



# The American Society of Pharmacognosy

The ASP Newsletter  
Volume 50, Issue 4

## 50 Years of the Newsletter

## History and Future

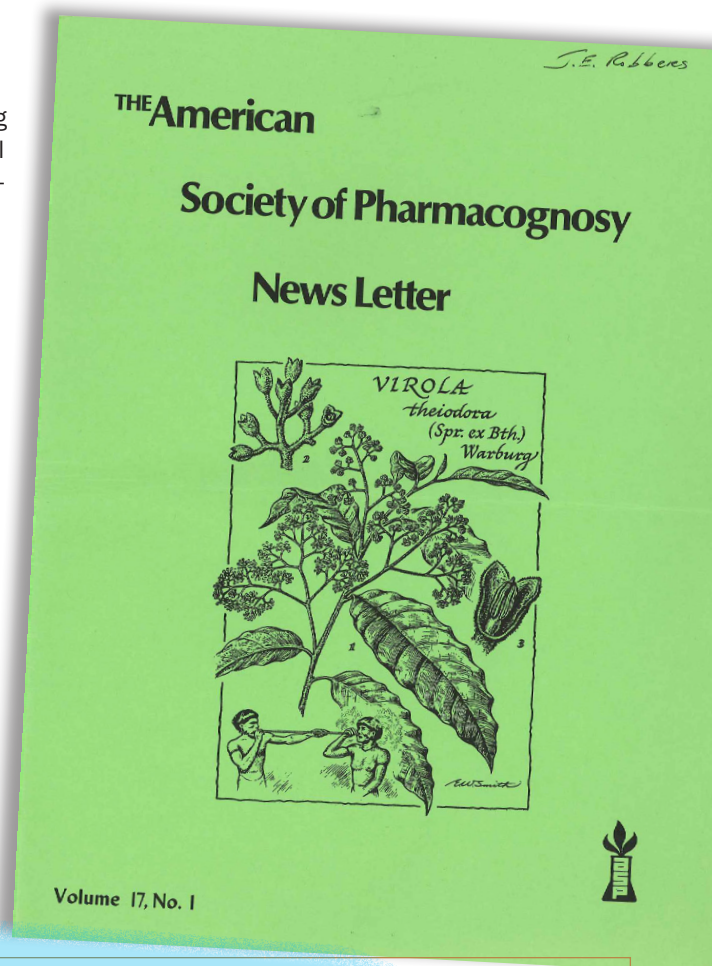
By Dr. Edward J. Kennelly

**T**his Winter issue of the ASP Newsletter marks the end of our year-long celebration of 50 years of publication. Last year, when the editorial team first contemplated how to commemorate this unique achievement in Society's history, we came up with a laundry list of ideas. This included getting the Society to make all past issues of the Newsletter freely available on the web, but we soon found out that our friends at the Lloyd Library had already beaten us to this task! (<http://www.lloydlibrary.org/archives/inventories/aspNewsletters.html>)

In the past year, I have enjoyed going back through all of the old issues of the Newsletter and considering how the Society and the Newsletter has evolved in the last five decades. In this article, I would like to look back at the history of the Newsletter, and offer some of my thoughts on the future of this long-standing publication. I consider, with gratitude, the four individuals who have edited this publication previous to me, Drs. Melvin Gibson, Ralph Blomster, Joy Reighard, and Renuka Misra, and consider the distinct contributions each of us has made to this esteemed publication.

When asked to comment on this article, ASP President Phil Crews wrote, "The sketch which follows is a 'must read'. It presents an ASP-centric view on many topics ranging from a big picture analysis of past scientific victories to vignettes tracing day-to-day changes in our community. It provides some fascinating accounts; and, as president, I am grateful to Ed and his team for taking the time to make available this view. As you read on, consider advice from Albert Einstein – 'Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.'"

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## EDITOR'S CORNER



**A**s I write this Editor's Corner just prior to the Christmas holidays here at the Institute of Chinese Medicine, at the Chinese University of Hong Kong, on my sabbatical, I am full of nostalgia. I have just spent the last week reading and rereading all of the former issues of the *ASP Newsletter*. There were so many familiar names, some active members who I know well, and other departed members who served roles, both large and small, in shaping the Society. This Society does indeed stand on the shoulders of giants, and reading through the *Newsletter* reminded me of their contributions.

Furthermore, I had a new realization of how significant we members of the Society are to each other. This was never more apparent to me than when I read the letter from former ASP President, Dr. Matthew Suffness, published in the *Newsletter* (1995 Vol. 30, No. 3) where he updated members on his chemotherapy and told how important their notes, calls, and prayers had been to him. It was hard not be moved to tears reading that note from Dr. Suffness, despite never meeting him in person. He died the next year at the age of 52 (obituary, 1996 Vol. 31, No. 2). I think Dr. Suffness' note embodies what many others have said in the *Newsletter* and elsewhere: the Society is welcoming and collegial, where close friendship, rather than rivalries, are commonplace among investigators.

I have written a comprehensive history of the *ASP Newsletter* for this issue, basing my research on the reading of all of the issues, correspondence with all of the living former Editors (Drs. Ralph Blomster, Joy Reighard (now going by Baumgardner), and Renuka Misra), and reading other ASP-generated reports and resources. As we move forward with issues of how best to position our Society for the future, such as the exercise now being conducted with graduate students at the Virginia Commonwealth University Brand Center, I hope we can remember not only our hopes for the future, but history of the Society as well.

Other articles in this issue of the *Newsletter* are also historical in context. ASP Fellows Drs. John Blunt and Murray Munro wrote a comprehensive history of the marine natural products database, MarinLit. A complementary article about the future of NAPRALERT, the natural products database started by the late Dr. Norman Farnsworth, discusses how Chinese collaborators in Hong Kong and mainland China will work together to keep this significant database going. Finally, in the article "From the Archives," Ms. Devhra BennettJones discusses the Lynn Index, which I only recently learned, is the historic precursor of NAPRALERT.

I appreciate the diligence of our regular contributors, including Drs. Dan Kulakowski ("Meet a New ASP Member"), Dave Newman ("Hot Topics in Pharmacognosy"), and Georgia Perdue ("News from Washington").

I hope you have a wonderful holiday season!

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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### DR. MELVIN R. GIBSON (1964-1968, Vol. 1, No. 1-Vol. 6, No. 2)



In 1964, ASP Vice President Melvin Gibson of Washington State University, Pullman, Washington, became the inaugural editor of the *ASP Newsletter*. The *ASP Newsletter* replaced the "News and Events" section of *Lloydia* which ran for several years. In these early days of the Society, the *Newsletter* served a critical function of being a primary source of providing information about the Society and discipline to members. According to the second

editor of the *ASP Newsletter*, Dr. Ralph Blomster, "Mel convinced the group [ASP Executive Committee] that we needed a *Newsletter* with the ASP [name in the] title to overcome the problems that had been associated with the group that it had grown out of, The Plant Science Seminar, which represented old-time pharmacognosy to our compatriots in pharmacy schools."

Much of the first issue of the *Newsletter* conveyed information about the Annual Meeting, which is still an important focus of the *Newsletter* to this day. The first *ASP Newsletter* was four pages long, with many short, one-paragraph announcements ranging from news about the upcoming ASP Annual Meeting at the University of Pittsburgh, Pittsburgh, Pennsylvania, to a list of books published in 1963 relevant to pharmacognosy. The *Newsletter* was dense in short blurbs and announcements about pharmacognosy, ASP member milestones, and relevant literature.

In the age before the internet and social media, the "Personal" department of the *Newsletter* kept ASP members informed of both professional and personal developments of members' lives. In Vol. 4, No. 3, readers could learn about Dr. Varro Tyler's appointment as an External Examiner at the University of Singapore, Dr. Lynn Brady's promotion to full professor at the University of Washington, Seattle, Washington, and even Drs. Hildebert Wagner and Hans-Peter Horhammer's one-month Mediterranean yacht cruise in the Greek islands. In more recent years, the *Newsletter* has gotten away from acknowledging the more routine professional milestones in our members' lives, but upon reading these, I wonder if there is still a need to disseminate this information to our colleagues in a structured manner such as this.

The international concerns of the Society are evident in regular reports from the Pharmaceutical Society of Japan by Dr. Isao Inagaki (Nagoya City University, Nagoya, Japan). There is also a longer-than-usual article by the first ASP President, Dr. Varro Tyler, describing his 1964 sabbatical in Germany (Vol. 1, No. 2). International interactions by ASP members eventually lead to the establishment of a joint Annual Meeting with European colleagues every 4-5 years. Former ASP President, Dr. Norman Farnsworth, indeed indicates in the 1967 *ASP Newsletter* (Vol. 4, No. 2) thoughts about a joint meeting, "The people over here are quite enthusiastic that there is a possibility that the ASP will hold its

meeting in 1970 in Europe. There is some talk that at that time a 'European Society of Pharmacognosy' will be formed, or at least the groundwork will be laid for its formation." Indeed the meeting took place, jointly with the Die Gesellschaft für Arzneipflanzenforschung (GA), in Vienna, Austria from July 26-31, 1970.

