American Society of Pharmacognosy

Spring 2024

Discovering Nature's Molecular Potential

ASP Newsletter: Spring 2024, Volume 60, Issue 1

In Memoriam: E. John Staba

By Christine Jankowski, MA, with assistance from Cindy Angerhofer, PhD

Former ASP President (1971-1972) and ASP Honorary Member Emil John Staba died on July 16, 2023 in St. Paul, Minnesota at the age of 95. He was an integral ASP member, professor, and researcher with a remarkable passion for books and learning. He was one of the last surviving ASP members who attended the first meeting at the 1959 Plant Science Laboratory Seminar in Chicago.[1]

Staba's research focused on tissue culture of economically important plants, aquatic plants, herbal remedies, and pharmacy education. He was particularly interested in studying popular medicinal plants like *Ginkgo biloba* (ginkgo) and *Panax quinquefolium* (American ginseng). His extensive research pursuits led him to publish over 160 papers, four patents, and one book. As stated in his obituary for the *Minneapolis Star Tribune*, "Independent bookstores across the country likely know [sic] him" as he curated a massive personal library on his research interests.

Staba in his office at the University of Minnesota.

PHOTO: RICHARD G. ANDERSON OF ST. PAUL, MINNESOTA, FROM THE COLLECTION OF THE LLOYD LIBRARY AND MUSEUM.

Staba was born in New York City on May 16, 1928. He served in the Navy from 1946 to 1947 and then attended St. John's University, receiving his bachelor's in pharmacy in 1952. After receiving his master's in pharmacognosy from Duquesne University (1954), he attended the University of Connecticut for his doctoral degree in pharmacognosy where he was mentored by ASP founding member and former editor of *Lloydia*, Dr. Arthur E. Schwarting. Staba was awarded his PhD in 1957.

He was an assistant professor of pharmacognosy (1957-1965) at the University of Nebraska Lincoln and quickly rose through the ranks to became professor and chairman of the department. He then joined the University of Minnesota as professor and chairman of the Department of Pharmacognosy from 1968 to 1995. During his time at Minnesota, he served as an assistant dean for professional education (1974- 1976).

ASP Fellow and Honorary Member Cindy Angerhofer was

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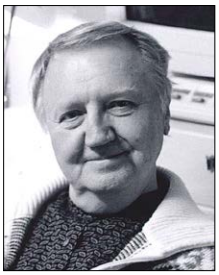
IN THIS ISSUE: SPRING 2024



John Staba

Peter H. Seeberger

Liva Rakotondraibe

April Lukowski

Employment Service

The Society offers a placement service to aid our members in seeking positions or employees. This service is available only to ASP members and is free to both the applicant and the employer.
For more information see the services website.

www.pharmacognosy.us/jobs/

Newsletter Staff

Contribution deadlines

Spring: Feb. 15; Summer: May 15
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PHOTO: CUNY

Editor's Corner

American Society of Pharmacognosy

By Edward J. Kennelly, PhD

As I write this on May Day in New York, it seems like summer is right around the corner. I hope many of us will be able to meet at the International Congress of Natural Product Research to be held in Kraków in July. The organizers are planning a great program, and it is not surprising that many more people requested oral presentations than available time slots. The list of invited speakers and workshops are included in the article and on the conference website, and I hope you will take a look. This meeting will surely be a great opportunity to interact with natural product colleagues from around the globe.

Last year, we received sad news of the passing of one of the long-time members of ASP and former ASP President Dr. John Staba. The ASP owes him a lot for his leadership and dedication to the Society. Lloyd archivist, Christine Jankowski, volunteered to write a tribute to Staba, and it appears on the cover of this issue of the *Newsletter.* As the society reaches its 65th anniversary, we have fewer of the members from the early days with us who were present at the founding at the Plant Science Laboratory Seminar in Chicago in 1959. I hope you will read the Staba remembrance and consider his seminal contributions to the ASP that allowed us to grow into the society we are today. His enormous personal library is also quite remarkable, and it is nice to know that many institutions, including the Lloyd, have benefitted from his book donations.

We have two fascinating articles about members conducting work in Africa. Dr. Liva Rakotondraibe of The Ohio State University contributed to our "Field Notes in Pharmacognosy," discussing one of his field trips to his home country of Madagascar. Rakotondraibe explains the amazing geological history of this island nation that is a hotspot of biodiversity, and one of its endemic plants was the source of important cancer treatments, vincristine and vinblastine. He goes on to describe the procedures that are in place to ensure collection trips are in line with accepted conventions on intellectual property rights. His descriptions and photos of Madagascar make this place come alive. Another ASP member Dr. Jiangnan Peng of Morgan State University describes a unique NSF-sponsored graduate training program in plant metabolomics that he runs each summer in Kenya! One of my students ASP member Yi Zhao was fortunate to go last year, and I know other ASP members have been able to attend as well. Peng's article describes not only the training opportunities available to students, but also a way for students to expand their worldview and learn a little about African cultures.

The *Journal of Natural Products* is undergoing some major changes in its leadership, as explained in two articles in this issue of the *Newsletter*. Editor-in-Chief Dr. Philip Proteau is stepping down later this year, and a search committee has been formed to replace him. Dr. Barbara Sorkin continues to keep us updated on what is happening in federal agencies through her "Capital Communiqués" column, including the federal budget and NIH-funding opportunities.

The *ASP Newsletter* Committee, headed by Dr. Craig Hopp, is looking into ways to make the *Newsletter* more accessible to ASP members and friends. We constantly struggle with how to make the *Newsletter* more easily posted on social media, and I want to acknowledge the many former members of the *Newsletter* Committee who have worked with us on this same issue in the past, especially Dr. Michael Mullowney. If you have ideas about how the *Newsletter* can serve ASP members better, please feel free to reach out to Craig Hopp or me.

Enjoy these final days of spring! ■

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Staba's faculty portrait for the University of Minnesota, c. 1968.

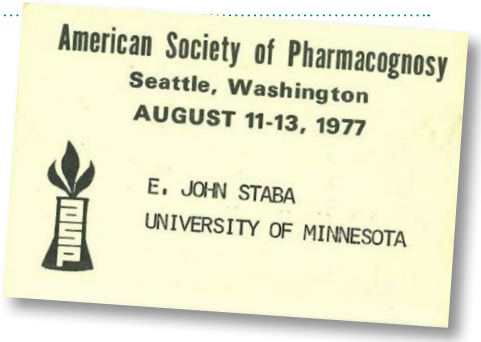
PHOTO: FROM THE COLLECTION OF THE LLOYD LIBRARY AND MUSEUM.

During his retirement, Staba founded his research consultation business, Plants Personified, and worked with industrial, government, and educational institutions interested in information about plants and natural medicine.

a graduate student in Staba's department at the University of Minnesota and warmly reminisced, "Dr. Staba was a mentor for many students through his hands-on teaching abilities, his keen listening skills, and his gentle and kind demeanor. Course syllabi were organized and resourced with primary literature and pharmacognosy texts, but classes were more like friendly discussions in someone's living room."[2] He became Professor Emeritus in 1995.

