to: <https://www.nybg.org/content/uploads/2018/10/NYBG-Press-New-Manual-of-Vascular-Plants-2018.pdf>

- Success stories, challenges, and possibilities from public land partners and community leaders
- Networking and action discussions focused towards the future

Speakers:

- Vicki Christiansen, Acting Chief, US Forest Service
- Anthony Duncan, International Mountain Bicycling Association (IMBA)
- Ted Eubanks, Fermata, Inc.
- Mark Falzone, Scenic America
- Carrie Hamblen, Las Cruces Green Chamber of Commerce
- Nikki Haskett, Acting Assistant Director, BLM National Conservation Lands and Community Partnerships
- John Horsley, Consultant and Former Executive Director, American Association of State Highway and Transportation Officials (AASHTO)
- Ed McMahon, Urban Land Institute
- Abbi Peters, PA Wilds Center for Entrepreneurship
- Linda Walker, Chief, NPS Visitor Services and Communications
- Angelina Yost, Program Lead, USFWS Urban Wildlife Conservation Program

Jobs

Position: Full-time botanist

Tennessee Natural Heritage Program. This position will assist with the division's efforts to protect and conserve native plant species while serving as the division's liaison with the U.S. Fish and Wildlife Service by coordinating endangered, threatened, and at-risk plant species recovery projects and the state's ginseng program. The position will report to the Natural Heritage Program Manager in the Bureau of Parks and Conservation Division of Natural Areas. The position is based in Nashville, Tennessee, and may require some overnight travel. **Tennessee Dept. of Environment & Conservation TDEC-Environmental Consultant 3 (Natural Heritage Botanist)**

Division of Natural Areas

<https://www.tn.gov/environment/program-areas/na-natural-areas.html>

Annual Salary Range: \$56,832 – \$90,901

Duties and Essential Functions

- Design, conduct and analyze plant conservation projects, using surveys, monitoring and basic conservation biology research.
- Assist with the review and compilation of the state's rare plant list, the maintenance of plant species and natural community records in the natural heritage database, and the ecological restoration and management of rare plant species habitats.
- Conduct field work and plant conservation projects in difficult terrain or habitat.
- Write grant proposals and conduct grant project management.
- Guide the assessment and ranking techniques process as it applies to the rare flora of a specific region.
 - Communicate with a variety of conservation partners and maintain excellent working relationships. Serve as a resource of information for these business partners.
- Utilize working knowledge of Geographic Information Systems (GIS) mapping software and Global Positioning System (GPS) units.
- Operate various types of equipment used for plant conservation.
 - Conduct written and verbal public outreach related to plant conservation including publishing articles, serving as a guest speaker to external stakeholders, or partnering with specific Tennessee State Parks to provide public interpretive programs.

Competencies

- Working knowledge of the ecological concepts and flora of the Eastern United States,

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Jobs

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- Endangered Species Act, Lacey Act, CITES, and related laws.
- Familiar with conservation issues in Tennessee or the region.
- Experience with assessment and ranking techniques applied to the rare flora of a state or region, statistical methods and the display of data and analytical results, and databases used to track rare species locations.
- Excellent attention to detail and ability to organize complex projects, data, files, and records.
- Strong communication skills and the ability to write technical reports and correspondence.
- Experience guiding or implementing habitat management.
- Comfortable using Microsoft Office programs including Word, Excel, Access, and PowerPoint.

Minimum Qualifications

Education and Experience: Graduation from an accredited college or university with a bachelor's degree in environmental science, physical sciences (e.g. physics, chemistry, geology, meteorology), ecology, sustainability or applied science in sustainability, life sciences (e.g. biology, microbiology, health physics or biophysics), environmental health, pre-medicine, engineering or other acceptable science or natural resource related field. Five years of full-time professional environmental program, natural resource conservation work. Graduate in acceptable science or natural resource related field may be substituted for the required experience, on a year-for-year basis, to a maximum of two years (24 semester hours is equivalent to one year).

Application

The position opens on October 31, 2018. All interested candidates should submit applications via the Tennessee Department of Human Resources for the position TDEC-Environmental Consultant 3 at <http://agency.governmentjobs.com/tennessee/default.cfm>.