Editor Gibson had the habit of requesting reports from certain ASP members, and this resulted in interesting short articles by a number of ASP members, including Ms. Julia Morton, describing her specialized plant collection housed at the University of Miami, Miami, Florida, known as Morton Collectanea (Vol. 2, No. 1). A number of other solicited articles on specialized topics appear during Dr. Gibson's tenure as Editor.

In the early days, the future of the *Newsletter* was not always secure. The final article in the four-page Vol. 1, No. 1 is an Editor's Note that states, "The Executive Committee of the American Society of Pharmacognosy has provided funds for three issues of the *ASP Newsletter* during 1964. Whether this publication continues beyond 1964 depends upon its value to the Society members. It can only be as valuable as the members make it...The response to requests for items for this current issue was disappointingly small." Many of the *Newsletter* Editors have echoed Dr. Gibson's concerns about lack of article contributions from ASP members.

Dr. Gibson announced his resignation in Vol. 6, No. 2 of the *Newsletter* writing, "I want to thank all those who have contributed to the success of this publication. Without this cooperation it would cease to be a publication. It has been a pleasure to be of service to the Society since the inception of the *Newsletter* six years ago." The ASP Executive Committee noted in its minutes of its August 22, 1969 Business Meeting, "The Society is suffering a great loss in Doctor Gibson's resignation as editor of the *Newsletter*. The responsibility of its future publication has been assumed by Doctor Ralph Blomster."

### DR. RALPH N. BLOMSTER (1969-1982 Vol. 6, No. 3-Vol. 18, No. 1)



Dr. Ralph Blomster of the School of Pharmacy, University of Maryland, Baltimore, Maryland, began editing the *ASP Newsletter* in 1969, starting with Vol. 6, No. 3, and edited the *Newsletter* for 14 years. The format of this first issue remained almost identical to the previous *Newsletters*, except the familiar masthead now read, "Edited by Ralph N. Blomster, School of

Pharmacy, University of Maryland, Baltimore, Maryland." In the final article, of his inaugural *Newsletter* entitled "Potpourri," Dr. Blomster makes an appeal to members to provide him with information about issues that may be of interest to readers. He does not lay out any vision or future changes he has planned for the *Newsletter*, but in a few years' time, major changes would occur thanks to input from a forward-thinking ASP president.

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Dr. Blomster's Potpourri series was a way for him to communicate in a very informal manner with members. Besides often complaining about the lack of response by members to his pleas for information, he would also incorporate antidotes and jokes, including some that may seem off-color as I read them in the year 2014 (e.g. Vol. 9, No. 2). In hindsight, other articles may be viewed differently, such as an article detailing a Philip Morris Science Symposium entitled, "The Recent Chemistry of Natural Products, Including Tobacco."

The *Newsletter* seemed to have had a more international viewpoint than more recent issues. For example, the announcement of the foundation of the Korean Society of Pharmacognosy appears in Vol. 7, No. 1, and in No. 2, the establishment of the Indian Society of Pharmacognosy is noted, each having scientific journals associated with them. Regular coverage appeared in the *Newsletter*

Additional obituaries have appeared on a regular basis throughout the history of the *Newsletter*; some are just brief announcements, while others provide a detailed account of the member's professional life. The first major obituary for a member appeared in Spring 1991, for Honorary Member Dr. Jonathan L. Hartwell of the National Institutes of Health National Cancer Institute.

Dr. Blomster continued to struggle to get contributions to the *ASP Newsletter*, and in 1971 he wrote that only 7% of members responded to a recent call for *Newsletter* items. In a recent interview for this article, Dr. Blomster recalled, "For most of its existence the *Newsletter* had to fight to get any material from the membership. For the most part, the members were teachers in schools of pharmacy and getting material was like pulling teeth. Most of the material was mundane. As the society grew it became easier to get interesting information."

**As you read on, consider advice from Albert Einstein —  
'Learn from yesterday, live for today, hope for tomorrow.  
The important thing is not to stop questioning.'"**

about the Korean Society of Pharmacognosy, often with a slate of the newly elected officers. In Vol. 7, No. 2, Editor Blomster specifically appeals to members residing in Europe to provide information that may be relevant to those members. Toward the end of his tenure as Editor, Dr. Blomster asked correspondents to report in detail about meetings they attended, and this included a number of international conferences that make for fascinating reading even today, like Dr. Walter Lewis' ginseng conference in Harbin, China, that was covered by NBC News, and Dr. Geoffrey Cordell's report (Vol. 17, No. 1) on the 2<sup>nd</sup> International Symposium on Recent Advances in Natural Products Research held in Seoul, South Korea, portending his future collaborations in southeast Asia.

Despite considerable build up to the Vienna, Austria meeting with GA in 1970 (including plans for a chartered flight for up to 170 members departing from New York City), there is limited coverage of this first-ever joint meeting. There was a brief mention of *Lloydia* Editor-in-Chief Arthur Schwarting being honored at the Vienna meeting for "his eleven years of devoted leadership and zealous management of the journalistic fortunes of *Lloydia* and for guiding it to a position of high scientific and scholastic attainment..." Dr. Schwarting was presented with a gold watch. The *Newsletter* also reported that Drs. Robert Hegnauer and F. Santavy were awarded honorary ASP membership at the Vienna meeting. More substantial coverage of the ASP Business meetings began in 1971, but there was still limited coverage of what happened at the meeting itself.

Obituaries are an important way in which the Society honors members who have died, by providing details on their professional accomplishments in the field. The first obituary (called "necrology") appeared in 1971 (Vol. 8, No. 1) for Dr. Wasicky, originally from Vienna, but who spent much of his professional career in Brazil. It was not clear in the article if he was an ASP member.

Later in his tenure as Editor, the *Newsletter* was published less frequently than the anticipated three issues per year. Some years, the second *Newsletter* came out in the last quarter of the year, and was noted to be a combined numbers 2 and 3. Dr. Blomster wrote in his Potpourri article (Vol. 13, No. 2 and 3) "Due to a number of factors, there have been delays in the publishing and distribution of the *Newsletter* and *Lloydia*...Thank you for your patience." By 1977, the *Newsletter* was down to one combined issue per year (Vol. 14, No. 1, 2, & 3). Dr. Blomster wrote in a recent e-mail that what he recalls most vividly was the dread of appearing before the ASP Executive Committee at their Annual Meeting and explaining why the *Newsletter* was always late.

In 1978, Dr. Blomster began a major change in the format of the *ASP Newsletter*. Rather than the typical 4-page, black and white, the *Newsletter* was now up to 15 pages, and printed on hunter green paper, with the ASP emblem shown on the front page. For those used to viewing the old simple four-page *Newsletter*, this change must have been shocking, and Dr. Blomster discusses this in a lead article that explains the changes to ASP members. The changes were upon the request of ASP President Dr. Heinz Floss, and as Dr. Blomster explained, "...these changes will allow the *Newsletter* to develop as it was originally envisioned, as a forum for discussion and an exchange of views between members in all countries and among those in academia and areas of endeavor." As part of these changes, Dr. Blomster enlisted the help of correspondents from different geographical areas, and divided the *Newsletter* into 10 parts: Editorials; Commentary Section; Letters to the Editor; Meeting Reports; Articles of Interest; Book Reviews; Society News; Review Alerts; New Equipment; and News and Notes. Dr. Blomster expressed hope to get back to the three issues per year format. In a recent e-mail interview, Dr. Blom-

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ster wrote that in his entire 13-year tenure as editor, it was these changes that he was most proud of accomplishing.

In the late 1970s and early 1980s there were a number of articles concerning the death of pharmacognosy. In Vol. 16 No. 1, ASP Founder and Past President, Norman Farnsworth, wrote a major 9-page article, adapted from a talk he gave in Paris, describing the death of pharmacognosy in the United States due to the fact that pharmacy schools no longer required students to take a course in this discipline. There are many points in this extensive manifesto that are still relevant to the Society and its members today. Dr. Heinz Floss also admonished ASP members for not publishing enough (Vol. 15, No. 1), and thereby contributing to the demise of pharmacognosy by not being an active researcher. In a surprising statistic, Dr. Floss asserted that only about 10% or fewer of ASP members had published a scientific article in the previous year.

