



# The American Society of Pharmacognosy

The ASP Newsletter: Volume 52, Issue 2

Discovering  
Nature's  
Molecular  
Potential

## Joint Meeting in Copenhagen Approaches



Copenhagen, Denmark

By Dr. Anna Jäger, Conference Chair

The 9<sup>th</sup> International Joint Natural Products Conference (JNPC2016), to be held July 24 -28, 2016, in Copenhagen, Denmark, is rapidly approaching.

Our venue is the Tivoli Congress Center located in central Copenhagen, in walking distance to the old part of the city and the many attractions found there. With over 1,000 registered (normal registration ends July 15), it is shaping up to be the largest meeting of natural products researchers this year.

The Scientific Organizing Committee has assembled an exciting and diverse program. Invited speakers and the titles of their presentations can be found on our website [www.jnpc2016.dk](http://www.jnpc2016.dk),

along with links to their biographical information. In addition to the invited lectures, over 1,200 abstracts have been submitted for either oral or poster presentations, covering an exceptional spectrum of natural products research.

On Sunday, July 24, there will be pre-conference workshops, with one for our young delegates (Young Researcher's Workshop) and a workshop on Regulatory Affairs. Further, there will be a pre-symposium on 'Advances in (Bio)analytical Techniques Applied to Natural Products Research.' The opening ceremony of the conference will take place Sunday afternoon, followed by

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## EDITOR'S CORNER



I am enjoying the long summer days here in New York, but they will be short compared to the endless Scandinavian days that many of us will be enjoying at the joint meeting in Copenhagen, Denmark, coming up in late July. I do hope to see many ASP members at the meeting, and I am looking forward to the getting to interact with you as my final days as ASP President. The lead article for this issue centers on the last minute arrangements for the joint meeting and includes the talks of the ASP awardees, including Drs. De-an Guo (Varro E. Tyler Prize) and William Gerwick (Norman R. Farnsworth Research Achievement Award). These two prizes are the major awards that the ASP presents each year, and I hope you will make a special effort to hear these award-winning talks at the meeting.

I was pleased to attend the ASP Interim Meeting in Oxford, Mississippi, in April, and I enjoyed meeting a number of ASP members. This meeting was hosted by the University of Mississippi, and organized by ASP members Drs. Ikhlas Khan and Larry Walker. I appreciate their hard work in making this meeting successful. As I noted in my welcome address to the attendees, "The history of the ASP and University of Mississippi have been tightly intertwined. Three ASP Past Presidents come from faculty at Ole Miss, Jim McChesney, Charlie Hufford, and Alice Clark. Ole Miss has hosted ASP Annual Meetings in 1983, 1995, and 2014. And this is the second time that Ole Miss has hosted the ASP Interim Meeting; the previous one was in 2008. Amazingly, 50 members, almost 10% of our membership, come from the University of Mississippi."

I am very grateful for the longtime support of University of Mississippi to the ASP, and I was disheartened to learn, on the second day of the conference, that the New York Governor Andrew Cuomo had issued Executive Order #156 banning all non-essential state travel to Mississippi and North Carolina. This Executive Order is in response to state laws that allow discrimination against lesbian, gay, bisexual, and transgender individuals. I communicated my concern to ASP member and University of Mississippi Vice Chancellor Alice Clark, "... You and your colleagues always make me feel so welcome-your hospitality is legendary. I hope the good people of Mississippi can see the value in making it clear how welcoming they can be to ALL peoples. Until that time, I am afraid I will not be able to return on official CUNY business, and this makes me sad indeed."

Vice Chancellor Clark immediately replied to my e-mail with a thoughtful response, "Chancellor Vitter released a letter [[http://flagship.olemiss.edu/chancellor-letter\\_04-05-2016.html](http://flagship.olemiss.edu/chancellor-letter_04-05-2016.html)] shortly after Governor Bryant signed the legislation reaffirming our University's commitment to a welcoming and inclusive environment, as guided by our Creed [[www.olemiss.edu/info/creed.html](http://www.olemiss.edu/info/creed.html)]. We will continue to treat everyone associated with or visiting the University of Mississippi with dignity and respect." I appreciate these efforts of the University, and I hope for the best in Mississippi and North Carolina.

I always learn something new when I read Dr. Dave Newman's "Hot Topics in Pharmacognosy," and in his latest article, he reminds us that the very definition of "pharmacognosy" can even include clays (and their associated microbes) that may be useful for the treatment of colistin-resistant microbes. Dr. Georgia Perdue keeps us up to date on happenings in Washington in her regular column, and I am heartened to read about the increase in the NIH budget, as well the fast-track review of combretastatin A4 phosphate/fosbretabulin, a drug worked on by two important ASP members, Drs. George Pettit and Gordon Cragg. There are many other columns in the *Newsletter*, and I hope you will take the time to read through them.

I hope you have a wonderful summer. Mød dig i København!

Dr. Edward J. Kennelly

## 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/](http://www.pharmacognosy.us/jobs/)

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# 2016 Schwarting and Beal Awards

By Drs. A. Douglas Kinghorn and Amy Keller

This year's 2016 Arthur E. Schwarting Award was given to Johanna Michl, Geoffrey C. Kite, Stefan Wanke, Oliver Zierau, Gunter Vollmer, Christoph Neinhuis, Monique S.J. Simmons, and Michael Heinrich for "LC-MS and  $^1\text{H}$  NMR-based metabolomics analysis and in vitro toxicological assessment of 43 *Aristolochia* species" in *J. Nat. Prod.* 2016, 79, 30-37. (This article was published on the ASAP feature on December 26, 2015). The 2016 Jack L. Beal Award was awarded to Stephanie J. Conn, Shannon M. Vreeland, Alexandra N. Wexler, Rebecca H. Pouwer, Ronald J. Quinn, and Stephen Chamberland, for "Total synthesis of clavatadine A" in *J. Nat. Prod.* 2015, 78, 120-124.

Dr. Heinrich represents the Research Cluster Biodiversity and Medicines/Centre for Pharmacognosy and Phytotherapy, University College of London College of Pharmacy, London, U.K. Other institutional addresses on this collaborative winning paper were for co-authors at the Royal Botanic Gardens, Kew, Richmond, Surrey, U.K., and the Technical University of Dortmund, Dortmund, Germany.

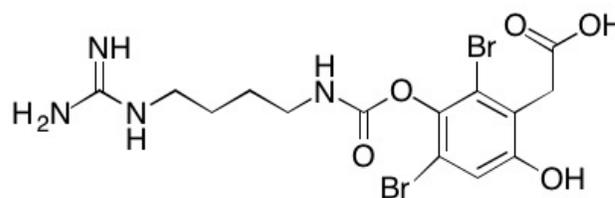
When asked about the award, Dr. Heinrich told the *Newsletter*, "Of course, receiving the very prestigious Schwarting Award is wonderful news and we are very grateful to the *J. Nat. Prod.*, its Editor in Chief Doug Kinghorn, and the selection committee, as well as to the entire ASP. However, there is more to it: we truly appreciate the high level of meticulous scholarship maintained by the *J. Nat. Prod.* at a time when mass publication has become a norm. The quality of review and editorial assessment has been a great experience and it is simply wonderful to see that this level of scholarship is fostered by the Society and the *Journal*."

When his paper was published, Dr. Chamberland was in the Department of Chemistry, University of Central Washington, Ellensburg, Washington, but he is now at the Department of Chemistry, Utah Valley University, Orem, Utah. His paper was co-authored by colleagues at the Eskitis Institute, Griffith University, Brisbane, Queensland, Australia.