Other notable academic positions and experiences for Staba included, Visiting Professor at the University of Connecticut in 1966; National Academy of Science's Visiting Scientist to Poland, Czechoslovakia, Hungary in 1969; Fulbright Hays Research Fellow to Germany in 1970; Council of Scientific & Industrial Research's Visiting Scientist to India in 1973; NASA and the National Science Foundation's Summer Research Fellow at General Electric in Philadelphia for 1976; American Association for the Advancement of Science Fellow in 1982; '84 International Visiting Professor Award from the Medical Research Council of Canada in 1983; and Visiting Professor to the University of Manchester in 1989.[3]

During his retirement, Staba founded his research consultation business, Plants Personified, and worked with industrial, government, and educational institutions interested in information about plants and natural medicine. This led to many fellowships and research projects including his role at the natural personal care products company Tom's of Maine. Angerhofer further commented on her connection with Staba after her studies. "Dr. Staba remembered my intense interest in herbal medicine and dietary supplements when he worked as Interim Director of Research and Product Development for Tom's of Maine, Inc. in Kennebunk, Maine in 1996 -1997. Tom's wanted to develop a new line of functional and sustainable herbal supplements, and they were looking to hire a permanent Director of R&D to lead that effort. At Dr. Staba's encouragement, I applied and eventually accepted that role, drastically altering my career trajectory from academia."



Staba's name badge from the 1977 ASP Annual Meeting in Seattle.

PHOTO: FROM THE COLLECTION OF THE LLOYD LIBRARY AND MUSEUM.

With Plants Personified, he would write publications on his given research topic, such as American ginseng or plant biotechnology, that would feature his reviews of articles, patent applications, and reports. Some of these publications were coauthored by his wife, Joyce, a pharmacist.[4] Additional projects he was involved with during his lifetime included working with the National Science Foundation on projects in Pakistan and Egypt; three projects with the World Bank in Indonesia between 1985 and 1994 - including the creation of a research lab at Gadjah Mada University in Yogyakarta; the Indonesia Workshop on Steroid Biotechnology in 1986; the NATO Advanced Study Institute Program in Portugal in 1987; and a USAID visit to Thailand in 1989.

Staba was a member of many organizations and served on several committees for the American Pharmaceutical Association, the Academy of Pharmaceutical Sciences, the American Association of Colleges of Pharmacy, and the NASA Advisory Council on Life Sciences from 1984 to 1987. He

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With Plants Personified, he would write publications on his given research topic, such as American ginseng or plant biotechnology, that would feature his reviews of articles, patent applications, and reports.

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Staba was one of the 88 attendees at the Plant Science Laboratory Seminar in Chicago in 1959. That meeting was the first meeting of the American Society of Pharmacognosy. Staba continued to serve with the ASP in many ways.

was even elected for four consecutive terms for the US Pharmacopeia's Committee of Revision-Natural Products, serving from 1980 through 2000.

Staba was one of the 88 attendees at the Plant Science Laboratory Seminar in Chicago in 1959. That meeting was the first meeting of the American Society of Pharmacognosy. Staba continued to serve with the ASP in many ways. For the 1966 annual meeting in Minneapolis, he was the head of the Scientific Program Committee. The committee presented the symposium "Natural Products for Mental Health" and other sessions covering plant tissue culture, phytochemistry, and "Biosynthesis of Alkaloids."[5] Staba was elected president of the ASP for the 1971-1972 term and presided over the 7th Annual Meeting in Columbus, Ohio.

Reviewing his correspondence during his time as ASP president, Staba offered his assistance with subcommittees and was willing to share memberships with students far and wide. He also sought to expand publicity of the ASP to larger organizations, such as the American Pharmaceutical Association, and he assisted with the planning of the joint meeting Gesellschaft für Arzneipflanzenforschung for 1974-1975. Later in 1984, he was a plenary speaker at the annual meeting held in Austin, Texas. Staba became an Honorary Member of the ASP in 1998.

A small portion of his papers and books were donated to the Lloyd Library and Museum in 2009 and in 2022. He later donated additional books, articles, and research to the Mishoomis Collection Library of the American Indian Learning Resource Center at the University of Minnesota, Duluth. United Plant Savers also received a large donation of his books, and many other smaller libraries and communities received parts of his library as well. Angerhofer fondly recalled, "A move to reclaim space in the home he shared with his wife, Joyce, led John to start donating much of his collection in the 2010s. 'My collections had taken over our house and all of our storage room!' he said. But for the rest of his days, he was surrounded by and engaged with the books and papers he so dearly loved… 'It's like giving away my children,' John said. 'All my collections have given me much enjoyment over the years and much, much more information.' But through his donations, John wanted his collections to be placed as an accessible resource to a new generation of scholars for information and enjoyment."[6]

Staba will be missed by all. The extensive work that Staba put into his research is invaluable for researchers interested in medicinal plants. He leaves behind his wife and collaborator, Joyce, their five children, eight grandchildren and two great-grandchildren. Memorials for Staba can be made in his honor through the American Association for the Advancement of Science at aaas.org. ■

Staba will be missed by all. The extensive work that Staba put into his research is invaluable for researchers interested in medicinal plants.

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ICNPR2024 Meeting in Kraków Taking Shape

By Agnieszka Szopa, PhD and Stefan Gafner, PhD

The scientific program of the ICNPR2024 meeting is starting to take shape. The opening lecture by Peter H. Seeberger (Max Planck Institute, Potsdam, Germany) and the three plenary lecture speakers, Ikuro Abe (University of Tokyo, Japan), Günther K. Bonn (University of Innsbruck, Austria), and Guido Pauli (University of Illinois at Chicago, USA), have been confirmed. Approximately 800 abstracts were submitted to the organizing committee, including 250 abstracts for short oral communications, far more than the available oral slots.

The program now includes 22 keynote speakers, including, among others, Judith Rollinger (University of Vienna, Austria), Anne Osbourn (John Innes Centre, United Kingdom), Valerie Paul (Smithsonian Marine Station at Fort Pierce, USA), Dong-Chan Oh (Seoul National University, South Korea), De-an Guo (Shanghai Institute of Materia Medica, China), and Alain Goossens (Ghent University, Belgium).

Historic Kraków

There is still time to register for the three pre-conference workshops that are taking place on Saturday, July 13, 2024: the workshop of the Botanical Safety Consortium (BSC), the Early Career Researchers (ECR) Workshop, Animal Healthcare & Veterinary Phytotherapy Workshop, and the African Research Network Workshop.

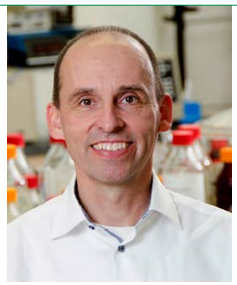
A new addition to the program is a four-hour oral session covering topics related to consumers' health and wellness in the dietary supplement industry, including emerging technologies to assess the quality, safety, and efficacy of botanical ingredients. The session speakers include Amit Chandra (Amway Nutrilite, USA), Oran Kwon (Ewha Womans University, South Korea), Mark Blumenthal (American Botanical Council, USA), Holly Johnson (American Herbal Products Association, USA), Funda N. Yalçin (Hacettepe University, Turkey), and Fred Stevens (Oregon State University, USA).

We look forward to seeing you in Kraków this summer. Details about local attractions will be in the next issue of the *Newsletter*. ■

Peter H. Seeberger

Ikuro Abe
PHOTO: UNIVERSITY OF TOKYO

Günther K. Bonn
PHOTO: UNIVERSITY OF INNSBRUCK



Guido Pauli
PHOTO: JOSHUA CLARK, UIC

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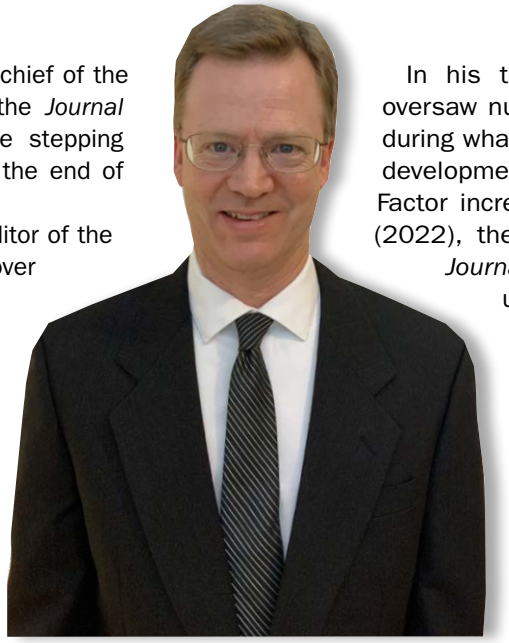
Proteau Stepping Down as *Journal of Natural Products* Editor

Proteau's career has been devoted to the study of natural products, and he has been an ASP member since he became a faculty member at Oregon State University.