The last issue of the *Newsletter* edited by Dr. Blomster was 1982 (Vol. 18, No. 1). He did not indicate in this issue that it would be his last as Editor. Dr. Blomster is now an emeritus Professor at the University of Maryland, and is still a member of the ASP. In an e-mail to me recently he wrote, "I stopped editing because I had done it too long and felt I wasn't doing justice to the program and accepted the board's suggestion that perhaps a change would be helpful. Joy [Reighard] proved to be a great choice."

### DR. JOY REIGHARD (1983-2002, Vol. 19, No.1- Vol. 38, No. 2)



**D**r. Joy Reighard (Temple University School of Pharmacy, Philadelphia, Pennsylvania), in response to a request by ASP President Paul L. Schiff, Jr., began as editor in July 1983, Vol. 19, No. 1. She recalls feeling "honored and excited about the request." She would prove to have the longest tenure of any ASP *Newsletter* editor in the publica-

tion's 50 year history. On the first page of her inaugural issue, Dr. Reighard clearly states her goals as Editor, "The purpose of this *Newsletter* is to fill the gap between scientific meetings with news and information concerning the society." She solicited information from members, including "letters to the editor, selected editorials, meeting reports, future meeting information, new appointments, promotions, grants received, grants available, new equipment information, obituaries, books of interest, and position openings." The layout was a clean modification of the last; gone are the green pages, and in return was a tight and clean design, which would undergo additional changes, like the addition of graphics, as the *Newsletter* developed under Editor Reighard.

In her second issue (Vol. 19, No. 2), Dr. Reighard added a column called "New ASP Members," that listed all of the new Active

and Associate members who had joined recently, including a name familiar to many in the Society, J. Nat. Prod. Associate Editor, Dr. Cedric J. Pearce, then at the University of Connecticut, School of Pharmacy, Storrs, Connecticut. The *Newsletter* has continued this tradition of listing new members in most issues published since, and in more recent years, has expanded its coverage of new members to include member profiles.

In 1983, (Vol. 20, No. 3) the *Newsletter* reported on the establishment of a number of ASP awards, including the Travel Support for ASP Meetings, Travel support for Graduate Students, Small Grant Awards for Young Investigators, The ASP Research Achievement Award (now known as the Norman R. Farnsworth Award), and the Undergraduate Research Award. All of these awards are still vital to the Society today.

As a Society, we have historically struggled with our name, and Dr. Reighard covers this struggle in some of her early days as editor. Some have wondered if the words "American" and "Pharmacognosy" clearly and accurately express who we are. This has led to several formal proposals to the Executive Committee to change the name, and even this year, as part of a branding process we are considering once again a name change. ASP President Jerry McLaughlin wrote a cogent piece (Vol. 21, No. 1) urging the Society to modernize its name, and suggested the American Society of Pharmacognosy and Natural Products, which he said, "would both preserve the old name and still reflect the interests of our newer members." He concluded "A palatable, undivisive, correction of the misnomer could very well strengthen the Society as we progress through the next 25 years." In October of 1986, (Vol. 21, No. 3) newly installed ASP President Geoffrey Cordell appointed an ad hoc Committee to Evaluate the Name of the Society consisting of Drs. Norman Farnsworth (Chair), Jack Beal, John Cardellina, William Pelletier, and John Rosazza. The charge to the committee "Is the name of the Society appropriate for the future." A year later, the ad hoc Committee concluded (Vol. 23, No. 2) that no name change was needed since few people bothered to respond to the request for feedback on a possible name change. Their report concludes, "The committee recommends that the name "American Society of Pharmacognosy" be retained until such time as objective data are at hand that suggest that the Society is suffering from the name (such as drop in membership, financial strength, journal quality, or significant numbers of member dissatisfaction)." In 2004 the *Newsletter* covered another initiative to change the name of the Society (Vol. 40, No. 4), and the case for and against a name change were presented in this issue, per the request of the ASP Executive Committee. Again, the name was not changed or altered. Currently there is an initiative to examine how ASP brands itself, with the help of graduate students from Virginia Commonwealth University Brand Center. These students have also recommended the Society change its name to make it more recognizable to the public as well as specialists. The Executive Committee is considering these recommendations.

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Under Dr. Reighard's guidance, the ASP Newsletter came into the computer age fairly early. In 1987, (Vol. 23, No. 1), Dr. Reighard apologized for the lateness of the current issue, but then went on to detail the new approach in the production of the Newsletter that will allow her to write and lay it out directly on her own computer without have to employ a typesetter. She estimated that this change will save 2-3 weeks! In a recent interview Dr. Reighard (now going by Baumgardner) recalled about entering the computer age of layout, "That was a lot of fun – even though it was more time consuming." In addition the ASP Executive Committee agreed to send the Newsletter by First Class mail. These changes greatly helped to streamline the production time, and therefore the Newsletter could be produced more frequently, eventually becoming a quarterly publication.

One of the major stories covered by Dr. Reighard was the changes afoot in *J. Nat. Prod.* in the early 1990s. First, was the appointment of Dr. A. Douglas Kinghorn as Editor-in-Chief and Dr. Harry Fong as Associate Editor announced in 1993 (Vol. 29, No. 1). Second, was the new agreement with the American Chemical Society (ACS) to co-publish *J. Nat. Prod.* with ASP. The negotiations were explained in a detailed article by ASP member Dr. Lester Mitscher (Vol. 29, No. 3), and the final announcement was made to membership in 1995 (Vol. 31, No. 3) that the agreement would begin with the January 1996 issue.

Through Dr. Reighard's Editor's Corners, you can get a real sense of the delight and devotion she put into the Newsletter. Her comments are sincere and bring a personal touch to the Newsletter. In 1988 we learn about the birth of her twin sons (Vol. 25, No. 1). Tragically, Dr. Baumgardner told me via e-mail that she was not able to participate more fully in this year's celebration of the 50<sup>th</sup> anniversary of the Newsletter because one of her sons was not well. He passed away this November at the age of 26.

In her 20 years as Editor-in-Chief of the Newsletter, Dr. Baumgardner recalled in our interview only one member contribution that she refused to publish. She said that she does not remember the topic of the article, but she very well remembers the writer, Dr. Norman Farnsworth. She says flatly, "I felt that it was not appropriate for inclusion in the Newsletter." Those who knew Dr. Farnsworth's enjoyment of off-color humor may want to imagine what that contribution may have been.

Dr. Reighard stopped editing the Newsletter in Spring 2002, and she bid farewell to the Society in a brief column (Vol. 38, No. 2) with an orange-colored headline, and two photos, not of her and her editorial assistant, Barbara Grissani, but of two dolphins jumping above the ocean. Dr. Reighard told me via e-mail, "I stopped editing because of an increased work load at Temple. (I inherited the Temple Newsletter as well – go figure.) I had additional teaching responsibilities and I was a single mom of four boys. I was not getting any younger, and decided I had to give something up."

### DR. RENUKA MISRA (2002-2005, Vol. 38, No. 3 – Vol. 41, No. 2)



ASP members who missed Dr. Reighard's announcement that she was retiring as Editor of the Newsletter surely realize a major change had happened when they received their Fall 2002 (Vol. 38, No. 3) issue and saw a cover photo in full color from the 2002 ASP Annual Meeting in New Brunswick. Dr. Renuka Misra had begun her tenure as ASP Newsletter Editor, and although

her tenure was briefer than previous editors (four years total), she made changes that have had a lasting impact on the Newsletter. She remembers being appointed by ASP President Dr. William Pelletier, "[he] requested me to edit the ASP Newsletter for just one year, as he couldn't find anyone else to take care of it. It was a pleasant surprise for me and I accepted."

Dr. Misra considers her biggest impact as providing a "facelift" to the Newsletter, and the change in graphic approach she took was original and distinctive. She wrote that she "renewed it, based on [the] four seasons, made it colorful and with good contents (news, grants information, and graphics, etc.) ASP members loved the Newsletter, and sent me appreciative e-mails. This was very fulfilling and satisfying."

Dr. Misra began writing a very extensive "Editor's Corner" that appeared in a box on page 2. Here, she went beyond simply thanking members for their contributions, as was the habit of some of the previous editors, but brought up other issues in the Society as well, akin to Dr. Blomster's Potpourri articles. The Newsletter continues the tradition of a page-2 Editor's Corner today. She also added a column called "Did You Know?" in which she summarized recent papers or other relevant information in natural products research.

Under Dr. Misra, there were many more substantial stories published in the Newsletter, and the average length of the Newsletter swelled to 16 pages. The passing of major figures within the Society was marked regularly with substantial obituaries like that for Dr. Paul Scheuer (Vol. 39, No. 1).

When asked recently why she stopped editing the Newsletter, Dr. Misra replied, "I was supposed to do it for one year and ended up doing for five [sic] years, single handed (collecting material, organizing it in the correct format, editing, graphs / layout / sending to printer / folding, putting postage stamps and mailing to national and international members). It was lots of work. I was not given money even to purchase the Adobe Pagemaker program, and/or any help of assistant editor." However, she still feels the Newsletter is the best way to communicate with members, and values her role in shaping it for the Society during her tenure as Editor.