Dr. Chamberland related, "I am profoundly humbled, honored, and thrilled that our manuscript was chosen from among many deserving submissions to receive the prestigious Jack L. Beal Award. I thank the *Journal of Natural Products* Editorial Staff and the ASP ad hoc committee members for their distinguished service and for recognizing our work. Without substantial con-

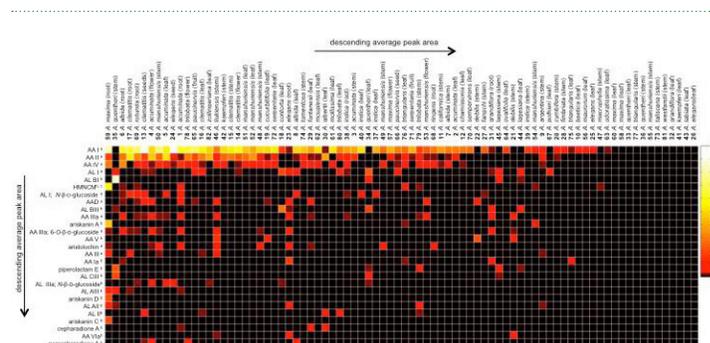


The Chamberland Group: Mr. Jacob Buchanan, Ms. Sydney Bouchey, Ms. Rebecca Maverick, Dr. Stephen Chamberland, Ms. Kathryn O'Neal, Mr. Austin Calaway, and Mr. Christopher Malmberg.



Clavatadine A.

DR. CHAMBERLAND



Heat map comparing relative LC-MS peak areas of identified aristolochic acid analogues showing a quantitative comparison of the main toxicologically relevant metabolites.

tributions from undergraduate student co-authors Stephanie J. Conn, Shannon M. Huffman (Vreeland), and Alexandra N. Wexler, the first total synthesis of the Factor XIa inhibitor clavatadine A

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## Joint Meeting in Copenhagen Approaches!

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the get-together party on the roof garden of the conference center.

Each day of the conference will have plenary lectures, keynote lectures, and three concurrent parallel sessions of short lectures covering various topics of interest to natural products researchers. In the afternoons there will be poster sessions. The final program with all speakers can be downloaded from the conference homepage. The formal scientific program will begin on Monday morning, July 25, where Dr. De-an Guo will give the ASP 2016 Varro E. Tyler Prize lecture. The conference will end with Dr. William H. Gerwick lecture and acceptance of the ASP 2016 Norman R. Farnsworth Research Achievement Award.

The social program includes an evening in the Copenhagen Botanical Garden, the conference dinner (where we will sail to the venue), and the excursion to the botanical

habitats of Zealand, the island where Copenhagen is situated, with the final destination of the Viking Ship Museum.

A popular activity in Copenhagen is walking around in the old city, stopping for a latté at one of the many cafés. As a tourist, it is a good idea to take a boat tour, such as the one planned with the conference dinner. This gives a good portrait of Copenhagen as a port city and shows old and new architecture.

The weather is variable, so bring both summer clothes and a jacket or raincoat. For those interested in swimming at the harbor, or taking the metro to the beach in the long summer evening, do not forget swimwear.

Registration is still open so please submit your application through the conference website ([www.jnpc2016.dk](http://www.jnpc2016.dk)) immediately if you plan on attending. We look forward to seeing you in Copenhagen! ■

## 2016 Schwarting and Beal Awards

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*Aristolochia indica* (fruiting), the most widely used *Aristolochia* species and one of the 43 species investigated in the paper.

would not have been possible. I especially want to thank our Australian collaborators, most notably Distinguished Professor Dr. Ron Quinn and Dr. Rebecca H. Pouwer, for providing the biological assay data that helped to confirm the structure of our synthetic clavatadine A and to authenticate its inhibitory activity.”

In 2001, the Foundation Board of the American Society of Pharmacognosy (ASP) instituted the Schwarting and Beal Awards for best papers in *J. Nat. Prod.* In this manner,

two former distinguished editors of the journal are fondly remembered. The Schwarting Award is open to all papers published in the journal within a given year (either in print or electronically). In turn, the Beal Award is awarded to younger investigators [i.e., persons within 12 years of receiving their PhD degree or within 10 years of gaining their first professional appointment (e.g., Assistant Professor or an equivalent position in industry or government)].

A two-tier process was used to determine the winners of the best papers published in *J. Nat. Prod.* in 2015, with editors Drs. Daneel Ferreira, A. Douglas Kinghorn, Cedric J. Pearce, Philip J. Proteau, and Steven M. Swanson having nominated two papers each for the Schwarting Award and one each for the Beal Award. ASP President Edward J. Kennelly then appointed an ad hoc committee [Drs. John Beutler (U.S. National Cancer Institute, Frederick, Maryland), Chair, Shmuel Carmeli (University of Tel Aviv, Tel Aviv, Israel), and Mark Hamann (Medical University of South Carolina, Charleston, South Carolina)] to make the final selections. The corresponding authors of these papers will receive a check and a plaque from the Foundation of the ASP in honor of their achievement. The above-mentioned papers may be accessed freely from the home page of *J. Nat. Prod.* (<http://pubs.acs.org/journal/JNP>).

Congratulations to Drs. Heinrich and Chamberland and their co-authors! ■

# UNAM Recognizes Mata as Professor Emeritus

By Dr. Mario Figueroa

**D**r. Rachel Mata, Professor in the Department of Pharmacy at The National Autonomous University of Mexico (UNAM) Mexico City, Mexico, has received the designation of Emeritus Professor. This title is for individuals who, for at least 30 years, have served the university with great dedication and carried out exceptionally valuable work. Dr. Mata has dedicated her highly productive career to natural products research and mentored numerous students; most now have successful careers in academia or industry.

Dr. Mata's research has focused on the characterization of biodynamic molecules from plants, fungi, and lichens from the great Mexican biodiversity and traditional medicine. Some of her research results have been useful in gastrointestinal ailments, diabetes, and tuberculosis.

Dr. Mata received her BS in Pharmacy from the Universidad Central de Venezuela, Caracas, Venezuela, in 1971, her MS in Pharmaceutical Chemistry, and her Ph.D. in Pharmacognosy from Purdue University, West Lafayette, Indiana, in 1976 and 1979 respectively. Her career at UNAM started in 1982 with a postdoctoral position with Dr. Alfonso Romo de Vivar, and she was soon promoted to a tenure-track faculty position in Chemistry.

Her scientific work is reflected in more than 180 peer-reviewed publications with around 4,500 citations, several book chapters, one patent, and two medicinal plant monographs. She has participated in countless meetings, symposia, conferences, and workshops around the world, and has served as a referee for many journal



Professor Emeritus Mata

manuscripts. Dr. Mata was an associate editor of the *Journal of Natural Products*, *Current Topics in Medicinal Chemistry*, and *Natural Products Communications*. Dr. Mata was also President of the Phytochemical Society of North America and has been on scientific committees and societies in Mexico, the US, and other Latin American countries.

Dr. Mata has directed over a hundred theses: 35 doctoral, 41 masters, and 45 undergraduate. She has also contributed to the training of hundreds of undergraduate and graduate students inside the classroom, designing key courses for Pharmacy, and the Masters and Ph.D. programs in Chemistry.

Dr. Mata's career has been a highly decorated one. Some of the awards she has received include the Norman

R. Farnsworth Research Achievement Award from the ASP in 2014, Premio Nacional de Química Andrés Manuel del Río from the Mexican Chemical Society in 2013, Premio Martín de la Cruz from the National Health Department, Mexico, in 2002, and the Premio Universidad Nacional from UNAM in 2000. She was also appointed as Distinguished Alumni at Purdue in 1997, and last year, the National Researchers System from Mexico honored her with the National Emeritus Researcher title.