By Edward Kennelly, PhD



Dr. Philip J. Proteau, editor-in-chief of the ASP's flagship publication the *Journal of Natural Products*, will be stepping down from this position at the end of this year.

Proteau served as an associate editor of the *Journal* beginning in 2008 and took over as the editor-in-chief at the start of 2020, just prior to the COVID pandemic, when long-time *J. Nat. Prod.* editor Dr. A. Douglas Kinghorn retired as editor-in-chief. Proteau's career has been devoted to the study of natural products, and he has been an ASP member since he became a faculty member at Oregon State University.

ASP President Dr. Tawnya McKee reflected on Proteau's time as editor, "Phil has served the *Journal* very well during his tenure spearheading many special issues which have helped increase the *Journal*'s exposure and its reputation. The jump in the *Journal*'s impact factor is a real measure of his success."

ASP Fellow and *Journal of Natural Products* Associate Editor Dr. Cedric Pearce, who worked with Proteau editing the *Journal* for over a decade, commented, "Phil's contributions to the *Journal* as both associate editor and editor-in-chief have consistently been of the highest standard and the Society has benefitted from his dedication. Being a close colleague for the past 15 years has been a professional joy; I'm sorry he is retiring and wish him the very best."

In his time as editor-in-chief, Proteau oversaw numerous changes in the *Journal* during what has been termed an incredible developmental period. The two-year Impact Factor increased from 3.78 (2019) to 5.1 (2022), the highest Impact Factor in the *Journal*'s history. During Proteau's tenure as editor, the *Journal* has instituted a requirement that raw NMR data files be deposited in an appropriate depository or included as Supporting Information for all new compounds published in the *Journal*. He also initiated a new manuscript type called Perspectives, to allow experts to give insights on timely topics in the field of natural products.

While editor-in-chief, he has brought on several new associate editors, with varied expertise, including Drs. Katherine Maloney and Roberto Berlinck. In May 2021, the *Journal* began to change the cover art monthly, rather than quarterly, thereby allowing more authors to have their work highlighted. Proteau is currently serving on the committee renegotiating the contract between ASP and ACS to co-publish the *Journal*.

The ASP thanks Phil for his many years of service to the *Journal* as associate editor and editor-in-chief, and we wish him continued success. A search for a new editor-in-chief is currently underway (see accompanying article). ■

"The jump in the *Journal*'s impact factor is a real measure of his success."

—Dr. Tawnya McKee

Search for New Editor-in-Chief, *Journal of Natural Products*

The ASP is seeking a broadly experienced and visionary natural products scientist for the position of Editor-in-Chief (EIC) for its flagship publication,the *Journal of Natural Products*, which is a co-publication with the American Chemical Society (ACS).

The *Journal* disseminates significant progress in the chemistry, biochemistry, biotechnology, pharmacology, and chemical ecology of natural products. The EIC will serve as the face of the *Journal*, including on the ASP and ACS websites and at attended scientific meetings. The ideal EIC will have an active research program, a strong professional network with international connections, and the ability to work closely with the associate editors and the editorial board. The EIC will have and/or develop expertise in the ACS Paragon system working closely with the ACS to ensure the professional appearance of the *Journal* and its articles. The EIC will make initial decisions about the suitability of submissions for the *Journal*, assign them to an appropriate associate editor, supervise and coordinate the review activities of the *Journal*'s associate editors, and monitor the final decisions.

The EIC will assume the editing and review duties for a portion of the manuscripts submitted to the *Journal* and will provide training and support to the associate editors. The EIC will also work with the ASP social media committee to promote the *Journal* and outstanding articles on social media. The EIC will also ensure that authors and peer reviewers follow ethical practices, that manuscripts are original and free of plagiarized materials, and that manuscripts are evaluated fairly by at least two external reviewers. The ASP is requesting a minimum five-year commitment, and applications will be accepted until the position is filled or otherwise indicated. A complete description of the EIC position can be found here.

Applications should include a cover letter addressing the queries below and a current CV. The application will only be accepted when submitted electronically to **asphcog@gmail.com** with EIC Search Committee in the subject line.

- Describe your experience of academic editing.
- What is your vision for placing *J. Nat. Prod.* as a successful society journal in the context of a growing market of Open Access publishing?
- What unique skills would you bring to the EIC role?

Please submit your application by **June 1, 2024**.

The EIC Search Committee is comprised of Drs. Tawnya McKee (ASP President), Raymond Andersen, Marcy Balunas, Joseph Betz, Skylar Carlson, Lesley-Ann Giddings, Guido Pauli, Cedric Pearce, and Barbara Timmermann. ■

Taking Action: Fostering Equity and Inclusion in STEM Labs Through Intersectional Frameworks

By Lesley-Ann Giddings, PhD and Eduardo Caro-Diaz, PhD

The STEM research laboratory is a classroom where trainees come from different places, cultures, religions, as well as educational, socioeconomic, racial, and ethnic backgrounds. Given these diverse perspectives, assuming one could employ the same mentoring approach with everyone is unrealistic. Here, we discuss the recently published article entitled "Feminist Pedagogy in the STEM Research Laboratory: An Intersectional Approach",[1] which highlights an intersectional approach to mentoring students in a research laboratory written by one of us, ASP member Dr. Eduardo Caro-Diaz, who is also a member of the ASP Diversity, Equity and Inclusion Committee. This article was featured in a 2023 special issue entitled *The Intersection of STEM Pedagogy and Feminist Theory*,[2] which explored feminist pedagogy within the STEM classroom.

Feminist pedagogy is an inclusive approach to teaching and learning rooted in feminist theory and principles. This pedagogy aims to empower students by decentralizing classroom power dynamics, giving students more autonomy, and recognizing student positionality in historical and existing power structures to affect social change.[3] Using student-centered learning, trainees collaborate and engage in constructing knowledge, and the instructor is seen as part of the learning community rather than a person dictating knowledge from a position of power. Notably, marginalized voices are centered within the classroom, highlighting their voices in problem-solving dialogues within their communities.

The article describes how we can incorporate intersectionality in STEM education, drawing understandings from Kimberlé W. Crenshaw's work.[4] The lens of intersectionality reveals the interconnected nature of inequalities, urging us to address racial, gender, class, and other disparities simultaneously. Below we share our discussion of this work, with questions by Giddings and responses by Caro-Diaz.

The Marine Natural Products Lab at the Molecular Sciences Research Center taken in 2023 at the University of Puerto Rico with Naiara Lebron-Acosta, Alexandra V. Centeno-Melendez, Victoria Casimir-Montán, Chris A. Morales-Colon, Marie Matos-Hernandez, Eduardo J. Caro-Diaz, Laura S. Torres-Rivera, Miguel J. Soto-Reyes, Gabriel D. Jimenez-Nieves, Faviola A. Caban-Vazquez (left to right).

PHOTO: EDUARDO CARO-DIAZ

Feminist pedagogy is an inclusive approach to teaching and learning rooted in feminist theory and principles.

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Taking Action: Fostering Equity and Inclusion in STEM Labs Through Intersectional Frameworks

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What inspired you to use intersectional frameworks to mentor your students?