David Lincicome, Manager

Natural Heritage Program,
Division of Natural Areas
William R. Snodgrass Tennessee Tower, 2nd Floor
312 Rosa L. Parks Avenue, Nashville, TN 37243
p. 615-532-0439 c. 615-289-4264
david.lincicome@tn.gov
www.tn.gov/environment/natural-areas

Position: Unigen Research Associate

Location: Tacoma, WA

Company Overview:

Unigen a privately held affiliation of companies. The shared mission is to "Bring the best of nature to humankind." In addition to Unigen, the family comprises ECONET, Univera, NatureTech, and Aloe Corp. Unigen's specific mission is to discover, develop, patent, manufacture, and commercialize functional natural products that provide meaningful, clinically proven, health and wellness benefits. Unigen commercializes its discoveries through license and supply arrangements with commercial partners that possess distribution and marketing capability in each of Unigen's target markets—dietary supplements, cosmetic and personal care products, and prescription medical foods and herbal medicines. The differentiating features that Unigen provides its commercial partners are patent protection, highly credible scientific support, including human clinical validation, and reliable GMP manufacture.

Summary

Under general supervision of Staff Scientists, assist scientists and other technicians in the performance of laboratory and investigative procedures by performing, on novel compounds, a variety of routine experimental techniques such as extraction, isolation, purification and quantification. Collect, verify, record, and compile data and information in support of research. In addition, tasks include basic lab maintenance tasks, such as organizing and maintaining inventories, maintaining equipment, and place purchase/repair/maintenance orders and follow them up.

Duties and Responsibilities

- Participates in multiple projects and is expected to carry out a variety of tasks including
 - Organize and track samples from the plant library collections including entering data, bar-coding, plant grinding and maintaining the database
 - Conduct raw material extraction from plant species with either aqueous or organic solvents by using various extractors
 - Perform sample preparation and transfer the sample into micro-titer plates for biological assay evaluation
 - Carry on solvent evaporation process using rotary-evaporators or aqueous solution concentration using freeze drying process

- Record and process data according to specified protocols
- Participate in designing experimental study and following the conditions and protocols that will provide scientists with the information required
- Assist in separation and purification to use HPLC conditions including column, mobile phase and ingredient linearity selection
- Conduct high through-put purification using HTP instrumentation as needed
- Responsible for the lab maintenance, cleaning and ordering lab supplies
- Monitor laboratory work to ensure compliance with established standards
- Provide technical support and services for scientists as required
- Required to lift heavy supplies and/or equipment
- Perform other miscellaneous duties as required

Qualifications and Experience

- Typically requires an associate's degree in analytical or organic chemistry or bachelor's degree in chemistry and biology related areas
- Prefer two years of experience in a chemistry or related scientific laboratory
- Considerable knowledge of isolation and purification in a research setting, familiar with modern technology and instrumentation of extraction, separation and purification
- Hands-on experience following experimental protocols and conducting experiments for research studies under the guidance from a Senior or Staff Scientist
- Ability to analyze the results of research experiments and keep current, accurate and complete records
- Ability to apply deductive reasoning and problem solving techniques to situation and willingness to learn new laboratory procedures
- Good communication skills
- Ability to work independently and as part of a team

To Be Considered:

If you meet these qualifications, please send a cover letter, resume, and salary history and/or requirements to respond to this posting. Salary depends on experience and qualifications. There will be a continuous review of applicants until position is filled.

Please no calls or walk-ins. Unigen is an Equal Opportunity Employer.

Bioneers

I just attended the 2018 Bioneers annual meeting in San Rafael, CA. It always amazes me that other SEB members are not here as it is all about community Indigenous issues, environmental justice, social issues, and creative solutions. Keynote talks range from Black Lives Matter founder Patrisse Cullors to Alex Eaton, Co-Founder of Sistema.bio, a social business addressing climate change, food security, and poverty around the world by providing technology development, training, and financing of sustainable waste-to-resources infrastructure for small farmers.

One of the Keynote Speakers was Google Earth Founder Rebecca Moore. Her presentation was of course amazing, highlighting all the ecological issues they are monitoring. What was important about her presentation for SEB members was that there are many data sets they have and they are available, if you ask.

Lyla June is a poet, musician, anthropologist, educator, public speaker, and community organizer of Diné, Cheyenne and European lineages with a message of personal, collective, and ecological healing. She blends studies in Human Ecology and began her talk by first allowing the Ohlone and Miwok nations to welcome us and then did a rap song on human rights. Also, the Ceibo Alliance, whose leaders listed below, work tirelessly to build a united indigenous movement for cultural survival and territorial protection in the western Amazon.