Dr. Mata is not only an outstanding scientist, but also an amazing person. She has managed to form a wonderful family of scientists and raise her own family at the same time. As one of her former students, I am grateful for everything she has taught me and proud to be a former student. Congratulations to Dr. Mata! ■

**Dr. Mata's research has focused on the characterization of biodynamic molecules from plants, fungi, and lichens from the great Mexican biodiversity and traditional medicine.**

# Election 2016: New Leaders, Same Old Name

By Dr. Nicholas Oberlies and Ms. Laura Stoll

The results of the 2016 election held online are now complete with a total of 183 ballots received. Dr. Cedric Pearce will serve as the Vice President (2016-2017) and ASP President (2017-2018), and Dr. Kerry McPhail will serve four years as a member of the Executive Committee. The Society is indebted to them for their willingness to serve in these important roles. Current ASP Vice President Dr. Cindy Angerhofer will serve as President (2016-2017) in accordance with the ASP Constitution.

Dr. Pearce is well-known in the Society as an Associate Editor of the *Journal of Natural Products*. He is also an entrepreneur and has a biotech company called Mycosynthetix, Inc. Dr. McPhail is an Associate Professor at Oregon State University, Corvallis, Oregon.

Perhaps the most contentious issue on the ballot was the non-binding name change question. At the General Meeting in 2015, it was agreed that there would be a non-binding name change vote on the ballot. This proposition was driven in part by the Society's rebranding initiative, and a concern that the word "pharmacognosy" was not understood well by many scientists and the general public.

As agreed to by the ASP Executive Committee, if 50% of the vote indicated NOT to change the name, there would be no further vote or action on



Dr. Cedric Pearce



Dr. Kerry McPhail

a name change. In total, 56.3% of the ballots cast voted NOT to change the name of the Society. The name will remain the American Society of Pharmacognosy.

ASP President Edward Kennelly commented, "As I read through the history of the American Society of Pharmacognosy, we have considered name changes on many occasions, and each time the ballot initiatives have not been successful. No single name can truly encompass everything the Society does, but to me the name is not as important as what the

ASP does with its resources, like organizing high-quality annual meetings, publishing a premier scientific journal, and recognizing members at all stages of their careers with awards. I hope we can continue in our rebranding initiative by highlighting these and other important activities of the Society."

In addition, there were numerous constitutional changes on the ballot, and each of these changes, many minor wording changes, passed. Special recognition is given to the Constitution and Bylaws Committee, Chaired by Dr. Gil Belofsky, with members Drs. Maged Sharaf and Steve Swanson.

We thank all ASP members who participated in the voting process this year, and ASP Business Manager, Ms. Laura Stoll, for creating a clear ballot using Memberclicks. Teller's Committee, comprised of Drs. Nicholas Oberlies (Chair), John Porter, and Xiaolan Kou, are also acknowledged. ■

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# New Members of ASP 2016



ASP would like to welcome 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 5 domestic full members, 2 international members, and 7 associate members. We look forward to meeting you and learning more about you and your work.

## ACTIVE MEMBERS

**Dr. Balwantsinh Chauhan**  
Schaumburg, Illinois

**Dr. Patrick Donnelly**  
Urbana, Illinois

**Ms. Kelsey Gustafson**  
Ronkonkoma, New York

**Dr. Marc Stadler**  
Braunschweig, Germany

**Bin Sun**  
Brattleboro, Vermont

**Dr. Michael Tims**  
Laurel, Maryland

**Linyuan Wang**  
Beijing, China

## ASSOCIATE MEMBERS

**Ms. Allyson Bos**  
Saint John, New Brunswick

**Mr. Andrew Flewelling**  
Saint John, New Brunswick

**Brian Guo**  
Chicago, Illinois

**Christopher Leber**  
San Diego, California

**Mr. Taj Muhammad**  
Uppsala, Sweden

**Mr. Paul Scesa**  
Deerfield Beach, Florida

**Yingli Zhu**  
Beijing, China



*Welcome to ASP!*

# ASP Website Hacked Multiple Times



*Dr. John R. Porter*

**T**he website of the American Society of Pharmacognosy was hacked three times between March 15 and June 16, 2016. The hacks never affected direct access to the site through the full website address ([www.pharmacognosy.us](http://www.pharmacognosy.us)), but it did cause erroneous results from the majority of the search engine sites, such as Google, Yahoo, and Bing.

The first hack led to a redirect to an online casino gaming site. The second hack, less benign, led to a pornography site. The third hack occurred while files were being cleaned. All of these hacks were due to ongoing issues with our former server management vendor. The Society had been planning to redesign the website, but these changes have been delayed due to the hack.

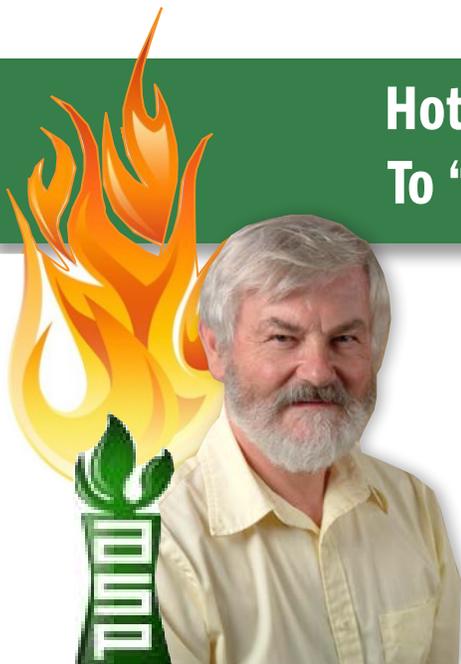
ASP Executive Committee agreed in April to employ a new vendor, Mr. Rick Valdez, to resolve the problems. He was able to fix the hack, migrate the ASP website to a commercial hosting server (GoDaddy), and we then implemented new security measures. Hacking is a nuisance and obviously serves no good purpose to legitimate users but it is a perpetual problem experienced by many organizations. ASP leadership who were involved in helping to resolve the issue include Drs. Cindy Angerhofer, Edward Kennelly, Jim McAlpine, and ASP Business Manager Ms. Laura Stoll.

ASP President Kennelly stated, "I sincerely apologize for the inconvenience the website hack has caused to ASP members and the public. Many members have reported the problems to me and other officers, and I assure you we worked to correct the hack as fast as we could. With the changes that have been implemented, I hope we will avoid such nefarious issues in the future. Furthermore, I have discussed additional organizational changes with the ASP Executive Committee and Webmaster to ensure a more nimble response in the future."

As a consequence of migration of the site to GoDaddy, some of the links within the ASP web pages are temporarily unavailable. At present, the site has many errors that are being resolved as they are identified. We will be working to maintain a functional and useful website for the society members and those interested in natural products research. ■

**We will be working to maintain a functional and useful website for the society members and those interested in natural products research.**

# Hot Topics in Pharmacognosy: To “Escape” or Not to “Eskape”



By Dr. David Newman

Our title's play on terminology is deliberate. “ESKAPE” when capitalized, is the acronym given by clinical microbiologists and infectious disease physicians to the coterie of resistant

microbes better known as *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Enterobacter* species. With the recent news about colistin-resistant microbes that are also resistant to carbapenems appearing in the continental U.S., the search for antibiotics that can control these agents needs to move into full gear.