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### DR. EDWARD KENNELLY (2006-present, Vol. 42, No. 1- present)



I remember getting an e-mail in the Fall of 2005 from ASP President Bill Fenical about possibly becoming the editor of the *ASP Newsletter*. Quite frankly, I had never thought about editing the *Newsletter*, and my only former journalistic experience was editing my high school newspaper back in the early 1980's. I was honored to be asked, but I realized if I was going to keep my day job as an Associate Professor, I would need help. I asked Dr. Fenical if the Society

would consider employing my students to assist with this project. President Fenical provided a reasonable budget and great editorial freedom. When people ask me how I find time to edit the *Newsletter*, I thank the ASP that they have given me the resources to do it well, especially with the help of my long-time Assistant Editor and former doctoral student, Dr. Amy Keller.

In the early days, Amy and I would do most of the writing ourselves, but we soon realized (for many reasons) that we needed to divvy this task to other ASP members. We began to think of regular columns that either individuals in the Society or an ASP Committee could take ownership of. One of the early results was "Meet a New ASP Member," in which a new ASP member was interviewed by a member of the ASP Membership Committee, originally penned by Dr. Diane Swaffar and currently by Dr. Dan Kulakowski. Since Vol. 19, the *Newsletter* published a list of new members and their professional association; I found the list useful, but extremely limited in perspective about new members. The idea of "Meet a New ASP Member" was both to make new members feel more welcomed and for the current members to learn about people joining the Society. This continues to be one of my favorite columns as I think it demonstrates the diversity of research interests and backgrounds of ASP members.

To enlist committed columnists to write for the *Newsletter* is not a simple matter! I approached Dr. John Beutler at the 2006 ASP Meeting in Crystal City, Virginia, about his ideas for columns that would be useful for the *Newsletter*. He suggested I consider talk to Dr. Georgia Perdue about writing for us about Washington policies on natural products. I never met Dr. Perdue, but I was very familiar with her former publication *Washington Insight*. I contacted Dr. Perdue in 2007, and I must say, convincing her to take on this task took my best powers of persuasion. After much consideration, Dr. Perdue joined the *Newsletter* team (Vol. 43, No. 3), and has been a

faithful member ever since, NEVER missing a deadline, and often after me if an issue is running late. Dr. Perdue is a consummate professional, and I am honored that she has been contributing so faithfully to make the *Newsletter* what it is today.

I view understanding the history of the Society and the discipline of pharmacognosy as an important mission of the *Newsletter*. Previous editors have included useful reflections on the early days of the Society, such as two articles published in Spring 1992 (Vol. 28, No. 1) written by long-time members Drs. Lynn Brady (just one year prior to his death, obituary Vol. 8, No. 3) and David Carew. To make our history a more integral part of the *Newsletter* as we approached the 50<sup>th</sup> anniversary of the Society in 2009, we began a series of articles called "From the Archives" in which I wrote about some aspect of ASP history. In the early days of the column, then ASP President Roy Okuda would brainstorm with me on the phone about topics—from the ASP gavel to the ASP emblem. I especially enjoyed contacting ASP long-time members, like Drs. Farnsworth, Harry Fong, and Ara DerMarderosian about what they remembered about some historic event, item, or photo. The column was later taken over by the professionals at the Lloyd Library who officially took possession of the actual ASP Archives in 2008. Having trained archivists (first Ms. Anna Heran and now Ms. Devhra BennettJones) write the column has brought a tremendous depth of research and historic knowledge to this series. However, I do miss communicating with the long-time members, and trying to jar their memories about the ASP's history.

Other columns were added over the years to highlight various areas of interest to ASP members. The research achievements of ASP members are spotlighted in "Behind the Scenes in Pharmacognosy," a regular column in which ASP members with a recent publication where they are corresponding author, often in *J. Nat. Prod.*, will discuss their discoveries in an informal way. I remember asking *J. Nat. Prod.* Editor Dr. Douglas Kinghorn if he would consider nominating people for us to interview. He politely declined, saying it would be hard for him to choose among the many great articles the journal publishes.

I am excited about three more recent columns that have come up as a result of discussions at an ASP Executive Committee meeting in San Diego, California, in 2011. At that meeting Dr. Kinghorn noted that many people are interested in natural products due to the excitement of participating in field collections, and he suggested we do a column highlighting the field work of members. We began this in 2012, and while we have struggled to get this into a regularly appearing series, I have been very happy with the work we have highlighted, from Dr. Alison Pawlus' Fulbright research in wine country in France, to Dr. Brian Murphy's experiences in Iceland, to Dr. Bill Baker's adventures in Antarctica.

At the San Diego meeting, when I mentioned the idea of a "Hot Topics" article, then-ASP President Dr. David Newman volunteered. I am not sure he knew what he got himself into, but this has resulted in what I consider one of our most interesting and topical columns, complete with a literature cited section that is the bane of our layout editor. A final result of the San Diego meeting was that ASP Fellows agreed to discuss how they could contribute a

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## Newsletter History and Future

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meaningful column in the *Newsletter*. This has resulted in a range of topics being covered.

My goal with all of these regular columns is to provide distinct viewpoints regarding the Society and the research of its members, and I hope the membership finds these useful. We continue to experiment with other regular columns and series, like Dr. Nick Oberlies's "Fun with Pharmacognosy" (a series we hope to continue), and a series we ran on past recipients of the Younger Investigators (now known as the Matt Suffness) Award.

The layout of the *Newsletter* has undergone major changes since I began as Editor. The original layout editor, my former doctoral student Dr. James Lyles, brought us into the age of Adobe publishing. James was not a professional graphic artist, but he put considerable time into making the *Newsletter* fit my expectations and became adept at Adobe InDesign in the process. We were able to incorporate many more photos, and use full color since the *Newsletter* was distributed electronically and did not require a budget for color print. James took on some challenging graphics projects, including an annotated timeline for the history of the *J. Nat. Prod.* (Vol. , No. 4); this original graphic design continues to be the one I am most proud of in the *Newsletter*. James resigned his position as Layout

Editor in 2010, and we hired a professional graphic artist, Ms. Nancy Novick, to take over as no other student could replicate James' graphic skills. Ms. Novick has brought her own sense of style to the *Newsletter*. She encourages strong graphics, and upon her recommendation, the front page is often one story, rather than two, so an engaging photo can be used on the *Newsletter* cover. Small changes like the font and adding a green box at the end of each article have made the layout look much more professional.

One of my proudest moments as Editor came last year when I got an unexpected e-mail from the person who first invited me to take on this editing task, Dr. Fenical. He wrote, "I've been meaning for some time to write to you and to commend you for the absolutely superb job you are doing with the *ASP Newsletter*. When I was president of ASP, the very existence of the *Newsletter* was in doubt. I looked very hard at a number of possible editors and also made it clear to leadership that ASP had to earmark significant financial aid to support having a first-class publication. I am delighted with the job you and your assistants have done, now for many years. Your *Newsletters* are informative and up to date in every way, and form a cornerstone illustrating the quality of the ASP. Bravo! for doing such a wonderful job." ■

### FUTURE OF THE ASP NEWSLETTER

Communication has changed in ways that would have been impossible to imagine 50 years ago when Vol. 1, No. 1 of the *ASP Newsletter* was published. Typewriters and communication by United States mail are used infrequently nowadays, and computers, smart phones, e-mail, and the world-wide web have supplanted them. However, despite these monumental changes in communication, I think there is still a need for a regular *Newsletter* to gather information about the Society, and disseminate it to the members. That same information may later find a new home, like our "Meet a New ASP Member" column that is now extracted from the *Newsletter* on a regular basis, and a link to the individual profiles ([www.pharmacognosy.us/member-directory/new-member-profiles/](http://www.pharmacognosy.us/member-directory/new-member-profiles/)) appears on the ASP homepage. As Editor, I think it is important that the Society communicates with members on a regular basis, but then try to ensure that the information is accessible without having to search through endless issues.

In the next 50 years, I would like the *ASP Newsletter* not only to share important information about the Society, like its Annual Meeting, but also to give readers more perspectives about scientific discoveries in our discipline. To that end, Dr. David Newman's "Hot Topics" article is a great example of how the *Newsletter* can provide perspective on what is happening in science related to drug discovery and pharmacognosy. My ultimate hope is that the *Newsletter* could be viewed as a place worthy of publishing well-written perspectives by

our members and would even be indexed in databases like PubMed.