Hernan Payaguaje, from the Siekopai community of San Pablo on the Aguarico River, comes from a long lineage of healers. One of the first of his people to attend university, he is a founding member and Executive Director of the pan-tribal frontline Indigenous group, the Ceibo Alliance.

Emergildo Criollo, a member of the Kofán nation whose people and family suffered horrific tragedy as a result of the Texaco oil company's devastation of their ancestral lands, co-founded the Ceibo Alliance along with members of three other indigenous nations.

Nemonte Nenquimo, raised in the traditional Waorani community of Nemonpare in Ecuador, is one of the founding members of the indigenous organization Ceibo Alliance, which works to defend Indigenous people's lands and rights in the Ecuadorian Amazon region.

Alicia Salazar, born on the Putumayo River on the Ecuador/Colombia border, in the ancestral territory of her people, the Siona, emerged as a leader in her tribe's resistance to the predations of oil companies. She is the Ceibo Alliance's General Coordinator.

Hernan



Emergildo



Bioneers

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Nemonte



Alicia

The breakout sessions were varied, but there is always a strong Indigenous track with panels made of elders and Native American activists. I listened to a great panel on Allies, how to partner with native folks. The panel was Executive Director Mitch Anderson, Amazon Frontlines and Hernon Payaguaje, Ceibo Alliance working on many issues for Indigenous right and water.

May Boeve is the Executive Director of 350.org, an international climate change campaign whose creative communications, organizing, and mass mobilizations strive to generate the sense of urgency required to tackle the climate crisis. Is working with Clayton Thomas-Müller (Mathias Colomb Cree/aka Pukatawagan), currently the “Stop it at the Source” campaigner with 350.org, is an award-winning Winnipeg, Canada-based Indigenous Rights/Climate Justice activist and media producer with 16+ years of experience organizing.

Hilary Giovale is a 9th generation American settler of Scots-Irish and Scandinavian descent whose work is shaped by her relationships with Indigenous people and worldviews and who is committed to healing historical divides working with Edgar Villanueva (Lumbee), a nationally recognized expert on social justice philanthropy, currently serves as Chair of Native Americans in Philanthropy and as Vice President of the Schott Foundation for Public Education in New York City.

Their stories were our stories and besides paying attention to the perception of our intentions and was also to make sure we were not tourists dropping into a project for a few days, but working together to build these successful alliance as it takes years to build a trusting relationship.

Finally Native Americans spoke on Blood Memory. Ilarion Mercurieff, who served his people, the Bering Sea's Unangan (Aleut) and Anita Sanchez, Ph.D., an Indigenous and Latina author, trainer, and speaker who is passionate about visionary leadership, indigenous wisdom, and the empowerment of women, works on a wide range of cultural transformation, diversity and inclusion projects were the two elders who comments touched my soul. Illerian said the longest journey is from the head to the heart and back to the head. A lesson we all need to remember in all our activities

Ginseng in 2018: Panel

Wisconsin is world renowned for its American ginseng, *Panax quinquefolius* L. In an effort to highlight our history and the importance of plants in our economy, there was a ginseng panel consisting of local regulators, the Menominee Tribe who are the only American Natives to have a sustainable ginseng export business, and the Hsu family, the largest Wisconsin commercial business since 1974. This was a friendly and informative panel to differentiate the regulations, State versus Native Tribe, and the sharing of herbal medicine by founding owner Paul Hsu. Ginseng is so important to Wisconsin's economy that they have a marketing team to assist collectors, companies, etc. This team was also part of the panel. American ginseng is a prized commodity for Korea, China, etc., who are the major consumers.

Here are some questions we shared:

- Why is the harvest of wild ginseng regulated in Wisconsin, even the harvest of ginseng on private land?
- What other wild ginseng related activities are regulated in Wisconsin?
- How much wild Wisconsin ginseng is harvested for the purpose of sale in Wisconsin?
- Where can I find Wisconsin wild ginseng regulations and whom can I contact with questions?
- What to do if I suspect illegal harvest of wild ginseng from my woodland (or from public land)?

What does the Ginseng Board of Wisconsin do?