In a recent publication in the online journal *Frontiers in Microbiology*, Tiwari and colleagues reviewed compounds from herbal sources that had activity against *A. baumannii* and other pathogens. This article listed some interesting compounds that demonstrated activity, tended to be from Ayurvedic sources, and ranged from well-known compounds such as curcumin, eugenol, berberine, and thymol, etc., to paeonol.<sup>1</sup>

In the same time frame however, there were three very interesting papers published, dealing with various aspects of this problem. Though not the first, the perspective by Fisher and Mobashery<sup>2</sup> gives the background and costs of discovery for new antibiotics, whether from natural products or synthesis; this sets the stage for the other two papers. In the first, Fleeman et al., demonstrated nicely how using quite simple molecules based mainly on guanidine substitution on known classes of antibiotics, led to very interesting molecules with *in vivo* activity in rel-

evant murine models.<sup>3</sup> Then in the second, Grace et al. demonstrated the effect that cationic polymers with a low degree of polymerization had on certain pathogens.<sup>4</sup>

One may now ask, “Where is the pharmacognosy at this stage?” It comes along from two very interesting and recent papers, and an earlier paper, that cover an area not usually considered under this term. These papers are from studies of the use of clays by both Canadian indigenous peoples and in the treatment of Buruli ulcers. Buruli ulcers are caused by a toxin expressed by *Mycobacterium ulcerans*, and the only effective treatment is excision of the wound. In 2004, a group at the United States Geological Survey reported on the utility of clays as treatments,<sup>5</sup> further elaborated on by Haydel et al in 2008, demonstrating that clay minerals had significant *in vitro* activities against sensitive and resistant microbes.<sup>6</sup>

The story languished for a few years until Dr. Julian Davies at the University of British Columbia, Vancouver, Canada, was asked to look at the properties of a clay known as “Kisameet Clay (KC).” This material had been used for centuries by the local First Nations (Heiltsuk) peoples, appeared to have excellent therapeutic properties, and seemed to be different on mineralogical investigation from the other local clay deposits. It was known from published and unpublished investigations that KC has significant populations of microbes (1,000-3,000 taxa) including *Actinobacteria*, and may have a resident “reservoir” of bioactive compounds. However, investigation of the properties of 1% aqueous extracts of KC demonstrated very significant activities against a wide variety of resistant ESKAPE microbes with no resistance shown as yet. *In vivo* studies have not yet been performed or reported, but there are anecdotal data of the Heiltsuk using such extracts

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**With the recent news about colistin-resistant microbes that are also resistant to carbapenems appearing in the continental U.S., the search for antibiotics that can control these agents needs to move into full gear.**

## Hot Topics in Pharmacognosy: to “Escape” or Not to “Eskape”

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for treatment without reports of toxicity. The two recent papers covering these responses are available from mBio and should be read by people interested in this topic.<sup>7,8</sup>

Thus, pharmacognosy is not just the study of plants and their associated “organisms,” nor the study of marine invertebrates and others, but also may have significant inorganic or bio-inorganic chemistry involved. ■

**“ESKAPE” is the acronym given by clinical microbiologists and infectious disease physicians to the coterie of resistant microbes better known as *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa* and *Enterobacter species*.**

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# Meet a New ASP Member

This issue, we meet new ASP member, Ms. Kelsey Gustafson, a Nutrition Scientist specializing in botanicals at NBTY Inc., a vitamin and supplement company in Ronkonkoma, New York. Ms. Gustafson studied at Rutgers University, New Brunswick, New Jersey, and discusses her involvement in researching a new therapy for sickle cell disease, her passion for botanical medicine, and her enthusiasm for ginseng. We welcome Ms. Gustafson to the ASP and look forward to meeting her in person.

By Dr. Dan Kulakowski

## How did you hear about the ASP?

I presented a poster at International Congress of Natural Products Research (ICNPR 2012) in New York City, and was impressed by the passionate, high energy people in attendance and the quality of research being conducted by ASP members.

## Why did you join ASP?

I recently joined NBTY Inc. as a Nutrition Scientist to support the safety and efficacy of our botanical products and want to keep informed about research and conferences in this field.

## Do you belong to any other scientific societies?

I am a member of the Society for Economic Botany and United Plant Savers.

## What are your current research interests in pharmacognosy?

I am interested in translational research on botanicals and partnerships that can bridge the gap between academia and industry, development of evidence-based botanical products, traditional medicine, synergistic and antagonistic interactions in botanical formulations, and fingerprinting and standardization of botanical dietary supplements using chemical and biological methods.

## What is your scientific background?

I studied medicinal chemistry and food science at Rutgers, under the guidance of Drs. Jim Simon and Qing-Li Wu. My areas of focus were natural products research, analytical chemistry, and botanical quality control. I received my MS in Medicinal Chemistry for work on characterization and standardization of a sorghum leaf extract traditionally used in the treatment of sickle cell disease in Nigeria, which was funded by a National Institutes of Health Small Business Innovation Research grant. This extract was well tolerated and reduced pain and fatigue in sickle cell patients in a recent Phase IB clinical trial. A randomized, placebo-controlled Phase II study is planned in up to 100 sickle cell patients, pending available funding.



Ms. Kelsey Gustafson

## What would you like to achieve through your membership?

I would like to explore opportunities for collaborative partnerships between academia and industry to improve the authenticity, safety, and efficacy of botanical dietary supplements.

## What do you like doing in your spare time?

I enjoy traveling, camping and being outdoors, practicing ashtanga yoga, experimenting in the kitchen and trying new foods, meditating, reading, and writing.

## What are you currently reading?

*Plant Intelligence and the Imaginal Realm* by Stephen Harrod Buhner. Thought-provoking and poetic, he has a beautiful way of synthesizing natural philosophy, herbalism, ecology, and art, while maintaining a wry sense of humor.

## What is your favorite organism (to study, or for general interest)?

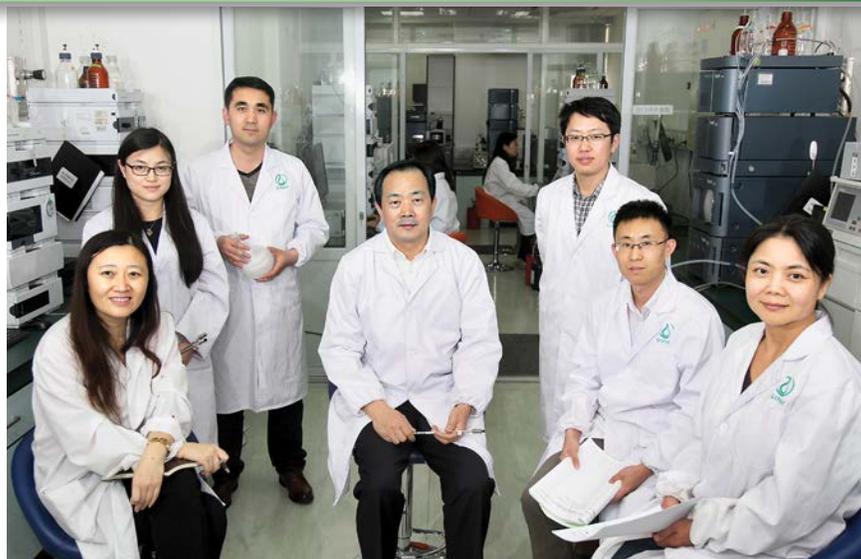
I love ginseng (*Panax ginseng* and *P. quinquefolius*) depending on the occasion. I prefer whole roots and small batch extracts, so it is a dream of mine to visit Changbai Mountain and the botanical markets of China. ■

**I am interested in translational research on botanicals and partnerships that can bridge the gap between academia and industry, development of evidence-based botanical products, traditional medicine, synergistic and antagonistic interactions in botanical formulations, and fingerprinting and standardization of botanical dietary supplements using chemical and biological methods.**

# Behind the Scenes in Pharmacognosy: Hybrid Compounds Discovered

By Dr. Amy Keller

Earlier this year, *Analytical Chemistry* published an article authored by ASP member Dr. De-an Guo and others entitled, "Global Profiling and Novel Structure Discovery Using Multiple Neutral Loss/Precursor Ion Scanning Combined with Substructure Recognition and Statistical Analysis (MNPSS): Characterization of Terpene-Conjugated Curcuminoids in *Curcuma longa* as a Case Study." Dr. Guo is Director of the Shanghai Research Center for Traditional Chinese Medicine Modernization at the Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China. Dr. Guo utilizes a unique approach for elucidating hybrid bioactive compounds. We thank Dr. Guo for allowing us to know his work better and invite ASP members to read the original article. (*Anal Chem.* 2016 Jan 5;88(1):703-10).