After ten years living outside Puerto Rico, I was able to notice many challenges students faced at the University of Puerto Rico (UPR). Despite the high number of women attending Puerto Rico's public university, socio-political challenges persist. The unique neocolonial environment in Puerto Rico adds complexity, impacting students dealing with intersecting systems of inequity and further exacerbated by natural disasters (e.g., Hurricanes Irma and Maria in 2017; earthquakes in 2020).[5] As the research group expanded and was composed almost exclusively of women, I noticed a void in my skills and the academic culture to properly mentor and guide women at UPR toward research and biomedical careers. This inspired me to read about feminist frameworks to design more equitable practices, which required me to gather information about each trainee in individual and group activities as well as feedback after a new dynamic or practice was implemented. In general, I aim to challenge traditional educational practices, especially in research labs at the University of Puerto Rico (UPR).

In general, I aim to challenge traditional educational practices, especially in research labs at the University of Puerto Rico (UPR).

What are some inclusive lab practices you use?

We now refer to our research group as the Marine Natural Products Lab, which is intentionally not named after me to emphasize collective accountability and inclusivity through belonging. Group meetings go beyond science discussions, incorporating exercises related to diversity, equity, and inclusion to foster a sense of community. We start every group meeting with a check-in question, which allows everyone to connect with the space and everyone else. The questions can vary in depth, for example, "Based on how you're feeling, what kind of car would you be?" or "What is the latest show or movie that really inspired you and why?" This dynamic helps people arrive at group meetings and center themselves in the group. More recently, I have led lab retreats focused on self-perceptions and emotional perspectives on scientific performance, including exercises of self-reflection and discussing books that speak to the philosophical aspects of science. On our last retreat, I asked trainees to self-quiz themselves using online tools, such as the Daring Leadership Assessment,[6] and discuss the results with other lab members. We also discussed Dr. Beronda Montgomery's book, *Lesson from Plants*,[7] which examines things we can learn from plant dynamics and how they can be incorporated to our research and personal lives. Apart from these extracurricular activities, I also emphasize the importance of one-on-one meetings, where overall progress through personalized mentorship is prioritized, acknowledging the complexity of each member's identity. This includes but is not limited to traditional individual development plans, emotional check-ins, using specific pre-discussed learning styles, and discussing funding opportunities to offset living costs. For example, some lab members prefer more frequent meetings to discuss progress and data with hard deadlines, while others feel better having flexible deadlines and more leeway to perform their tasks.

More recently, I have led lab retreats focused on self-perceptions and emotional perspectives on scientific performance, including exercises of self-reflection and discussing books that speak to the philosophical aspects of science.

How do you know that these practices are effective?

We regularly check in about these practices at group meetings. Another way to gauge effectiveness is to collect input directly from lab members. For example, after annual lab retreats, I distribute anonymous surveys to gain insight into the gap between intended and actual outcomes. Some of the questions have been: "How well did the facilitation align with your goals and expectations?"; "What were the aspects of the retreat you found most valuable and why?"; and "Have you identified new possibilities for action as a result of this retreat?" Feedback from group members has highlighted the development of a safe space for learning, recognition of efforts, and exponential support among women in the lab. It also has provided suggestions for improving future retreats and lab activities. One of my favorite responses to "What did you like best at the retreat?" was "There were a lot of experiences I enjoyed during the retreat. Overall, it was an amazing experience with an amazing group and PI. If I had to pick one favorite experience, it would be the self-reflection painting [exercise]. I felt a very natural and deep connection with myself."

Another way to gauge effectiveness is to collect input directly from lab members.

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Taking Action: Fostering Equity and Inclusion in STEM Labs Through Intersectional Frameworks

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What do the terms vulnerable leadership and reciprocal learning mean?

Vulnerable leadership is a concept I learned from Brené Brown, a research professor at the University of Houston who has spent over 20 years studying courage, vulnerability, shame, and empathy.[8] Her work, originally introduced to me by my sister, really shifted my idea of how to take on the role of a principal investigator (PI) and provided me with new tools for approaching difficult conversations within the research group. Instead of hiding our feelings around performing research, vulnerable leadership allows us to connect the work through our feelings, such as fear, anxiety, or shame. In this sense, students can easily see and hear when I am having a tough time moving through my role as a PI, which allows us all to connect better. This mentoring approach has had a lot of success, yielding multiple grants, fellowships, travel awards, and collaborative projects which showcases the success of this inclusive model. Apart from the typical accolades related to academic success, I also have personally benefited from applying these frameworks by developing better tools to navigate conflict, learn alongside and from trainees, and continue to improve my interpersonal skills that enable better communication and collaboration within my scientific networks and community, which exemplifies a reciprocal learning model. By bringing our full selves and identities to the lab space, trainees and I enable each other to learn from one another. In this sense, our group actively enables acknowledgment of everyone's complex intersections and past experiences. Dr. Shawntel Okonkwo's words during her TED Talk really resonate with me when she expresses the "need to build intersectionality into the cultural DNA of how we think about science, how we teach science, how we fund science and who science truly serves".[9] I think these efforts are just the tip of the iceberg and I still feel there is lot more that can be done.

To learn more about this approach to mentoring, read "Feminist Pedagogy in the STEM Research Laboratory: An Intersectional Approach" by Eduardo Caro-Diaz, Marie L. Matos-Hernández, Grayce E. Dyer, Siribeth Lopez-Santana, Laura S. Torres-Rivera, Lara G. Laureano-Llorens, Naiara Lebron-Acosta, and Victoria M. Casimir-Montán.[1] It is a great example of how to transform STEM education through intersectionality, foster a culture of inclusivity, and challenge traditional norms to create a more equitable and diverse scientific community. ■

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Tropical Plants Metabolomics Training Institute: An International Collaboration

By Anne Osano, PhD and Jiangnan Peng, PhD

U.S. graduate students, including several ASP associate members, have enjoyed an extraordinary opportunity to learn about plant metabolomics through an NSF-sponsored summer program conducted in Kenya, run by ASP members PI, Prof. Anne Osano at Bowie State University, and Co-PI, Prof. Jiangnan Peng at Morgan State University. This three-year program began in 2022 and has to date trained 41 graduate student fellows, 21 from the US from eight different universities and 20 from Kenya from seven different institutions. An additional 20 graduate students will be trained this summer.

The overarching goal of the Plant Metabolomics Advanced Training Institute is to apply metabolomics approaches to study plants used in the traditional medicine system in Kenya. This NSF-sponsored program supports ten graduate students from the USA and ten from Kenya for a three-week program annually during summers. The program is hosted by Nairobi University with collaborating organizations in Kenya and the US in the area of plant bioactive compounds.

Fellows are immersed in plant metabolomics research and training in a global setting in Kenya and are paired with peer international students and mentored by international research scientists from different cultures. The fellows, therefore, have a chance to experience working and living in different cultures from their own, thereby educating student researchers for a global age. They are trained in metabolomics approaches, which they use to analyze the plants at the same time. The technology training includes high-performance thin-layer chromatography, liquid chromatography mass spectrometry, and gas chromatography mass spectroscopy. Fellows are also trained on plant taxonomy and field collection.

As part of the research experience, all fellows are required to prepare and present a poster and PowerPoint presentation of their research at the closing symposium. Each team is expected to co-author a scientific presentation that will be given by the US student at an international conference post-ASI. For example, one team investigated the phytochemicals of *Erythrina abyssinica* through quantitative analysis and another team looked at *Melia azedarach* leaves and seeds extract found in Machakos, Kenya via metabolomic techniques. Fellows appreciated the opportunity to learn about different analytical techniques, as one fellow noted, "I was introduced to new instrumentation I had not used before and that always helps for future career opportunities."

The technology training includes high-performance thin-layer chromatography, liquid chromatography mass spectrometry, and gas chromatography mass spectroscopy.