The Ginseng Board of Wisconsin was established in 1986 as a nonprofit organization representing all Wisconsin ginseng growers. There are approximately 200 ginseng growers in the state. The Ginseng Board of Wisconsin is funded through a mandatory assessment of ginseng acreage under shade. The Ginseng Board of Wisconsin is managed by an elected board of seven ginseng producers. The board functions under a marketing order managed by the Wisconsin Department of Agriculture, Trade & Consumer Protection. Our purpose is research, national and international marketing, new product development, and education.

How much cultivated ginseng is produced in the United States?

Today, Wisconsin ginseng farmers account for 95 percent of the total cultivated ginseng production of the United States. This represents about one million pounds of cultivated ginseng.

Why is Wisconsin ginseng the best?

Wisconsin ginseng is known as the highest-quality *Panax quinquefolius* in the world and has the reputation for the best quality in the world. Our growers only grow ginseng one time on a piece of

land. The United States has strict pesticide usage standards for agricultural products. All Wisconsin-grown American ginseng satisfies rigorous safety tests established by the U.S. Environmental Protection Agency (EPA). Additionally, Wisconsin ginseng contains very high ginsenoside (the active ingredient) levels. Wisconsin Ginseng also offers the highly desired bittersweet taste. This unique taste gives Wisconsin ginseng the reputation for the best quality in the world.

What medical research has been conducted on ginseng?

The Ginseng Board of Wisconsin actively supports medical research on Wisconsin ginseng to help others understand its health benefits. Ginseng has been used traditionally for a number of health concerns, including immune system support and blood sugar



support. Most recently, in a collaborative phase III clinical trial, researchers at the North Central Cancer Treatment Group, and the Mayo Clinic in Rochester, Minn., completed an eight-week study to evaluate the impact of Wisconsin ginseng on the fatigue levels of cancer patients. After eight weeks, the group who took Wisconsin ginseng showed improvements in overall energy levels, reported higher vitality levels, and less interference with activity due to fatigue. Participants reported a 20-point increase in energy levels, which is statistically significant.* We will begin another study on cancer and fatigue in the next few months. And we are looking to expand our studies into other areas of health as well.

How does the Ginseng Board of Wisconsin promote Wisconsin ginseng to international markets?

The Ginseng Board actively promotes Wisconsin ginseng to overseas markets, primarily in Asia. The Chinese culture highly prizes Wisconsin ginseng.

Other areas where we are focusing our efforts are Taiwan, Singapore, Malaysia, and Vietnam. We are continually looking for new markets to share our story of this unique product. The GBW takes overseas trips to help promote the crop. Also, we have in-country marketing reps who also help to spread the message.

How does the Ginseng Board support growers?

Our mission is to help promote, educate, and support research on Wisconsin ginseng. As part of this mission, we actively engage in activities to help growers as well. One of our key focuses is chemical research. We work with Michigan State University, specifically Dr. Mary Hausbeck, who conducts research on plant health. The work that Dr. Hausbeck and her team conducts is very valuable as it helps growers understand how to apply chemicals to the plants to reduce plant disease and end up with a healthy crop. The work is presented annually at our Spring Grower's meeting, which is very well attended. The growers receive a binder of information containing all of the pesticide and fungicide labels and information about the research that was conducted in the previous year. We are currently working on materials that will provide new growers with information about how to start a ginseng garden.

What are some of the key challenges faced by the ginseng industry?

Chinese Tariffs

With the new tariff, we are now looking at about a 30% fee (including the value added tax and tariff that was previously in place). While Wisconsin ginseng is seen as a premium, the additional tariff combined with previous fees will soon price us out of the market. Chinese buyers may switch purchases to Canadian-American ginseng.

- Fraudulent products/mislabeling
- There has been a historic problem with Chinese companies exporting Chinese ginseng to the United States and labeling it as Wisconsin ginseng or as a product of the USA. The Ginseng Board of Wisconsin actively works to combat this fraud, however, it is a huge uphill battle, especially with our limited resources.
- Domestic market
- Very little Wisconsin ginseng is consumed domestically—it is a hidden gem
- Labor
- The crop requires hands in the field for harvesting and picking of the berries. This is very laborious work and some growers have a difficult time hiring help.