As part of the ASP branding exercise with Virginia Commonwealth University, students looked through many materials related to the Society, including our *Newsletters*. They were reportedly surprised by the average length the *Newsletter*, and some recommended that we consider a shorter monthly *Newsletter*. When I heard that recommendation, I was both surprised (terrified) and intrigued. A strength of the *ASP Newsletter* to me is the freedom we have to cover items in depth, and since we are electronically distributed, we are not tied into strict page limitations like my predecessors were. Do members want detailed approaches to issues, or is their time limited and they would prefer shorter coverage of issues? We will bring this up in a future membership survey, but my gut feeling is this: if the articles are relevant to the Society and well written, members will find them useful. I am not sure what a monthly issue of the *Newsletter* could look like, but I will keep an open mind.

The *Newsletter* is one of the benefits of ASP membership. The Society invests significantly in its production, and I hope that the members consider it a wise use of Society funds. Any member with ideas about improving the *Newsletter* can approach me, ASP President Dr. Phil Crews, or the two newly appointed members of the *ASP Newsletter* ad hoc Committee, Drs. Gordon Cragg and Kevin Tidgewell. I hope that the *Newsletter* will survive the information revolution in some format, but only time will tell. ■

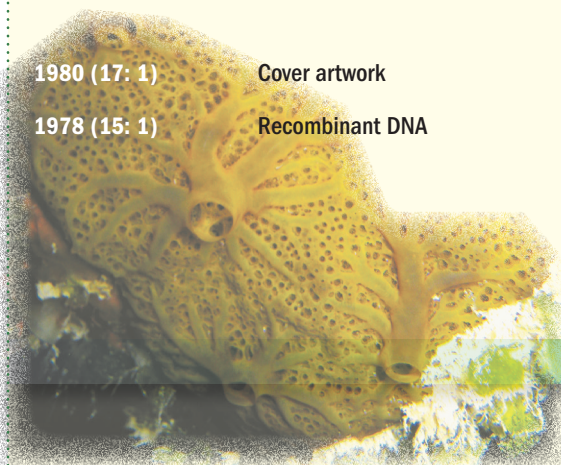
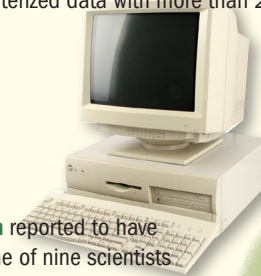
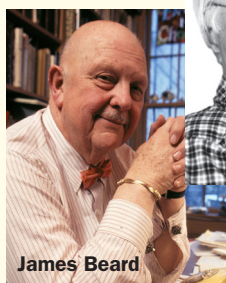
**My ultimate hope is that the *Newsletter* could be viewed as a place worthy of publishing well-written perspectives by our members and would even be indexed in databases like PubMed.**



## 50 Years of Notable First Moments in the ASP Newsletter

A short eclectic list of ASP Newsletter "firsts"

Year (Volume: number)	First Event	Context of Event
1964 (1:1)	ASP Newsletter	Expanded independent coverage from "Notes" that had appeared in <i>Lloydia</i> for two years.
1971 (8: 2)	Mention of current <i>J. Nat. Prod.</i> Editor, <b>A. Douglas Kinghorn</b>	in an announcement by the Pharmacognosy Department, School of Pharmacy, University of London, that Mr. A.D. Kinghorn has been appointed as a staff member along with Dr. B.V. Charlwood.
1972	<i>Lloydia</i> financial surplus	The first-ever surplus of \$2,900 for <i>Lloydia</i> was reported at ASP Business meeting.
1973 (10: 2)	Mention of a computer	Announcement of the American Horticultural Society Plant Records Center's new computerized data with more than 200,000 records.
1974 (11: 1)	ASP member reported to visit People's Republic of China	<b>Norman Farnsworth</b> reported to have been selected as one of nine scientists of the "Herbal Pharmacology" delegation to visit for the month of June, 1974.
1973 (10:3)	ASP emblem	At the Annual Meeting, a motion passed directing ASP President Kelleher to appoint a special committee to design an ASP emblem, and a new emblem was approved the following year.
1975 (12: 1)	Open Letter from ASP President	Written by President Leonard Worthen, and this letter is now a tradition in the <i>Newsletter</i> each fall issue.
1977 (14: 1,2&3)	Brush with culinary giant	ASP members Drs. Varro Tyler, Lynn Brady, and Philip Catalfomo joined cookbook author Mr. James Beard for a continuing education program "Mushrooms and Man" at Linn-Benton Community College.
1978 (15: 1)	Major format change	<i>ASP Newsletter</i> format became longer and the articles more substantial
1978(15: 1)	Members rebuked by President	In a strong and unforgiving manner, President Heinz Floss states that the decline in Pharmacognosy as an academic discipline can be correlated to the dismal publication record of ASP members. A survey indicated that only 26 of the 200-250 members at that time had published a scientific paper in 1976.
1980 (17: 1)	Cover artwork	appears on the <i>Newsletter</i> cover
1978 (15: 1)	Recombinant DNA	President Heinz Floss urges members to use modern techniques in pharmacognosy research including recombinant DNA. This was also mentioned in a meeting report where Dr. Stanley Cohn presented a lecture "DNA Cloning in Microorganisms—A Status Report" at the Third International Symposium on the Genetics of Industrial Microorganisms.



## Newsletter History and Future

1982 (18: 1)	Cartoon	Drawing of scientist in the lab, with caption "Who put the martini in the desiccator?"
1983 (19:2)	Survey	ASP members were given a one-page survey regarding what they want in an Annual Meeting.
1984 (20:1)	Photo	ASP's First President, Dr. Varro Tyler, presenting an appreciation to Dr. Jack Beal as the new <i>J. Nat. Prod.</i> Editor, while Mrs. Earlene Beal looks on.
1988 (23: 4)	Number 4	<i>ASP Newsletter</i> publishes four issues in a single year. Volume 23, Number 4 is called "Winter, 1988". Future <i>Newsletter</i> will adopt this quarterly system, with <b>"Spring", "Summer", "Fall" and "Winter"</b> issue.
1989 (25: 1)	Political action	<i>Newsletter</i> reports ASP Executive Committee has voted unanimously in support of United States House of Representatives Bill HR 4335, The National Biological diversity Conservation and Environment Research Act, that would help prevent the loss of biological diversity through the extinction of plant and animal species.
1991 (27: 1)	Nobel laureate address to ASP	<i>Newsletter</i> announces keynote address at the upcoming ASP meeting in Chicago by Nobel Laureate (1976) Dr. B.S. Blumberg. His talk is entitled "An Exercise in Systematic Plant-derived Medication Discovery."
1994 (29, 4)	Bitnet: JMB@FDACFSAN.	<b>First e-mail address</b> in the <i>Newsletter</i> , for Dr. Joe Betz, who ran the ASP Employment Service. All previous contact information in the <i>Newsletter</i> was either phone numbers or street addresses.
1994 (30, 2)	Madam President	"President's Address" from the Society's first female president, Dr. Alice Clark.
1996 (31, 4)	Annual meeting URL	<a href="http://www.chemistry.ucsc.edu/phil/research/ASP/index.html">www.chemistry.ucsc.edu/phil/research/ASP/index.html</a> Website begun for ASP Annual Meeting at the University of California, Santa Cruz, apparently on the research server of Dr. Phil Crews.
1997 (32, 4)	<a href="http://www.temple.edu/ASP">www.temple.edu/ASP</a>	ASP website started.
2000 (36, 1)	Erratum	In a photo appearing in the previous issue, Dr. Yoshi Asakawa of Toyama University was mistaken for Dr. Al Leung.
2002 (38, 3)	An explosion of color	<i>Newsletter</i> printed for the first time in full color.
2002 38, 2)	Contents	<b>Table of contents</b> included.
2006 (42, 1)	Digital only	ASP <i>Newsletter</i> converts to digital format.
2006 (42, 1)	Know thy neighbor	<b>"Meet a New ASP Member"</b> regular column introduced.
2006 (42, 2)	Research demystified	New column, <b>"Behind the Scenes in Pharmacognosy"</b> , featuring an ASP member's peer-reviewed publication is started, with Dr. Gil Belofsky and his work on the smoke tree.
2007 (43, 4)	Themed issue of <i>ASP Newsletter</i> .	Addresses the role of women in the ASP.
2009 (45, 3)	Record breaking Annual Meeting	<i>Newsletter</i> reports the largest-ever attendance at an ASP-only Annual Meeting with <b>681</b> registrants.
2012 (48, 4)	Reports from the field	Series <b>"Pharmacognosy Field Notes"</b> premieres with article on Dr. Alison Pawlus' work in France.
2013 (49, 3)	Multimedia	<i>Newsletter</i> includes a link to a video depicting the effects of ipecac.
2014 (50:1-4)	Jubilee	<i>Newsletter</i> looks back at its <b>50 years of continuous publication in a series of comprehensive articles.</b>





# ASP 56<sup>th</sup> Annual Meeting: Natural Products Rising to the Top

By Dr. Amy Keller

This year's Annual Meeting will take place at the Copper Mountain Resort and Conference Center in Copper Mountain, Colorado, July 25-29, 2015. The meeting's theme, "Natural Products Rising to the Top," encompasses not only the ascending realm of natural products research, but the majestic setting of the meeting in Colorado's Rocky Mountains. Both registration and abstract submission are open on January 12, 2015. Early registration ends on March 30, 2015, and the abstract deadline is April 30, 2015.