2023 Fellows learning HPTLC analysis at Nairobi University in Kenya.

PHOTO: JIANGNAN PENG

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The fellows were also treated to a safari tour of the Maasai Mara National Reserve, which is Kenya's best-known safari destination. It is a vast wildlife park with wide-open savannah grasslands located in the Great Rift Valley, home to the big five (lion, leopard, African buffalo, elephant, and rhinoceros) as well as an incredible variety and number of animals. They also were able to visit and dance with the Maasai tribe. According to one fellow, "Maasai Mara was a magical experience. The landscape and animals were unbelievable and something I never thought I would get to see. It was lovely to meet with the Maasai in their village and hear about their culture. It will remain my most fond memory of my first trip to Africa."

All fellows presented posters at the closing symposium, and some students have presented their posters at national conferences. Three ASP associate members have

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Tropical Plants Metabolomics Training Institute: An International Collaboration

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PHOTO; JIANGNAN PENG

presented their results at national meetings: Sarah Barr Ainslie presented her poster at the 2022 ASP Annual Meeting in Charleston, SC; Abubakar Barau presented at the 2023 ASP Annual Meeting in North Bethesda, MD; and Mariam Koroma presented her poster at the 2024 Emerging Researchers Conference in Washington DC. Yi Zhao will present her research at the ICNPR2024 conference in Kraków this July. One fellow commented, "Overall, I had a wonderful experience and want to continue to be a part of the IRES Fellowship in the future, whether journeying back to Kenya or mentoring incoming students. I feel blessed to have taken part in such an interesting and creative research program."

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At the University of Nairobi, Prof. Sheila Okoth and Prof. Margaret Oluka are coordinating the program. Other collaborators include Dr. Xavier Cheseto, International Centre of Insect Physiology and Ecology, Dr. Ehab Mahran, CAMAG Ltd., and Dr. Eike Reich, President of HPTLC Association.

The 2024 class of fellows has been selected already. Due to the great success and overwhelming interest of this program, the PIs will try to renew this grant. For next year's application, look here to see the availability of this program and contact Peng for questions. ■

They also were able to visit and dance with the Maasai tribe. According to one fellow, "Maasai Mara was a magical experience. The landscape and animals were unbelievable and something I never thought I would get to see."

Students visited the Maasai Mara tribe, danced with the Maasai, and learned about their life and culture including Maasai herbs. PHOTO; JIANGNAN PENG

Meet a New ASP Member

Dr. April Lukowski

Dr. April Lukowski *is a first year assistant professor at the University of California San Diego with a joint appointment between Scripps Institution of Oceanography and the Skaggs School of Pharmacy and Pharmaceutical Sciences. Her group is interested in exploring the roles of enzymes in natural product biosynthesis and investigating how these enzymes can be used in medicinal chemistry applications. Prior to taking her faculty position, she performed her PhD research under the mentorship of Professor Alison Narayan at the University of Michigan and postdoctoral research with Professor Bradley Moore at UCSD/SIO. We are pleased to welcome Dr. Lukowski to the ASP!*

By Wendy Strangman, PhD

What is your scientific background?

I come from a background rooted in biochemistry, and I obtained my BS in Biochemistry from Saginaw Valley State University. My honors thesis focused on identifying new isoprene synthase genes from fir trees, and afterwards I explored interests in environmental chemistry through monitoring bacterial contamination in local watersheds. I enjoyed the fieldwork I was able to do, and I also started to develop a strong interest in proteins and enzymes, which pushed me toward pursuing a graduate degree to study them. I ultimately joined the brand-new lab of Prof. Alison Narayan, which was my first exposure to the field of natural products and biocatalysis. With Alison, I got to see the incredible breadth of chemistry that enzymes are capable of, and I personally got to work on at least 30 different enzymes during my time. In some projects it was seeing a new activity for the first time and in others it was seeing how the enzymes could be used in preparative biocatalytic reactions. My dissertation focused on the characterization of the cyanobacterial pathway for the neurotoxin saxitoxin, which is an extremely challenging project on all fronts – fighting against the polarity of the compounds, the proteins that were "resistant to purification," enzymes with missing redox partners, etc. It was puzzling and rewarding, and I got to work with and learn from an amazing team of scientists.

Dr. April Lukowski at the Royal Botanic Garden, Edinburgh, Scotland, July 2022

PHOTO: KATHERINE BAUMAN

My PhD experience let me dip my toe into natural products and solidify my skillset in enzymology, but for my postdoc, I wanted to learn more about how to find new enzymes and identify pathways myself. I met Prof. Bradley Moore when he came to give a talk at the University of Michigan, and I was captivated by the work his group was doing on gene cluster identification and pathway engineering. During this visit, I remember taking Brad on a tour of my "toxin room" where I was cultivating saxitoxin-producing dinoflagellates at the time, and he seemed to share my enthusiasm for going off and trying new things. I subsequently joined Brad's lab at the Scripps Institution of Oceanography for

My dissertation focused on the characterization of the cyanobacterial pathway for the neurotoxin saxitoxin, which is an extremely challenging project on all fronts – fighting against the polarity of the compounds, the proteins that were "resistant to purification," enzymes with missing redox partners, etc.

Meet a New ASP Member: Dr. April Lukowski

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I didn't stray far from cyanobacterial toxins and worked on a few projects related to naturally produced toxins, and I found some uniquely efficient halogenases that I am continuing to explore now for biocatalysis.

my postdoc the following year to learn the bioinformatics and genome mining skills I needed to round out my enzyme discovery toolkit. I didn't stray far from cyanobacterial toxins and worked on a few projects related to naturally produced toxins, and I found some uniquely efficient halogenases that I am continuing to explore now for biocatalysis. Working in a group like Brad's, and at SIO in general, with such a diverse group of people from different scientific walks of life, made for a very creative and collaborative experience. I feel extremely fortunate that I can launch my own research group at SIO in this environment; and, with a joint appointment with SSPPS, I can see endless opportunities for integrating natural product biosynthesis, biocatalysis, medicinal chemistry, and even environmental toxicology.

What are your research interests in pharmacognosy?
I'm fascinated by the enzymes behind the biosynthesis of marine natural products. In my research, we study several aspects of biosynthetic enzymes: what they do, how they work, where they come from, and how we can leverage them. One major goal of my research is to explore the utility of natural product biosynthetic enzymes in a medicinal chemistry context such that we can access both natural products and new-to-nature chemicals as well as tune a molecule's bioactivity.

How did you hear about the ASP?
I first learned about ASP during my postdoc because we would get together to watch the webinars, but I didn't make the leap to become a member until very recently.

Why did you decide to join the ASP?
I want to participate in the meetings and virtual seminar series, and I want to carry on the tradition of encouraging the people who work with me to participate and get to know the community as well. I also am interested in branching out my lab's capabilities to perform a couple of bioactivity assays ourselves to prioritize compounds we would make biocatalytically, so I am especially interested in meeting people who have launched screening components of their lab this way too.

What would you like to achieve through your membership?
I'm excited to connect with people in the ASP community and stay up to date with all of the research people are getting up to!

What other scientific societies do you belong to?
I am a member of the American Chemical Society (ACS) and the Society of Environmental Toxicology and Chemistry (SETAC). I'm also planning to join the American Society for Biochemistry and Molecular Biology (ASBMB) soon as well.

What do you like doing in your spare time – movies, activities, etc.?
I enjoy rock climbing (plastic rocks in the gym only! I'm too scared to climb outside still, but I also believe you have to confront your fears.), hiking, baking, knitting, and having a nice oat milk latte by the beach. ■

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New Members of ASP Spring 2024

ASP would like to welcome our new members. The Society's main objectives are to provide the opportunity for association among the workers in pharmacognosy and related sciences, to provide opportunities for presentation of research achievements, and to promote the publication of meritorious research. New members include 7 full members and 25 associate members. We look forward to meeting you and learning more about you and your work. Information on ASP membership is available here.