The Guo Group: Dr. Wan-ying Wu, Ms. Juan Da, Dr. Wen-zhi Yang, Dr. De-an Guo, Dr. Jin-jun Hou, Dr. Min Yang, and Dr. Bao-hong Jiang.

DR. PENG QI

## How did you become interested in turmeric and curcuminoids?

Our lab aimed to discover novel bioactive compounds from popularly used herbal medicines. We started the study in 2009, driven by the favorable anti-tumor effect of curcumin. In addition, turmeric (*Curcuma longa*) was a popularly used traditional Chinese medicine, and this reinforced our interest.

## Who in your laboratory carried out the research?

Mainly Dr. Xue Qiao and Dr. Xiong-hao Lin. Dr. Qiao established the analytical method, multiple neutral loss/precursor ion scanning combined with substructure recognition and statistical analysis (MNPSS), for rapid analysis and data processing of novel curcuminoids. Dr. Lin purified the compounds and identified their structures. The research was based on the thorough chemistry work of Dr. Lin, who first discovered curcuminoids in our lab (*J. Org. Chem.* 2013, 78, 11835 and *J. Nat. Prod.* 2012, 75, 2121). We also want to address the contribution of other co-authors, S. Ji, Z. Zhang, and T. Bo, in conducting the experiments and writing the paper.

## Could you provide a brief explanation of the work and results in your own words?

Turmeric contains curcuminoids and terpenes. Our previous study suggested it also contains hybrids of these two structures, and the hybrids are potent anti-tumor agents. In this study, we established analytical methods to discover these terpene-curcuminoid hybrids, and found that there is a large family of more than 800 hybrids in turmeric. We then used a statistical approach to rapidly find the novel hybrid patterns and isolated two of them.

## Your work reports a new way of global phytochemical profiling and uncovering new compounds. What is the future potential of this technique in natural products chemistry?

Our method remarkably improved the efficiency to discover unknown constituents from herbal medicines. A large number of minor novel structures ignored by conventional methods can be revealed with this method and could be important lead molecules for drug discovery. Meanwhile, the work will accelerate secondary metabolomic studies of medicinal plants. The global chemical profiling of secondary metabolites will provide important reference points for the biosynthesis routes of certain natural products.



The global chemical profiling of secondary metabolites will provide important reference points for the biosynthesis routes of certain natural products.

## What is a favorite nonscientific activity of your lab?

Playing table tennis.

## What is your lab's motto or slogan?

Always try to do a better job. ■

Above left: Turmeric, the root of *Curcuma longa*.

XIONG-HAO LIN.

Left: The aerial part of *Curcuma longa*, developed from the roots.

XUE QIAO.

# 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.phcog.org](http://www.phcog.org). If you have a conference or event you would like mentioned, please send us relevant information, including any graphics or appropriate fliers, at [asp.newsletter@lehman.cuny.edu](mailto:asp.newsletter@lehman.cuny.edu).

## 9<sup>th</sup> Joint Natural Products Conference 2016

July 24-27, 2016

Tivoli Congress Centre

Copenhagen, Denmark

[www.jnpc2016.dk](http://www.jnpc2016.dk)

## International conference on Ayurveda, Herbal & Natural Remedies for Diabetes and Endocrine Disorders

September 5-7, 2016

Beijing, China

[ayurvedic-herbaldiabetes.conferenceseries.com/scientific-program/](http://ayurvedic-herbaldiabetes.conferenceseries.com/scientific-program/)

## The 9<sup>th</sup> International Countercurrent Chromatography Conference (CCC 2016)

July 30-August 3, 2016

Dominican University

Chicago, Illinois

[www.ccc2016.com](http://www.ccc2016.com)

## John Innes – Rudjer Boškovic Summer Schools on Applied Molecular Microbiology:

“Microbial Diversity and Specialised Metabolites”

September 10-18, 2016

Inter-University Centre

Dubrovnik, Croatia

<http://www.jic.ac.uk/science/molmicro/summerschool/index.htm>

## Gordon Research Conference: Natural Products

July 31- August 5, 2016

Proctor Academy

Andover, New Hampshire

[www.grc.org/programs.aspx?id=11733](http://www.grc.org/programs.aspx?id=11733)

## The 9<sup>th</sup> Shanghai International Conference on Traditional Chinese Medicine and Natural Medicine

October 19-21, 2016

Shanghai, China

[www.s-tcm.com](http://www.s-tcm.com)





## Brief News From Washington Natural Products in the Spotlight

By Dr. Georgia Perdue

- **Natural Products hit the news:** At the end of March, the **Food and Drug Administration (FDA) approved Oxigene's CA4P, Combretastatin A4 Phosphate/fosbretabulin for Fast Track review for the treatment of platinum-resistant ovarian cancer.** Phase II and III clinical trials commenced in early May. **The European Commission granted CA4P orphan drug designation for the treatment of gastroenteropancreatic neuroendocrine tumors.** The history of this drug is worthy of note not only because it is a natural product compound, but for the familiar principals originally involved. As noted in the March 15, 2000, issue of the newsletter *Washington Insight (WI)*, "... **the first milligram of the original combretastatins was isolated in 1980 from the bark and stem wood of *Combretum caffrum* by Dr. George Pettit's research associate Dr. Gordon Cragg. The plant he used was first collected in 1973 in South Africa under USDA's (United States Department of Agriculture) collection program for the National Cancer Institute headed by Dr. Robert E. Perdue, Jr. The original compound, a stilbene, was 'as soluble as bricks' Pettit told *WI*, who made the soluble sodium phosphate analog which has greater in vivo activity.**"
- **Another natural product** hit the news in early April. The European Medicine Agency's Committee for Medicinal Products for Human Use approved **eribulin mesylate or Halaven® (halichondrin)** to treat patients with advanced unresectable liposarcoma after treatment with anthracycline-based chemotherapy. (See *ASP Newsletter* Vol.51, Issue 3).
- **Two doctors, Dr. Donald M. Marcus and Dr. Arthur P. Grollman, flagged the use of *Aristolochia* spp. in an article, *Toxicity of Botanical Medicines: An Overlooked Global Health Problem\**.** The adverse side effects from extracts of *Aristolochia* plants, which have been used for more than 2,000 years, are very toxic due to aristolochic acids. They singled out *Aristolochia clematis*. **They propose a plan of action** "...to bring this problem to the attention of traditional healers, national health authorities and representatives of the biomedical and public health communities..." "The use of botanicals that contain *Aristolochia* spp. be banned worldwide." They also urged "the international community to provide financial assistance for the development of educational programs and technical support." They recommend that the "global public health community should take preventive action to protect populations at risk from botanicals in Africa and Asia." (See *American Journal Public Health*, **2015**, 106, 16-17). (\*An excerpt was published in *Medscape Pharmacists*, February 24, 2016).
- **In March, the FDA approved a new formulation of Spectrum Pharmaceuticals' (Evomela™) melphalan hydrochloride** which does not contain propylene glycol, "...as a high-dose conditioning treatment for use in patients with multiple myeloma prior to autologous stem cell transplantation." It also was approved for palliative treatment of patients with myeloma for whom oral therapy is not an option. It is also used to treat ovarian cancer. **The original melphalan formulation was approved in 1964. melphalan's history goes back to the original drug named Alkeran in the former Soviet Union and also known as the chemotherapy drug sacrolysin, a nitrogen mustard alkylating agent.**
- According to National Cancer Institute's (NCI) April Physician Data Query (PDQ), **mistletoe extracts are commonly manufactured and marketed in Europe as injectable prescription drugs.** They are, however, not available in the U.S. or approved as a treatment for people with cancer. "Mistletoe is one of the most widely studied CAM therapies for cancer." **In some European countries pharmaceutical preparations from mistletoe (*Viscum album*) "are among the most prescribed drugs offered to cancer patients."**

continued on page 15

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### “considerable gains have been made in reducing the global burden of malaria....”