The scientific program will include the following symposia: Natural Products and the Human Microbiota, Natural Products and HIV, Informatics Driven Approaches for Natural Products Discovery, Natural Products Total Synthesis, Natural Products in the Cosmetic Industry, Younger Members Research Spotlight, New Avenues in Botanical Research, Translational Studies of Natural Products, Microbial Metabolites and Bioactive Compounds From Plant Microbial Associates, Natural Products Anticancer Drug Lead Discovery, Beyond the Rule of 5 in the Design of Next-Generation Therapeutics, Enhancing Natural Product Leads via Synthetic Manipulation, Natural Products in Neuroscience, Recent Advances in Chemical Ecology, Novel Screening Strategies for the Identification of Therapeutic Lead Compounds, Chemical Transformations in the Biosynthesis of Natural Products, Microbial Interactions in Humans and Other Animals, and Applications of Mass Spectrometry to Natural Products Drug Studies. With a

scientific program this diverse, engaging presentations are expected that will appeal to a broad range of natural products research interests.

The workshops being offered on Saturday, July 25, include Peer Review at NIH: Grantsmanship and the Peer Review Process at NIH, presented by Dr. Dale Birkle Dreer, Chief of the Office of

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(left): Copper Mountain Resort and Conference Center

**The meeting's theme, "Natural Products Rising to the Top," encompasses not only the ascending realm of natural products research, but the majestic setting of the meeting in Colorado's Rocky Mountains.**



## ASP 56<sup>th</sup> Annual Meeting: Natural Products Rising to the Top



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Scientific Review, National Center for Complementary and Alternative Medicine (NCCAM) Advanced Analytical Technologies as Applied to Natural Products for Drug Discovery, presented by Mr. Mark O'Neil-Johnson, Vice President of Analytical Chemistry at Sequoia Sciences, Inc., Entrepreneurship and Natural Products: Early Stage Opportunities for Your Discoveries, led by Dr. Cedric Pearce, Founder and CEO of Mycosynthetix, and Dr. Nicholas Oberlies, Associate Professor at the University of North Carolina, Greensboro, North Carolina, BioAssays and Pharmacology of Natural Products, presented by Dr. Babu Tekwani, Principal Scientist at the National Center for Natural Products Research at the School of Pharmacy, University of Mississippi, Oxford, Mississippi, and Strategic Funding Priorities for Basic and Mechanistic Research, led by Dr. John Williamson, Branch Chief of Basic and Mechanistic Research in Complementary and Integrative Health Division of Extramural Research, NIH/NCCAM.

The excursion scheduled for Monday, July 27, will be an eve-

ning spent at the Soda Ridge Stables in Keystone, Colorado, (20 minutes by bus from the meeting venue) enjoying a barbeque dinner, music, a bonfire, horseshoes and steer roping, among other activities. On Tuesday, July 28 younger members are invited to ride a lift to Solitude Station, 11,375 feet above sea level, for lunch, views of the Gore and Ten Mile Mountain ranges, and a guided hike along the Hallelujah Loop Trail.

The Copper Mountain Resort and Conference Center is offering standard rooms to meeting attendees for \$125 per night plus tax, if reservations are made prior to July 2, 2015. This rate includes internet and use of the Copper Mountain Racquet and Athletic Club. Copper Mountain is 75 miles due west of Denver and accessed by Denver International Airport. Shuttle service is available to conference attendees for \$54. Keep up to date on conference information and plan your trip by visiting the website: [asp2015.org](http://asp2015.org).

We look forward to seeing you in colorful Colorado! ■

January 12, 2015	Meeting Registration Opens
January 12	Abstract Submissions Open for Oral and Poster Presentations
March 30	Last Day for Early Registration Prices
April 30	Abstract Submission Deadline
July 17	Last Day to for Normal Registration Prices
July 18	On-site Registration Prices Begin
July 25 – 29	ASP 2015 Annual Meeting

**We look forward to seeing you in colorful Colorado!**



# NAPRALERT Partnership Formed

By Drs. Hongjie Zhang, James Graham, and Chun-Tao Che

**NAPRALERT**<sup>®</sup>, the world's first computerized database on Natural Products, was founded at the University of Illinois at Chicago (UIC) in 1975 by the late Dr. Norman R. Farnsworth, Distinguished University Professor at UIC, and a founding member, second President, and Honorary Member of the ASP. To bring the database up-to-date and to continue the legacy of Dr. Farnsworth, a partnership among the University of Illinois at Chicago (UIC), the Institute of Information on Traditional Chinese Medicine (IITCM) in Beijing, China, and the Hong Kong Baptist University (HKBU), Hong Kong, has been formed.

This partnership aims to update and improve the NAPRALERT database immediately, and to further develop it in the future. A collective management team of members from UIC, IITCM and HKBU will collaboratively direct the operation and develop new strategies to update the database and move it forward into the future to keep up

with research advancements in basic and clinical natural products research.

Several people have contributed to the effort to promote the partnership including Dr. Jerry L. Bauman, Interim Vice President for Health Affairs of University of Illinois and Dean of College of Pharmacy, Dr. Chun-Tao Che, Norman R. Farnsworth Professor of Pharmacognosy, and Harry H.S. Fong, Professor Emeritus of Pharmacognosy, both at UIC; Dr. Meng Cui, Director of IITCM; and Dr. Aiping Lu, Dean of the School of Chinese Medicine, and Dr. Hongjie Zhang, Associate Professor, Teaching and Research Division at HKBU. A Memorandum of Understanding was signed among the three parties at HKBU on June 10, 2014, in Hong Kong.

NAPRALERT is a relational database of natural products, including ethnomedical information, chemical, pharmacological, biological, and biochemical data of crude extracts in vitro, in

*continued on page 4*



Seated (l to r), Drs. Meng Cui, Rick W.K Wong, and Dr. Jerry L. Bauman; standing (l to r) Drs. Hongjie Zhang, Alfred Tan, Aiping Lu, Yuan-Bai Li, and Chun-Tao Che.

**This partnership aims to update and improve the NAPRALERT database immediately, and to further develop it in the future.**

### **NAPRALERT is a relational database of natural products, including ethnomedical information, chemical, pharmacological, biological, and biochemical data of crude extracts in vitro, in situ, in vivo, and in humans (case reports, non-clinical trials), as well as clinical study reports.**

*continued from page 13*

situ, in vivo, and in humans (case reports, non-clinical trials), as well as clinical study reports. Similar pharmacological, biological, biochemical, human use, and clinical information are available for secondary metabolites from natural sources. To date, more than 200,000 scientific papers and reviews are included in NAPRALERT, representing publications from all over the world on terrestrial plants, animals, microbes, and marine organisms.

As a first step in updating the NAPRALERT database, Dr. James Graham, the current Editor, traveled to Beijing, China, and Hong Kong this November to conduct training sessions on data input and retrieval. Dr. Graham provided an in-depth introduction to the database to colleagues at IITCM and HKBU, including training on database structure, data entry protocols, and relational searching of the database. In the near term, trained specialists in the IITCM group will input data from current and immediate past literatures to close the information gap in the database.

Moving forward, the possibility of improving the data system in the middle term may involve possibly revising the pharmacology and chemical tables, adding chemical structures. NAPRALERT will also create codes appropriate for the use of traditional herbal medicine therapies and/or diagnoses, in harmony with the conventional pharmacological principles codes presently utilized in the NAPRALERT.

Further down the road, the development of new platform designs integrating Western and Chinese herbal medicine and therapies will be a major priority for the NAPRALERT database with the strategies and implementation tasks to be undertaken by the management team.

Currently, the database is accessible through a fee-based online login system at [www.napralert.org](http://www.napralert.org). Searches may be by "verify names," "organism," "compound," "pharmacological activity," and "author". Future search and access parameters and protocols will be formulated and implemented as the database advances. ■

### **NAPRALERT Trip Report 25 October-14 November, 2015**

*By Dr. James Graham*

**O**n the afternoon of 26 October, a meeting was held at the Institute for Information on Traditional Chinese Medicine (IITCM) in Beijing, China. Attending were Dr. Chun-Tao Che and myself from University of Illinois, Chicago, Illinois (UIC), Dr. Hongjie Zhang from Hong Kong Baptist University (HKBU), and members of Institute of Information on Traditional Chinese Medicine (IITCM), including Drs. Director Meng Cui, Yubanai Li, Yang Yang, and Li Ha Yan.