FULL MEMBERS

Dr. Abdullah Alanzi
Saudi Arabia

Dr. Melissa Cadelis
New Zealand

Prof. Brent Copp
New Zealand

Prof. Brandon Morinaka
Singapore

Prof. Kennedy Nyongbela
United States

Prof. Yi Tang
United States

Dr. Katherine Warpeha
United States

ASSOCIATE MEMBERS

Dr. Muhammad Adil
Pakistan

Ms. Adian Aldabbagh
United States

Ms. Robyn Araiza
United States

Ms. Tugba Aydin
Turkey

Ms. Hannah Boesger
United States

Ms. Isabel Chauvin
United States

Mr. Ming-Che Cheng
Taiwan

Ms. Emily Derreza
United States

Ms. Francesca DosReis
United States

Mr. Emmanuel Ezenabor
Nigeria

Dr. Meltem Güleç
Turkey

Mr. Terungwa Iorkula
United States

Mr. Noorullah Khan
Germany

Mr. Lukas Koch
Germany

Mr. Štefan Kosturko
Czech Republic

Prof. Simeon Kouam
Cameroon

Ms. Ching-Yi Lu
Taiwan

Mr. Emmanuel Makinde
Australia

Dr. Yahiya Kadaf Manea
Yemen

Dr. Phanankosi Moyo
South Africa

Mr. Ryan Murphy
United States

Mr. Oluwaseun Olalere
Nigeria

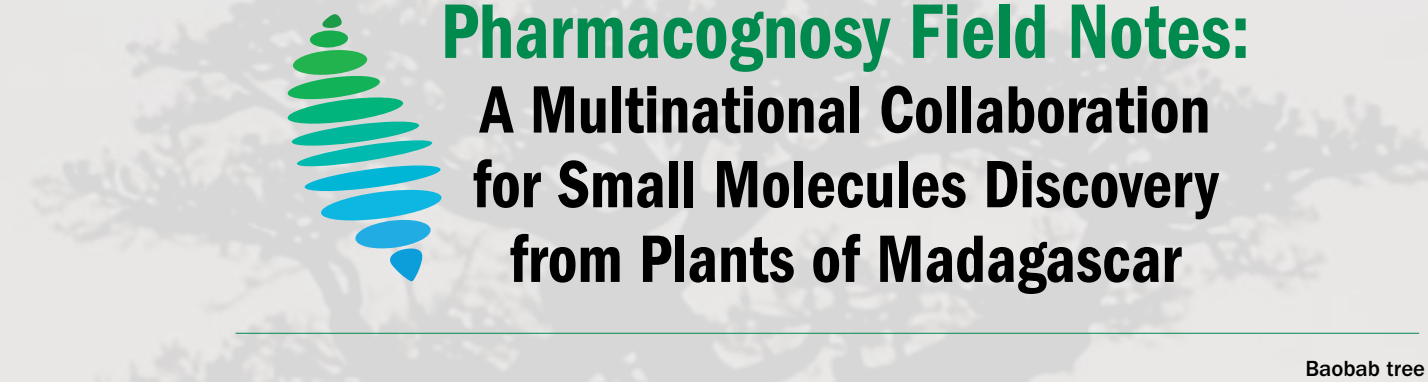
Mr. Osasere Osayawe
United States

Mr. Steven Watson
India

Ms. Molly Wentworth
United States

American Society of Pharmacognosy

Pharmacognosy Field Notes:
A Multinational Collaboration for Small Molecules Discovery from Plants of Madagascar



Baobab tree

Photos in this article were provided by Liva Rakotondraibe and Inagaki Masanori.

By Harinantenaina Liva R. Rakotondraibe, PhD

I am originally from the island nation of Madagascar, and my research focuses on the discovery of bioactive compounds from natural sources including Malagasy endemic and medicinal plants, liverworts, microbes from marine and soil organisms, and lichens and their mycobionts.

I began my education in Madagascar, receiving my master's degree from the University of Antananarivo in organic chemistry. I later moved to Hiroshima University, Institute of Pharmaceutical Sciences in the School of Medicine to perform my doctoral research studies on medicinal natural product chemistry under the supervision of Dr. Yamasaki Kazuo, and I am still collaborating with my former Japanese colleagues.

In 2017, Dr. Otsuka Hideaki, one of my former colleagues at Hiroshima University, who is now the Dean of the Faculty of Pharmaceutical Sciences of the Yasuda Women's University, was granted permission by his current institution to perform a phytochemical investigation on endemic plants of Madagascar. A field trip to Madagascar was undertaken to collect plants with the host Centre National d'Application de Recherche Pharmaceutique (CNARP) and my current institution, The Ohio State University (OSU), and this collaboration forms the basis of my Field Notes report.

Madagascar (not the Disney movie!!) is an island located off the east coast of Africa, about 400 km east of Mozambique. It is the 4th largest island in the world with a population of about 29,000,000. Madagascar was in the center part of the middle supercontinent Gondwana. Madagascar and India first split from Africa and South America before the island split from India and has remained on its own for nearly 100 million years. This extended separation over time made the geography, geology, and the climate of Madagascar favorable to unique biodiversity. Many species have been evolving in isolation on the island for millions of years.

Madagascar is one of the world's biodiversity hotspots. It hosts approximately 12,000 species of vascular plants, of which about 80% are endemic. The biodiversity of the primary forests of Madagascar has been decreasing in the past decade due to erosion, urban expansion, bushfires, and poverty. The direct effect of this degradation is the decrease of the number of recorded endemic and medicinal plant species that limit the potential for discovering new lead small molecules and change the original symbiotic patterns that have been supporting the unique flora of Madagascar. A biodiversity survey is desperately needed not only to understand the status of the biodiversity but also to guide conservation policies and priorities. The unique flora of Madagascar still makes it an exceptional site for multinational bioprospecting projects, despite these ecological pressures.

Famous Malagasy endemics include *Andansonia* species (baobab trees and *Catharanthus roseus* (rose periwinkle). *Catharanthus roseus* is the source of the groundbreaking FDA-approved cancer drugs, vincristine and vinblastine, for the treatment of childhood leukemia. These indole alkaloids were discovered serendipitously during an antidiabetic drug discovery screening performed at Eli Lilly and Company. The roots of *C. roseus* have been used in Madagascar for treating various

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Pharmacognosy Field Notes: A Multinational Collaboration for Small Molecules Discovery from Plants of Madagascar

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illnesses including diabetes. From the success story of Malagasy vinca alkaloids, I like to tell my students that "Serendipity in drug discovery is not just the fact of being lucky, but it is also the result of scientific curiosity-driven observations and comprehensive interpretations."

According to the World Health Organization, 80% of the world's population still relies on traditional medicines. Similarly, most of the rural population of Madagascar even now uses medicinal plants for their healthcare needs. This is not only due to poverty that prohibits the access and the use of western medicines and the unreliable healthcare system in the rural area of the country, but also the efficacy of some traditional medicines. For example, many traditional formulations were used in Madagascar during the COVID-19 pandemic with mixed results. All around Madagascar, traditional medicinal plants are being sold at most markets, including those marketplaces specializing in medicinal plants.

A medicinal plant market in Antananarivo.

There has been a long history of international collaboration in the study of medicinal plants of Madagascar. Two major collaboration projects between researchers from Madagascar and the United States include the National Cancer Institute (NCI) cytotoxicity screening program starting from 1986 for about a decade and the International Cooperative Biodiversity Group Madagascar project (1998-2013) mainly sponsored by the Fogarty International Center and NCI led by ASP Fellow Dr. David Kingston.