Ginseng in 2018: Field Trip

Submitted by: Bob Bye, bye.robort@gmail.com

After boarding the rental yellow school bus on the University of Wisconsin Madison campus, the herbal contingent of the Society for Economic Botany bounced northward through rolling hills of pasture, grain, and irrigated fields...and we arrived in Wausau along the Wisconsin River and the county seat of Marathon County. Here the open fields were interspersed among the blocks of secondary hardwood forests of maple, ash, and poplar.

Our guides, Trish Flaster and David Spooner, introduced our group of about 20 SEB members and two SEB Ginseng panel presenters who were conservation officers from of the Menominee Tribe to Paul Hsu, founder of Hsu's Ginseng Enterprises, HEG, which has been growing, selling, and exporting ginseng (*Panax quinquefolius* L.) since 1974. American ginseng has been gathered and cultivated in the region since the early 20th century. In addition to supplying the American market, HGE attends international consumers through their offices in Canada, China, and Hong Kong.

The family business of HGE proudly promotes the wellness benefits of ginseng through their motto of enrich, balance, and thrive. As we toured the facilities, Paul's son Will, who explained the importance of quality control starting with the cultivation of the plants from their own seed through the harvesting, selection, warehouse, and packaging processes. A brief stop in the onsite Retail Store not only provided the opportunity to purchase various ginseng products but also to admire the various ginseng root trophies that included an 88-year-old

specimen, the Guinness World Record Ginseng root (2.04 lb.), among other vegetal curiosities that ginseng strangely gnarled roots offer.

With our bags full of samples as well as purchases, we boarded the bus for an up-close-and-personal encounter with *Panax*.

Our first stop took us to the sinuous rows of ginseng winding their way through the deeply shaded forest of maples and ashes. The dense plots of American ginseng are carefully tagged and monitored to assure quality harvest.

The second stop provided a contrast with the field of straight rows of American and Chinese ginsengs grown under artificial shade. After five years, the roots are hand harvesting and the plots are left to fallow, sow with different crop, or regenerate with secondary vegetation.

After making our acquaintance with American Ginseng, it was time to assess its properties. Our lunch stop at Shanghai Grill in Weston allowed us to sample various Chinese dishes, each prepared with fresh roots of ginseng. And to cap off this delicious culinary experience, we sampled various beverages prepared with locally distilled bourbon whiskies aged in oak barrels at the Great Northern Distilling in Plover. Of course, GND American Ginseng Aged Whiskey was the highlight of our samplings.

All the personnel of HGE, Shanghai Grill, and GND were gracious and informative hosts. We thank our hosts and guides for a most spirited and enlightened SEB field trip.





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Upcoming Grants of Potential Interest to Graduate Students**

****Note: Most of these grants are U.S. based, with the exception of a few. We are interested in hearing of other grant and fellowship opportunities for undergraduate, graduate, and early career scientists. Please email us at sebotanystudent@gmail.com**

2019 Future for Nature Award

Entity: Future for Nature

Deadline: September 16

Nat Geo Early Career Grant

Entity: National Geographic

Deadline: October 3

NSF Graduate Research Fellowship Program

Entity: National Science Foundation

Deadline: October 22 to 26, depends on field of specialty

The Lewis and Clark Fund for Exploration and Field Research

Entity: American Philosophical Society

Deadline: November 1

Explorer's Club Student Grants

Entity: The Explorer's Club

Deadline: November 8

Graduate Ethnobiology Research Fellowships

Entity: Society of Ethnobiology

Deadline: November 30

Botany in Action Fellowship

Entity: Phipps Conservatory and Botanical Gardens

Deadline: January 12

Garden Club of America Awards in Tropical Botany

Entity: The Garden Club of America

Deadline: January 15

Torrey Botanical Society Graduate Student Research Fellowship

Entity: Torrey Botanical Society

Deadline: January 15

The Anne S. Chatham Fellowship in Medicinal Botany Fund

Entity: The Garden Club of America & Missouri Botanical Garden

Deadline: January 31

The Joan K. Hunt and Rachel M. Hunt Summer Scholarship in Field Botany

Entity: The Garden Club of America

Deadline: February 1

Richard Evans Schultes Research Award

Entity: The Society of Economic Botany

Deadline: March 30

Idea Wild

Entity: Idea Wild

Deadline: Open Deadline

Rufford Small Grant

Entity: The Rufford Foundation

Deadline: Open Deadline

Darrell Posey Student Fellowship and Small Grants

Entity: The International Society of Ethnobiology

Deadline: TBT