I would be providing in-depth training to English-speaking staff members with degrees in Chemistry and Pharmacology and a strong focus in Traditional Chinese Medicine. These staff members would be training non-English-speaking workers at IITCM for data entry into NAPRALERT. Di-

rector Cui clarified that, at this time, IITCM was interested in proceeding with data entry within the current framework of NAPRALERT, in the English language. In the short term, all data entry will take place online from Beijing onto the UIC server. In the future, when both China centers have had a chance to become familiar with the database, the possibility of new platform development and installation of parallel servers in Beijing, China, and Hong Kong could be discussed further.

The first week of training provided a lot of specific questions, followed by long discussions in Chinese, and Dr. Che was very patient and helpful in this regard. At the end of each of these long discussions, a better appreciation of the capacity for

problem-resolution (fitting of highly textured data into a relatively flat framework) utilized by NAPRALERT was had. I would also like to think that, through this experience, something of the unique genius of Norman Farnsworth was revealed to our hosts.

The second week of our training session in Beijing, China, continued with more discussions of the field and table structures, and coding of articles. In addition, we covered the use of Structured Query Language (SQL) in order to conduct complex relational queries of the database. Over the course of two weeks intensive training we made much progress and the trainees became more comfortable with the data entry process, in all its complexity. ■

# The Evolution of MARINLIT

Professors Emeriti John Blunt and Murray Munro are both Fellows of the American Society of Pharmacognosy, of the Royal Society of New Zealand and the New Zealand Institute of Chemistry, are co-holders of the Norman Farnsworth Research Achievement Award (2011), the Paul Scheuer Award in Marine Natural Products (2008) and the University of Canterbury Research Medal (2007). Dr. Blunt is also a Fellow of the Royal Society of Chemistry. Drs. Blunt and Munro count among their research successes the characterization of many potentially bioactive skeletons such as the mycalamide, discorhabdin and variolin series, developmental work on the halichondrin skeleton, but consider that their greatest contribution, after mentoring many students and post-doctoral fellows, has been the development of the marine literature database, MARINLIT.

By Drs. John Blunt and Murray Munro

**M**ARINLIT is an extensive database for marine natural products researchers and includes analytical chemical information, as well as biological and geographical data. Have you ever wondered how a database this extensive came into existence?

Forty years ago, two (then) young academics at the University of Canterbury in Christchurch, New Zealand, were contemplating a research future centered on New Zealand marine natural products. Starting-up in a new field required a thorough knowledge of the current and past marine natural products literature. Relatively few papers had been published by the mid-60s, so at the time of our start-up there was only about a decade of work to evaluate and put into context. As was the custom of the day details of these papers were duly noted on punched file cards that could be crudely sorted using a knitting needle. That was the start of MARINLIT.

Our philosophy at that time was to generate a bibliographic database of the marine literature that would allow our research group to manage this knowledge/collection of the marine literature to assist in solving the collection/isolation/structural challenges. Through forty years that philosophy, initially applied to the MARINLIT card collection, has not markedly changed, but with the ever-evolving electronic versions has been able to include many other aspects than just bibliographic data. There were some advantages here as marine natural products can be considered to have started as a topic in 1935 when Werner Bergmann published his first paper.<sup>1</sup> Over the years, the scope of the database has been increased to accommodate interests right across the marine natural products spectrum as the database moved from within the University of Canterbury into the public domain.

By the early 1980s, personal computers were becoming available. With the purchase of an Apple IIE and transfer of the card data using the Apple Personal Filing System (PFS) program, the first electronic MARINLIT version arose. With the electronic version, came the ability to sort data rapidly and also in more com-



The organizing committee for MaNaPro XII held in Queenstown, New Zealand in 2007. Left to right, Drs. Peter Northcote, Brent Copp, John Blunt, Murray Munro, and Michele Prinsep.

plex ways. With PFS, the opportunity was now taken to add more searchable fields to MARINLIT including keywords, taxonomy, geographic zones, and trivial names. The inevitable then happened; we ran out of available memory on the IIE. It was capped at 1MB but we were able to buy a 10MB hard drive. This drive cost a whopping US\$6,000 or NA\$10,000 (which in today's currencies is NZ\$30,000 or US \$25,500), weighed many pounds and was in excess of 1 cubic foot, but it kept MARINLIT expanding both in content and purpose until later in the 1980s.

The next major step forward arose over breakfast discussions at a McDonald's in Kyoto, Japan, with Dr. Raymond Andersen, University of British Columbia (UBC), Vancouver, Canada, during the 1987 Kyoto IUPAC Natural Products Symposium. We were comparing databases and access to the literature, and it rapidly became clear that at Canterbury we had a more sophisticated, complete data-searching package than most other groups. With encouragement from Dr. Anderson our vision expanded beyond Canterbury to setting up a MARINLIT Consortium that groups could join and get the data package (for free) with an annual membership fee thereafter. As very much more work was in-

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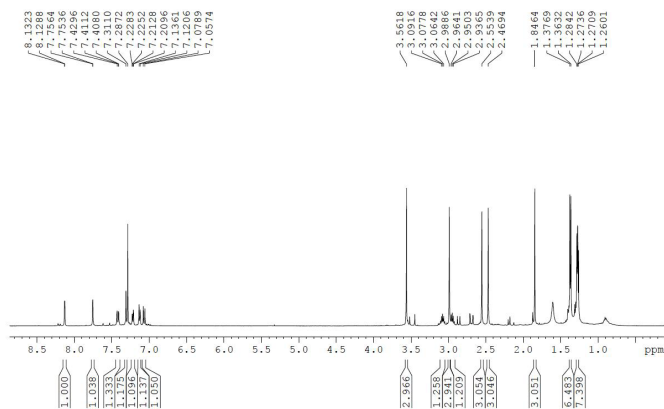


## The Evolution of MARINLIT

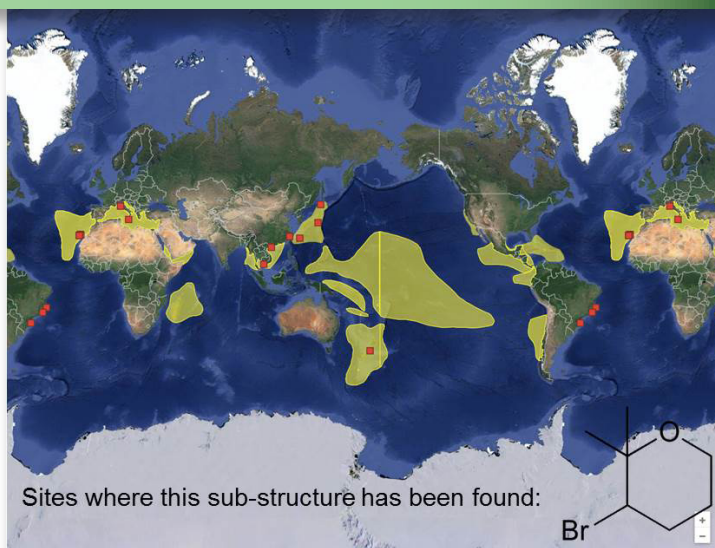
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involved and people would need to be employed, we estimated the need for about 10 groups to join the MARINLIT Consortium in order to make it viable and available at a reasonable cost. We were quickly able to obtain those Foundation Members, but all of this required a quantum leap in the level of sophistication required for the operation of MARINLIT. The level of sophistication of computers had rapidly advanced, the prices had dropped, but much more fortunately Dr. Blunt had the required skills to write a complete new interface for MARINLIT in FoxBase on a Macintosh and then FoxPro on both PCs and Macs. Most of the features that were present in the initial FoxPro version were still available in versions up to 2013, some 25 years later, a tribute to his computing skills. The new version of software allowed *and, or not* arguments to be applied to all aspects of bibliographic, keyword and trivial name searching. Under compound searching, LR and HR masses, mass ranges, and molecular formulae could be searched for. It was also at about this time that following a generous grant from Lederle Laboratories (Dr. Don Borders, currently at BioSource Pharm, Inc.) allowed UV data ( $\lambda$  max and  $\epsilon$  data) to be incorporated and searchable.

Over the next few years, sub-structure and taxonomy searching, along with a comprehensive taxonomy primer were added to the database features. The taxonomy primer was a notable addition. It worked from a phylum level down through the various categories to species or from the genus-species level back up to phylum, allowing marine natural product chemists with limited taxonomic knowledge to build up a full picture of the taxonomic origins and relationships of their samples. Accompanying these enhancements was the incorporation of various NMR simulated spectra and data. This was done in collaboration with Advanced Chemistry Development (ACD)/Labs (Mr. Antony Williams, currently Vice President of Strategic Development, Royal Society of Chemistry) and allowed the generation of simulated  $^{13}\text{C}$ -



$^1\text{H}$ -NMR spectrum of compound used as an example for  $^1\text{H}$ -NMR pattern-matching dereplication.