Meeting with the researchers at CNARP (Madagascar). Left to right: Drs. Stephan Rakotonandrasana (botanist at CNARP), Otsuka Hideaki (Yasuda Women's University), Riana Rakotosaona (Director of CNARP), Inagaki Masanori (Yasuda Women's University), and Liva Rakotondraibe (The Ohio State University).

My own interest in Malagasy medicinal plants started when I was just a kid, and my family of ten moved to the countryside where my parents worked as public-school teachers. Plant-based traditional medicines are commonly used in Madagascar, especially in the rural areas where we moved, and people there believe that effective cure comes from the bitterness of the formulations. I have been working on plants from Madagascar since 1996 when I performed my master's research thesis on the composition of essential oils of two *Vepris* species.

Before any field work begins, it is critical to establish a strong foundation with regards to intellectual property. In pharmacognosy, most plant bioprospection starts from ethnobotanical surveys and identification that is further linked with chemotaxonomical interpretation to select plants that can be of interest. Since most plant bioprospection activities occur in tropical and

Since most plant bioprospection activities occur in tropical and subtropical areas which host about 50% of the world's plants, field scientists make sure that the Nagoya Protocol is respected.

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Pharmacognosy Field Notes: A Multinational Collaboration for Small Molecules Discovery from Plants of Madagascar

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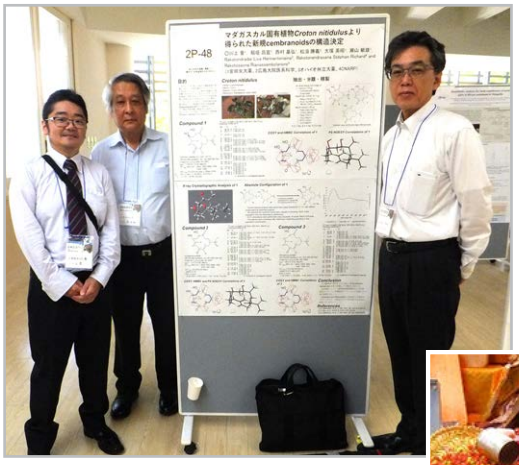

Otsuka, Inagaki, and Kawakami presenting a poster with results from their Madagascar fieldwork on the endemic plant *Croton nitidulus* at the 2023 Japanese Society of Pharmacognosy annual meeting in Sendai.

Above, Dr. Rakotondraibe collecting plants.

At right, a plant and vegetable market in Madagascar.

subtropical areas which host about 50% of the world's plants, field scientists make sure that the Nagoya Protocol is respected. The OSU CNARP collaboration in Madagascar started with the approval of a material transfer agreement between CNARP and OSU and between CNARP and Yasuda Women's University. This agreement described the benefit-sharing and the aims bioprospection activities. Before any plants can be collected, appropriate permissions from authorities in Madagascar are required. The local government always makes sure that any proposed activities and collections will not harm the environment. Furthermore, these authorities want to see that the results of the proposed activities will benefit local communities on some level. A research authorization letter issued by the Direction Generale de la Gouvernance Environmentale must be acquired before a collection can start. We obtained this letter for our project by submitting many documents, including our research plan and a description of the investigators and their institutions.

In June 2017, we carried out fieldwork on plant collection for a project in collaboration with the CNARP (led by Drs. Riana Rakotosaona and Stephan Rakotonandrasana) and OSU. The three Japanese researchers (Drs. Hideaki, Inagaki Masanori, and Susumu Kawakami) and I met at Charles de Gaulle Airport (Paris) and took a 10-hour flight to Antananarivo, Madagascar. Since we arrived at night, we did not schedule any activities the next day. Instead, we had a courtesy meeting with the host researchers at CNARP to discuss our plant collection schedule.

We left Antananarivo very early in the morning of our second day for a collection trip to the eastern part of Madagascar (Moramanga/Alaotra Mangoro region). We stayed at Vakona Forest Lodge which is located about 25 km east of Moramanga and hosts several species of friendly lemurs as well! CNARP prepared and collected all legal documents and made sure that we had them before we began collection.

A formidable challenge to our fieldwork in Madagascar was navigating the forest roads. Many of the forests in Madagascar are maintained by local communities, governed by their village leaders. They work closely with the national government representatives to manage their forests. I imagine there are still many important unrecorded traditional medicines that escape scientific exploration due to the difficulty in accessing communities in these remote forests. For our research, before we perform our collection activities, we had to contact the village leaders to ask permission by showing our permits. Bio-

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We collected about ten plant species and most of them in the Euphorbiaceae. Although the genera of the collected plants were identified for the most part by our team, the determination of their taxon at species level required more information and was carried out by botanists at CNARP.

Pharmacognosy Field Notes: A Multinational Collaboration for Small Molecules Discovery from Plants of Madagascar

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Rakotondraibe and Otsuka together in Madagascar collecting plants.

prospection is forbidden in many parks and protected areas of Madagascar due to the presence of endangered species.

On the third day, we first visited the head of the village and representatives of the Vondron'Olona Ifotony to show them our collection permits and learn more about local collection rules. Voucher specimens of each plant being collected were obtained and included geographical location, using our GPS devices. We collected about ten plant species and most of them in the Euphorbiaceae. Although the genera of the collected plants were identified for the most part by our team, the determination of their taxon at species level required more information and was carried out by botanists at CNARP. The plant collections were later taken to a nearby local government office to validate proper collection procedures were followed, e.g., quantity and number of species collected. Plants were extracted locally since plant tissue cannot be exported from Madagascar. We always try to donate extraction equipment to local collaborators to help improve their laboratories and train local scientific partners.

The last two days of our trip were dedicated to sightseeing, including the old castle (Rova) located in the center of Antananarivo and the lemur and crocodile parks located outside the capital. Collaborators from CNARP also showed us their plant voucher specimens.

Our fieldwork has happily started to yield exciting results in the laboratory. From our collection of *Omphalea oppositifolia* (Euphorbiaceae), five new *ent*-rosane-type diterpenes, ophalines A-E, have been isolated. In addition, from the Malagasy endemic *Croton nitidulus* new cembranoids have been identified, and these results were presented at the annual meeting of the Japanese Society of Pharmacognosy which was held in Sendai on September 10, 2023. Our work on the plants from this field trip continue to yield interesting results. ■

Collection team members with the famous baobab trees of Madagascar.

Conference Calendar

The *Newsletter* is pleased to announce the following upcoming conferences and meetings. The events portrayed here reflect what listings and notices the *Newsletter* has specifically received. For a more extensive calendar, please visit the ASP website at www.pharmacognosy.us. If you have a conference or event you would like mentioned, please send us relevant information, including any graphics, at **asp.newsletter@lehman.cuny.edu**.

ASP Natural Product Sciences Webinar

Zoom Seminars

See website for dates and times.

www.pharmacognosy.us/natural-product-sciences-webinar/

C&EN Webinars

Various Days and Times

cen.acs.org/collections/webinars.html

4th Synthetic Biology of Natural Products Conference

May 10-13, 2024

Cancun, Mexico

www.fusion-conferences.com/conference/160

International Congress on Natural Products Research (ICNPR 2024)

July 13-17, 2024

Kraków, Poland

www.icnpr2024.org

Gordon Research Conference: Natural Products and Bioactive Compounds

Natural Products: Diversity and Integration

July 28-August 2, 2023

Andover, New Hampshire

www.grc.org/natural-products-and-bioactive-compounds-conference/2024/

American Society of Pharmacognosy

Capital Communiqués

Natural Product-related News from NIH and Beyond

By Barbara C. Sorkin, PhD

AN UPDATE ON THE US FEDERAL BUDGET

- As of March 23, all appropriations bills comprising the US federal budget for fiscal year 2024 were passed and signed by President Biden. According to the American Association for the Advancement of Science, non-defense research and development appropriations decreased by 11.3% in the final budget. The combined budget for research at the US Department of Agriculture increased slightly, the National Science Foundation's budget increased by 2.8%, and the National Institutes of Health's budget decreased by 0.8%. Within the overall NIH budget, funding for some NIH Institutes increased somewhat.