- **World Malaria Day was April 25, 2016, with the theme, “End Malaria for Good.” The significance of the day was recognized by National Institute of Allergy and Infectious Diseases (NIAID) Director Dr. Anthony Fauci.** In a statement, Drs. Fauci and B. Fenton Hall noted that **“considerable gains have been made in reducing the global burden of malaria....” According to the World Health Organization (WHO), “since 2000, global malaria deaths have decreased by 60%; ... new cases have fallen by 37%.” “However ... half of the world’s population continues to be at risk from malaria infection.” The continued spread of drug-resistant malaria is driving NIAID to find new and effective anti malarial drugs as well as vaccines. In preclinical testing, “one novel antimalarial, DSM265, was shown... to kill drug resistant malaria parasites in both blood and liver. [This] investigational product is currently in clinical testing.” “[It] holds promise as both a single-dose cure and to prevent infection.”** The team of researchers headed by Dr. Margaret Phillips, University of Texas Southwestern, Dallas, Texas, includes Dr. Pradipsinh Rathod, University of Washington, Seattle, Washington, and Dr. Sue Charman, Monash University, Parkville, Australia. They focused their work on triazolopyrimidine-based biosynthetic inhibitor of the *Plasmodium falciparum* enzyme, dihydroorotate dehydrogenase, DHODH, discovered through high-throughput screening using an enzyme-based assay. If successful, it will be the first antimalarial chemotherapy to target DHODH which is essential for the parasites survival. (See *Sci. Transl. Med.* **2016**, 17;7 (296)).
- At the March meeting of the National Cancer Institute’s Board of Scientific Advisors (BSA), **Acting NCI Director Dr. Douglas Lowy reported that NCI received a \$265 million budget increase: \$70 million is being allotted to the Precision Medicine initiative; \$50 million to noncompeting awards (type 5); \$53 million for new and competing awards, (types 1, 2).** The \$447 million left over from grant awards that ended will be used to keep up with inflation. **As for the Moonshot effort, Dr. Lowy noted that Vice President Joe Biden said, “I’m not naïve enough to think that we are going to find a cure.”** He also said that **one charge to the Blue Ribbon Panel will be to “accelerate research so what was done in 10 years can be done in five.” The Panel will be asked to develop a drug formulary, and Pharma is very interested and positive about its purpose to accelerate development of new drugs and to provide access to treatments.** One BSA member noted that the Panel will need to figure out ways to tear down the barriers and to collaborate and cooperate with Pharma. Dr. Lowy also noted that many in Congress are excited about this new effort, adding that **even the Vice President is having second thoughts about the name Moonshot.** “The Vice President wants to increase funds to accelerate this process ...[T]here is really strong bipartisan support for funding increases for NIH.”
- **On April 5, the NCI issued a statement on the formation of the Blue Ribbon Panel for the Moonshot initiative. It is made up of scientific experts, cancer leaders and patient advocates who will “inform the scientific direction and goals at NCI.” The panel will serve as a working group of the National Cancer Advisory Board (NCAB). NIH Director Dr. Francis Collins noted, “[t]hanks to advances in science, we are now in a historically unique position to make profound improvements in the way we treat, detect and prevent cancer.”** Later this summer, the NCAB will advise Dr. Lowy after it considers the Panel’s recommendations. The Panel represents a spectrum of scientific areas including biology, immunology, genomics, diagnostics, bioinformatics and cancer prevention and treatment. (The list of members can be found on the NCI website, National Cancer Moonshot initiative [www.cancer.gov/research/key-initiatives/moonshot-cancer-initiative](http://www.cancer.gov/research/key-initiatives/moonshot-cancer-initiative)).
- **NIAID sponsored the 2016 John Ring LaMontagne Memorial lecture** on April 5, given by Dr. Ramanan Laxminarayan, Princeton University, Princeton, New Jersey. His topic was the state of the world’s antibiotics. A few highlights:
  - **In the last 15 years, drug resistance has been rising worldwide**
  - **When penicillin, the miracle drug, was first used widely in 1942, it played an incredible role in global health; 10 -15 years later antibiotic resistance was reported. From the 1990s to 2000, resistance has risen greatly**

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- **Every region of the U.S. is affected; in some parts of the country resistance is as high as 60% to 70%**
  - **Only in the 2000s has there been greater antibiotic resistance, especially for *Staphylococcus***
  - **Gram-negative infections are a problem, especially in China, India, and Vietnam; *Klebsiella* is a problem in children in India and China**
  - **The elderly have borne the brunt of resistance**
  - **The U.S. has the highest use of antibiotics, which is coordinated with wealth**
  - **India leads the world in antibiotic consumption**
  - **Non-prescription use of antimicrobials is very common in India and China**
  - **It is better for hospitals to use infection control than antibiotics**
  - **Up until recently, the Netherlands had a high level of antibiotic use**
  - **Tetracycline is the most commonly used antibiotic in animals**
  - **We will always need investment in new antibiotics**
- In 2015, the FDA approved 56 drugs, an all-time high. The closest approval record was 53 drugs approved in 1996. Also in 2015, FDA approved a record 700 generic drugs; in 2013, there were only 535 such approvals.
- On March 16, there was encouraging news from NIAID regarding **Dengue fever: the experimental Dengue vaccine, developed by NIH and FDA scientists, protected all 21 volunteers.** The 20 placebo recipients developed the infection.
- **Quick Takes** from National Science Foundation (NSF) press releases, April and March respectively: **“Sea slug brain chemistry reveals a lot about human memory, learning.”** “Ironically slugs can tell us a lot about

- the chemistry of the human brain and nervous system.... they are ideal as study subjects for research on learning....” University of Illinois researchers are working to develop new measurement tools in this effort... Second, **new insights into the seasonality of Amazon’s evergreen forest.** (NSF 3/10/16 press release).
- In early May, the FDA granted priority review for the use of **olaratumab in combination with doxorubicin for treating patients with advanced soft tissue sarcoma. Most interesting is the 66 year old history of the antibiotic/anticancer doxorubicin, which was isolated from the microbe *Streptomyces peucetius*.** The soil samples were collected near an Italian 13<sup>th</sup> century castle (Castel del Monte) by researchers at the Italian Farmitalia Research Laboratories. At the same time, French researchers also isolated the compound. The companies combined their efforts and settled on naming the anticancer compound **daunorubicin**. The name is derived from **Dauni, named after a Roman tribe which was in the area where the microbial species was found; rubicin was used because the species produced a red (ruby) color.**
- In mid-May, the Administration announced it wants to fund the **National Microbiome Initiative** to the tune of \$500 million. Several agencies, namely the NIH, Department of Energy (DOE), NSF, United States Department of Agriculture (USDA), and National Aeronautics and Space Administration (NASA) will also provide funding. The Bill and Melinda Gates Foundation is aboard (as are many other private entities) which combined, hope to provide about \$400 million to the effort. Now the little microbes will get their due in the spotlight and hopefully provide new drugs and much, much more. **Stay tuned! ■**

**In 2015, the FDA approved 56 drugs, an all-time high.**

## From the Archives: Ode to the Vincatini

By Ms. Devhra BennettJones

While the Society's members prepare and plan for the 2016 ASP Annual Meeting in Copenhagen, Denmark, they can anticipate a lively week of scientific sessions and collegial connections. The roots of their professionalism combined with the fun-loving nature of the ASP annual meetings are a meaningful feature of the Society's history. Among the long-term Society members, it is widely held that the 1964 ASP Annual Meeting solidified the harmony between scientific and recreational pursuits in the legendary Vincatini cocktail.