AN UPDATE FROM THE NATIONAL SCIENCE FOUNDATION

- On January 29 the National Science Foundation announced its first Regional Innovation Engines, a program authorized by the 2022 CHIPS and Science Act. The 10 inaugural "engines" include one focused on agriculture technology and one focused on climate resilience.

AN UPDATE FROM THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

- On December 8 the National Institute of Standards and Technology (NIST) released for public comment the Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights. Responses to a request for information on the draft guidance framework will inform NIST and the Interagency Working Group for Bayh-Dole (IAWGBD) in developing a final framework document that may be used by an agency when deciding whether to exercise its march-in authority.

AN UPDATE FROM THE US DEPARTMENT OF AGRICULTURE

- The US Department of Agriculture's National Institute of Food and Agriculture has awarded $4.45 million to tribal colleges to support projects that include research on the effects of traditionally used plants in diabetes management and the control of invasive species.

UPDATES FROM THE US NATIONAL INSTITUTES OF HEALTH (NIH)

Kimryn Rathmell
PHOTO: JOE HOWELL

Martina Schmidt
PHOTO: LISA HELFERT

- On December 18 W. Kimryn Rathmell became the 17th Director of the NIH National Cancer Institute (NCI). Dr. Rathmell previously led the Vanderbilt University Medical Center as physician-in-chief and chair of the Department of Medicine.
- To ensure pdf attachments in your grant applications, progress reports and other documentation submitted to NIH are readable by reviewers, NIH staff, and NIH systems, the NIH Office of Extramural Research has provided a number of tips here.
- Updated NIH guidance on research with foreign collaborators: NIH clarified its policy on foreign subawards and consortia in an NIH guide notice released last September, NOT-OD-23-182, NIH Final Updated Policy Guidance for Subaward/Consortium Written Agreements. Martina Schmidt, director of the Division of Extramural Activities at the NIH National Center

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for Complementary and Integrative Health (NCCIH), commented: "The notice underscores NIH's interest in strong international research collaborations and explains some policy requirements." Her blog continues: "In a nutshell, recipients of NIH grants, including foreign collaborators receiving subawards, must comply with Federal requirements on oversight. The primary recipient must ensure monitoring processes are in place so there is compliance with the terms and conditions of the award. Most importantly, this policy requires subaward agreements to stipulate that foreign subrecipients will provide the primary recipient with access to copies of all lab notebooks, data, and documentation supporting the research outcomes as described in the Research Performance Progress Report. Access to the records will be at a frequency of no less than once per year, which aligns with the timing of progress report submission. The requirement was effective January 1, 2024 and applies to all new and existing subaward agreements. Current subawards may need to be renegotiated or revised. To find out more, I recommend a blog post on NIH's foreign subagreement policy by Dr. Michael Lauer, NIH's deputy director for extramural research, and the NIH Subawards webpage."

- For NIH small business applications and awards, NOT-OD-23-139, Implementation of the NIH SBIR and STTR Foreign Disclosure Pre-Award and Post-Award Requirements (released June 12, 2023) provides information regarding disclosure and post-award reporting requirements for small businesses. Further information on this Notice is provided in NOT-OD-24-029, Clarification of Implementation of the NIH SBIR and STTR Foreign Disclosure Pre-Award and Post-Award Requirements (released November 14, 2023). Dr. Schmidt comments on this: "A major message is that NIH will not mitigate identified security risks prior to award. For (all currently competing) SBIR and STTR applications…, applicants will have to submit a completed disclosure form via the Just-In-Time (JIT) process. The Foreign Disclosure and Risk Management webpage of the NIH Small Business Education and Entrepreneurial Development (SEED) Office provides more details."

NIH FUNDING OPPORTUNITIES

✦ Potentially useful for those seeking funding for research on Cannabis species:

- A Notice of Special Interest (NOSI) from NIDA: NOT-DA-22-048, Targeting the Endocannabinoid System for Brain Health and Acute and Chronic Diseases
- A NOSI from NCCIH: NOT-AT-22-027, Promoting Mechanistic Research on Therapeutic and Other Biological Properties of Minor Cannabinoids and Terpenes
- A NOSI from NCI: NOT-CA-22-085, Basic Mechanisms of Cannabis and Cannabinoid Action in Cancer

✦ New in the NIH Consortium Advancing Research on Botanicals and Other Natural Products (CARBON) Program, three single receipt date funding opportunities:

- Botanical Dietary Supplements Translational Research Teams, RFA OD-24-014, technical assistance webinar on Tuesday, May 7, at 2 pm ET.
- Limited Competition: Research Resource for Natural Product Nuclear Magnetic Resonance Data, RFA AT-24-007, and

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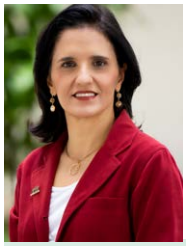
NIH-SUPPORTED RESOURCES

- New toxicology report on black cohosh root extract: In December the NIH National Institute of Environmental Health Sciences' National Toxicology Program recently posted a new technical report, TR-603, CASN 84776-26-1, titled "Toxicology and Carcinogenesis Studies of Black Cohosh Root Extract Administered by Gavage to Sprague Dawley Rats and Female B6C3F1/N Mice." More at https://ntp.niehs.nih.gov/publications/reports/tr/600s/tr603.
- New phytochemical calibration solution reference materials have recently been released by Cerilliant Corp/ MilliporeSigma through support from the NIH Office of Dietary Supplements:

Catalog link	Description	Analytes with assigned values
A-204	12-deoxywithastramonolide	12-deoxywithastramonolide
A-197	Ashwagandha Dietary Ingredients Mix	withaferin A, withanolide A, withanolide B, withanoside IV, withanoside V
A-205	Withanone	withanone
E-136	Echinacea Phenolic Mix	1,3-dicaffeoylquinic acid; caftaric acid; chicoric acid; chlorogenic acid; echinacoside
E-139	ß-Sitosterol	ß-Sitosterol
E-140	Echinacea Isobutyl Amide Mix	dodeca-2E,4E,8Z,10E/Z-tetraenoic acid isobutylamide; dodeca-2E,4E-dienoic acid isobutylamide
S-144	Silybum Mix Solution	isosilybin, silybin, silychristin, silydianin, taxifolin
D-199	Dehydrosilybin	Dehydrosilybin

PRESENTATIONS, WORKSHOPS, WEBINARS

- The NCI is offering a virtual Integrative Medicine course consisting of a series of real time and pre-recorded hour-long seminars on topics including natural products research, traditional Chinese medicine, Ayurveda, dietary supplements, Cannabis and the microbiome. Here's the full schedule of real time webinars and link for the required registration.
- Upcoming NIH Office of Dietary Supplements (virtual) Seminars **(all Wednesdays):**
  - **May 22, 2024, 11 am ET**, *Effects of Soluble Corn Fiber on Bone Metabolism in Children* **Cristina Palacios**, Florida International University, Miami, FL
  - **June 12, 2024, 4 pm ET**, *Botanical Dietary Supplement Safety* **Joanne Barnes**, Faculty of Medical and Health Sciences, Pharmacy, Auckland, New Zealand



Cristina Palacios
PHOTO: FIU

Jimmy Orjala, PhD, Treasurer
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