The 5<sup>th</sup> ASP Annual Meeting was held June 21-25, 1964, at the University of Pittsburgh School of Pharmacy, Pittsburgh, Pennsylvania. The meeting's historical documents demonstrated the hard work of the Program Committee, which consisted of Drs. Joseph A. Bianculli, Bryce Douglas, Robert F. Raffauf, William I. Taylor, and Ralph N. Blomster, and the Scientific Program Committee Members, Jerry A. Weisbach, Rolf S. Westby, and Chairman Norman R. Farnsworth. These pharmacognosists organized 50 scientific sessions on the chemistry and biological activity of *Catharanthus roseus* (vinca) and related indole alkaloids.<sup>1</sup>

The meeting began on Sunday, June 21, with a pre-conference tour of The Hunt Botanical Library ([www.huntbotanical.org](http://www.huntbotanical.org)) at the Carnegie Institute of Technology. The pharmacognosists gathered at 7:45 p.m. on the main floor of the Men's Residence Dormitory, Tower B, for transport to the library. For all of us that have enjoyed annual meeting bus transportation, we can surely imagine the lively and exuberant atmosphere on their journey. In the conference program, the Hunt Botanical Library description highlighted its appeal to pharmacognosists and how access to scientific research has dramatically changed since 1964.

The library is a unique type of international institute for bibliographical studies of botanical and horticultural literature. Its collections are divided into four categories: (1) *Books*. About 11,000 bound volumes and 2,500 pamphlets, chiefly consisting of works from the mid-nineteenth century, and particularly those on systematic botany, *medical* and economic botany, *herbals*, early agriculture, gardening and voyages. (2) *Botanical Prints and*



*paintings*. Original water colors and drawings, mainly from the 17<sup>th</sup> and 18<sup>th</sup> century, numbering about 3,000. (3) *Autograph letters and manuscripts*. Chiefly 18<sup>th</sup> and 19<sup>th</sup> century letter(s) of botanists and botanical manuscripts. Additions are continually made with a contemplated publication of a volume consisting of handwritten facsimiles of taxonomic botanists. (4) *Portraits of botanists*. A collection of more than 300 engraved portraits of botanists which will be used, in part, to fulfill a library objective to have both photographic likeness and biographical data on every professional botanist and leading horticulturist, especially those who are authors of published works.<sup>2</sup>

The following morning, Drs. Jack L. Beal, Farnsworth, Bianculli, Blomster, Edison Montgomery (Acting Vice Chancellor of the School of the Health Professions at the University of Pittsburgh), and ASP President Gordon H. Svoboda (Eli Lilly and Company in Indianapolis, Indiana), opened the 5<sup>th</sup> ASP Annual Meeting. In the first symposium, President Svoboda provided an overview of the  
*continued on page 18*

<sup>1</sup> American Society of Pharmacognosy Collection, Box 11, File 6, American Society of Pharmacognosy Fifth Annual Meeting program, p. 1, Lloyd Library and Museum, Cincinnati, Ohio.

<sup>2</sup> *Ibid*, pp. 4-5

## From the Archives: Ode to the Vincatini

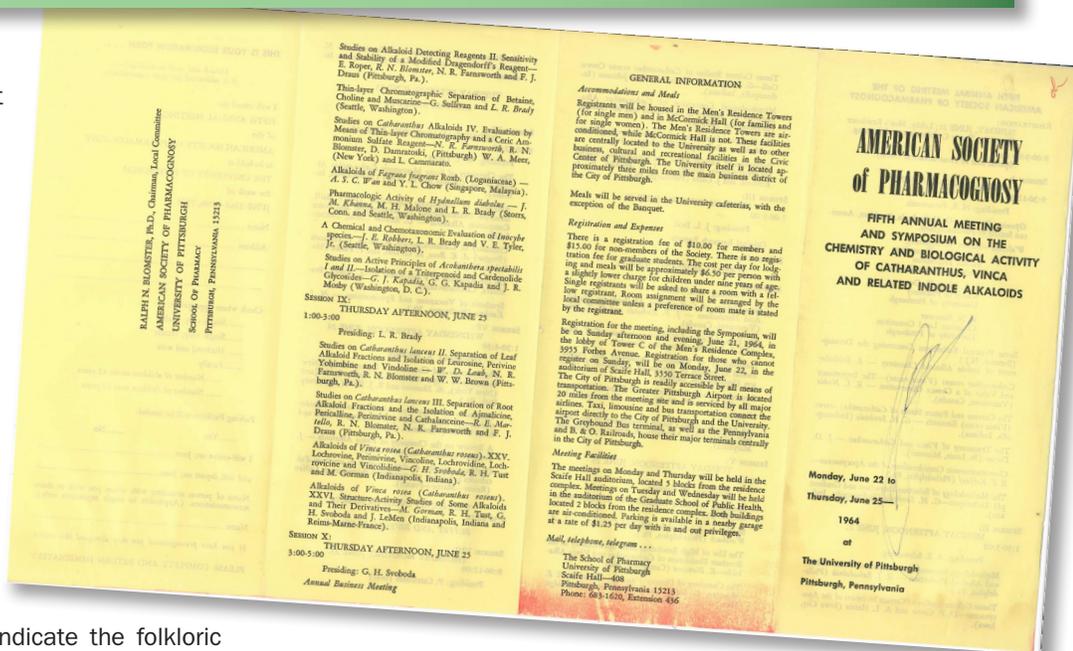
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Annual Meeting's theme, "The current status of *Catharanthus roseus* (*Vinca rosea*) research." His abstract outlined the scope of the Annual Meeting's scientific sessions:

To date some 50 alkaloids have been isolated from this plant, utilizing the methods of selective extraction, column chromatography and the gradient pH technique. Four new dimeric alkaloids have shown experimental oncolytic activity, and two of these, vincaleukoblastine (VLB) and leurocristine, have demonstrable clinical utility.

While it may not be possible to vindicate the folkloric usage of various galenical preparations of this plant, it has served well to open other areas of research, utilizing new techniques. In addition to the obvious increase in research activity in the area of plant oncolytic agents, the discovery of the oncolytic alkaloids has stimulated research on broad new horizons. Examples of these efforts will be given throughout this meeting.<sup>3</sup>

The 1964 organizing committee received such a plethora of stellar papers documenting the pharmacognosists' prolific research on vinca and related indole alkaloids that it was necessary to inaugurate evening sessions, meeting until 9:45 p.m. on the first day. While these scientists were firmly committed to sharing their scholarship, they also recognized the necessity of nurturing social connections. The banquet was held at the 'Panther Hollow Research Park' in Pittsburgh. This park has had a checkered history of revitalization and neglect. "A 1964 article in *The Pittsburgh Press* gushed over a proposed project, stating that, by 1970, it would line the hollow with buildings, creating 75 acres of rooftop park lands, and describing it as an engineering 'eye-popper' on a par with the Glen Canyon Dam in Arizona and the Chesapeake Bay Bridge Tunnel."<sup>4</sup> Today, the Panther Hollow Park is in great need of ecological support. Together, the City



ASP 5<sup>th</sup> Annual Meeting Brochure.

of Pittsburgh, the Allegheny County Sanitary Authority, and the Pittsburgh Water and Sewer Authority are working to plant trees, prevent erosion, and establish meadows, rain gardens, and infiltration trenches. They aim to launch an overall ecological infrastructure through historic restoration combined with storm water management.<sup>5</sup> Indeed the pharmacognosists, at the 1964 banquet would applaud this significant ecological restoration plan.

Over the 56 year history of ASP annual meetings, the Local Program Committees have had a long tradition of providing excellent entertainment for the pharmacognosists in attendance. On the evening of June 24, 1964, they enjoyed a dinner and cruise on the Gateway Clipper along the Ohio, Allegheny, and Monongahela Rivers. The Gateway Clipper offered the very best in Pittsburgh riverboat tours. It was on this voyage that the pharmacognosists enjoyed ASP Program Committee Chairman Farnsworth's legendary Vincatini. The beverages' notoriety made the Sunday news on June 28, 1964. *The Pittsburgh Press* featured

continued on page 19

<sup>3</sup> Ibid, p. 6

<sup>4</sup> Jones, Diana Nelson. \$1 million given to restore Panther Hollow watershed A Richard King Mellon Foundation grant aims to begin the process of restoring Panther Hollow and its lake, Pittsburgh Post-Gazette, August 31, 2010, <http://www.post-gazette.com/local/city/2010/08/31/1-million-given-to-restore-Panther-Hollow-watershed/stories/201008310140>

<sup>5</sup> Pittsburgh Parks Conservancy Blog, January 28, 2016, <https://pittsburghparks.wordpress.com/>

## From the Archives: Ode to the Vincatini

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the story in *Gilbert Love's Notebook*,

Meanwhile back in Pittsburgh the American Society of Pharmacognosy (that's drugs of plant and animal origin) had its convention banquet on the Gateway Clipper and inaugurated a new beverage.

Concocted by the University of Pittsburgh School of Pharmacy, its ingredients are vodka, vermouth and chlorophyll, which sounds like a real double-barreled attack on tell-tale breath.

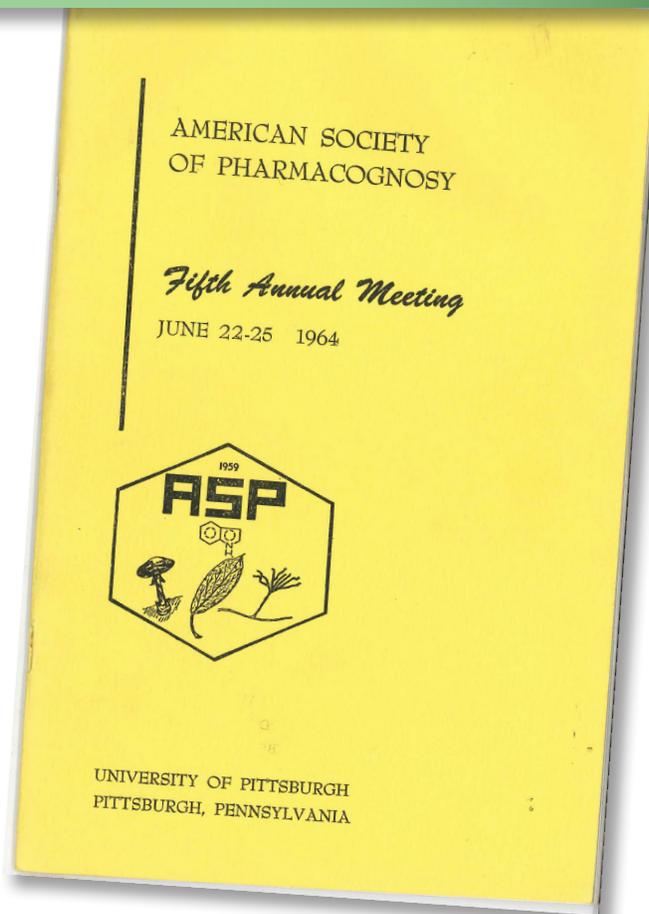
The pharmacognosists dubbed the new drink The Vincatini, in honor of the leukemia-fighting vinca plant family.<sup>6</sup>

The hallmark 5<sup>th</sup> Annual Meeting and celebrated Vincatini is vividly recalled by long-term Society members. Dr. David Carew evoked the merits of the 5<sup>th</sup> ASP Annual Meeting at the 20<sup>th</sup> Anniversary in Austin, Texas on August 22, 1984, "Few can forget the first meeting in Pittsburgh in 1964. Our first major symposium was held there. It considered all aspects of Vinca research including the development of the Vincatini."<sup>7</sup>

In 1992, Dr. Lynn Brady wrote,

By the time of the 1964 meeting in Pittsburgh "Green Medicine" had appeared. The ASP Newsletter was first published in 1964, Marsh Wheelings [cigars] were both a badge and a promotion for the Society, and the program at the annual meeting had expanded to the place where it was necessary to schedule the first evening session to accommodate the contributed papers. The first, and incidentally the last, carbos of Vincatini were formulated for the Pittsburgh meeting; on the absolute scale of inventions, the Vincatini ranks up there with the Edsel and the joy buzzer.<sup>8</sup>

Drs. Crew and Brady's astute observations provide a vivid picture of the significance of the scientific focus of the 5<sup>th</sup> Annual Meeting and the degree of humorous-entertainment the phar-



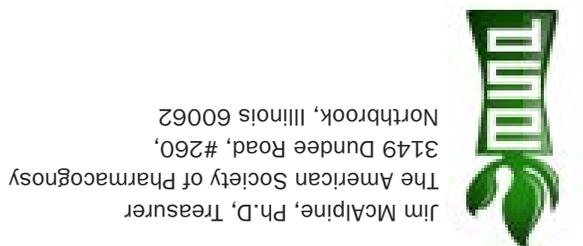
ASP 5<sup>th</sup> Annual Meeting Program Cover.

macognosists enjoyed in Pittsburgh. Undoubtedly, today's Society members are looking forward to continuing the ASP annual meeting tradition of building their respective fields of science coupled with collegial camaraderie July 24-27 in Copenhagen, Denmark. Will they share the recipe and history of the Vincatini with their colleagues in The Society for Medicinal Plant and Natural Product Research, The Phytochemical Society of Europe, Società Italiana di Fitochimica, Association Francophone pour l'Enseignement et la Recherche en Pharmacognosie, and The Japanese Society of Pharmacognosy? ■

<sup>6</sup> Gilbert Love's NOTEBOOK. The Pittsburgh Press, Vol. 81, No. 6, June 28, 1964, p. 25

<sup>7</sup> Carew, David. The American Society of Pharmacognosy-The First Twenty-five Years, American Society of Pharmacognosy Newsletter, Vol. 21, No. 1, February 1985.

<sup>8</sup> Brady, Lynn. The Early Years With ASP, American Society of Pharmacognosy Newsletter, Vol. 28, No. 1, Spring 1992.



## ASP Membership

### Full Membership

Full membership is open to any scientist interested in the study of natural products.

Current membership dues and Journal of Natural Products subscription rates can be found at [www.pharmacognosy.us](http://www.pharmacognosy.us).

### Associate Membership

Associate membership is open to students of pharmacognosy and allied fields only. These members are not accorded voting privileges.

Current membership dues and Journal of Natural Products subscription rates can be found at [www.pharmacognosy.us](http://www.pharmacognosy.us).

### Emeritus Membership

Emeritus membership is open to retired members of the Society who maintained membership in the Society for at least five years.

Current membership dues and Journal of Natural Products subscription rates can be found at [www.pharmacognosy.us](http://www.pharmacognosy.us).

### Honorary Membership

Honorary members are selected by the Executive Committee of the American Society of Pharmacognosy on the basis of meritorious service to pharmacognosy.

### Present Honorary Members are:

Dr. John H. Cardellina • Dr. David P. Carew, University of Iowa • Dr. John M. Cassady, Oregon State University  
Dr. Geoffrey A. Cordell, University of Illinois at Chicago  
Dr. Gordon C. Cragg, National Institutes of Health • Dr. Harry H.S. Fong, University of Illinois at Chicago  
Dr. William Keller, Nature's Sunshine Products, Inc. • Dr. A. Douglas Kinghorn, Ohio State University  
Dr. Robert J. Krueger, Ferris State University • Dr. Roy Okuda, San Jose State University  
Dr. James E. Robbers, Purdue University • Dr. Yuzuru Shimizu, University of Rhode Island  
Dr. E. John Staba, University of Minnesota • Dr. Otto Sticher, Swiss Federal Institute of Technology  
Dr. Hildebert Wagner, University of Munich • Dr. Mansukh Wani, Research Triangle Institute

Additional information about membership may be obtained by writing to the Treasurer of the Society:

Jim McAlpine, PhD, Treasurer, The American Society of Pharmacognosy,  
3149 Dundee Road, #260, Northbrook, Illinois 60062. Email: jim4asp@gmail.com