Results from a biogeography/sub-structure search. Sites are shown in red while the yellow areas represent biodiversity hotspots.

NMR spectra and the ability to cross directly from MarinLit to the ACD Predictors, if you had them, to view the available interpreted spectra. In more recent years a simulated HSQC/DEPT spectrum has been added to the spectral range available within MARINLIT. By this stage, the number of groups in the MARINLIT Consortium had grown to about 80 groups.

Recently, the linking of the output of MARINLIT with BindingDB (Dr. Michael Gilson) allows users to make judgments about the potential biological activities that their compounds might have and would be worth testing for.<sup>2</sup> In the first decade of this century, there was a growing emphasis on dereplication, the ability to ascertain if a newly-isolated or detected compound is novel or known. Ideally, this should be accomplished as rapidly as possible, requiring the least mass and at the lowest possible cost. HPLC analysis of a crude sample can lead to LC/MS and LC/DAD data and possibly correct  $^1\text{H}$ -NMR data.<sup>3</sup> Unfortunately, not all compounds are UV active. Among the problems with an MS approach is the very real possibility of multiple isobaric masses.  $^1\text{H}$ -NMR spectra are the most information-rich of the three possible approaches to dereplication. Thus, a novel approach to dereplication was built into MARINLIT.

This was pattern-matching and relies on simply examining the  $^1\text{H}$ -NMR spectrum of an unknown and counting structural features such as the number and type of methyl groups, olefinic protons, carbinols, and aromatic substitution patterns, among others. These can then be searched against matches in the 26,600 compounds within MARINLIT. The key feature here is a unique algorithm, again generated by Dr. Blunt, that converts a structural file into a populated and searchable series of fields, 42 in all, which each contain the relevant number of structural features of that type. It may not sound like a discriminating approach,

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## The Evolution of MARINLIT

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but it is. Take the example below.<sup>4</sup> Nine Me groups are assignable (integrals), five are singlets of which one can be assigned as –OMe along with four doublet Me. That information alone drops the possible candidates to 39 out of 26,600, but a 1,2,4-trisubstituted aromatic is readily discernible from among the aromatic protons (a broad singlet and two doublets). With this information added there were just two possible answers out of 26,600. Comparison of <sup>1</sup>H-NMR data confirmed that the unknown was a known compound. MARINLIT and the related ANTIMARIN<sup>5</sup> are the only databases that have this capability. MARINLIT also has incorporated the ability to accept varying numbers of <sup>13</sup>C chemical shifts that can be searched against the internal database of ACD calculated/actual chemical shifts and possible structural matches generated.

The taxonomy primer and pattern-matching features set MARINLIT apart from all other databases available to natural product chemists, but there is one other unique feature that has been developed more recently based on biogeography. The coordinates and depth at which each sample has been collected are being incorporated as searchable features. Simultaneously, a lot of effort has gone into backfilling the data so that in time all sites will be recorded. The biogeography data can be used in its own right or can be combined with any or all of the other searchable parameters to generate unique search profiles. The example shown below shows the 22 specific sites at which the 76 bromopyrans had been collected. These data were covered in 41 publications, 31 of which were from red algae (mainly *Laurencia* spp).

Until 2013, MARINLIT was made available to members of the



Dr. Munro, collecting algae and Dr. Blunt reading bioassay plates, on field trips in the early days.

Consortium as a Fox-Pro-based version running on individual computers. During 2013, we decided that the most realistic future for MARINLIT required that it be web-based. This would hasten the rapid dissemination of new publications, better allow for new innovations, and permit the expansion of the database into new fields.

Following discussions

in 2013, the Royal Society of Chemistry (RSC) took over responsibility for MarinLit from September of that year, and a web-based version of MARINLIT was released on May 1, 2014. This version has encapsulated all of the features of the original MARINLIT. This transfer also ensured the continuity of MARINLIT for future generations of marine natural product chemists.

After 40 years as a resident at the University of Canterbury in Christchurch, New Zealand, MARINLIT has evolved to a cloud-based entity. Over that period, the utility of MARINLIT also evolved from a simple bibliographic database to an entity that can assist the marine natural product chemist at every research stage, be it selection of collection site (biogeography), sample evaluation (taxonomy), bioactivity, dereplication, or characterization. We anticipate being involved with the RSC in future developments that could include versions where all structures have calculated minimised conformations allowing ready *in silico* evaluations against target proteins, where the potential MS/MS fragmentations have been calculated to enhance the role of LC/MS in dereplication, the calculation of electronic spectra such as UV to enhance the role of UV in dereplication and calculated optical properties to assist in assignment of absolute configuration. By the time all of these objectives are accomplished, the progenitors of MARINLIT might also be cloud-based. ■

<sup>1</sup> Bergmann, W; Johnson, TB. Articles on the chemistry of the sea animals. I. Announcement. Testings on the *Microciona prolifera* sponge. *Hoppe-Seylers Zeitschrift fur Physiologische Chemie*. **1933**, 222, 220-226.

<sup>2</sup> <http://www.bindingdb.org>.

<sup>3</sup> Lang, G; Mayhudin, NA; Mitova, MI.; Sun, Lin; van der Sar, S; Blunt, JW.; Cole, ALJ.; Ellis, G; Laatsch, H; Munro, MHG Evolving Trends in the Dereplication of Natural Product Extracts: New Methodology for Rapid, Small-Scale Investigation of Natural Product Extracts. *J Nat Prod*. **2008**, 71, 1595-1599.

<sup>4</sup> Chen, DW; Yu, SJ. Anthogorgienes A-O, New Guaiazulene-Derived Terpenoids from a Chinese Gorgonian Anthogorgia Species, and Their Anti-fouling and Antibiotic Activities. *J Agric Food Chem.*, **2012**, 60, 112-123.

<sup>5</sup> ANTIMARIN: a combination database formed from ANTIBASE and MARINLIT. See <http://www.wiley-vch.de/stmdata/antibase> **2011**.php and/or <http://www.chem.canterbury.ac.nz/marinlit/marinlit.shtml>.

# Hot Topics in Pharmacognosy:

## What do you do when you need a ready supply of a phytochemical?

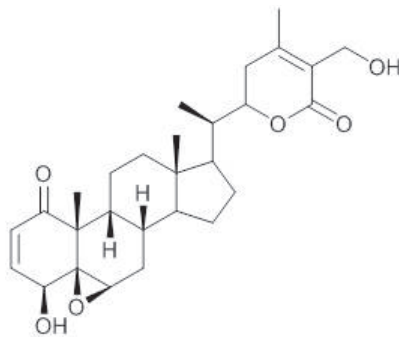
By Dr. David Newman

Most people who work in natural products have faced the problem of isolating a small amount of a potent agent in your biological assay of choice and then realizing that you were going to need multi-kilogram quantities of the plant and a process chemistry laboratory, to say nothing of a regular supply of funding for collection, isolation and purification. In today's funding world, or even that of a few years ago, this type of project was rapidly becoming unfundable unless you could prove that you now had the immediate cure for Alzheimer's Disease (sarcasm intended!).

How did Dr. Leslie Gunatilaka, Professor at the University of Arizona Cancer Center, Tucson, Arizona, solve this problem when he wished to produce some novel withanolides?

Although the story started earlier, in 2006, Gunatilaka et al reported that withaferin A (1) induced the aggregation of actin microfilaments and was mediated by the adapter protein annexin II<sup>1</sup>. The producing plant *Withaferin somnifera* (L.) Dunai has an over 3,000 year history in Ayurvedic medicine as a source of materials to treat a variety of human diseases, including anti-inflammatory, immunomodulation, and antitumor activity, with some relatively recent reviews covering these topics (references 7-9 in Xu et al).<sup>2</sup>

Although the plant was well known and available in the United States of America, the task of obtaining enough to continue work and to investigate the potential of other withanolides led Gunatilaka to investigate other methods of obtaining reproducible quantities of this plant, grown under reproducible conditions. All readers are well aware of the variation in secondary metabolites in wild collections.



Withanolide A

The antitumor activity of withaferin A was first reported by Kupchan in 1965 (references 12 in Xu et al)<sup>2</sup> with significant in vivo activity reported by Shohat et al in 1967 (ref 13 in Xu et al)<sup>2</sup>. In order to generate "active biomass" rather than attempt to fund large scale collections and work-up, the Gunatilaka group utilized an aeroponic process to produce withanolide-containing biomass under reproducible conditions, Xu et al<sup>2</sup>. Two years later, the group reported on other previously unknown withanolides<sup>3</sup> using this technique, which was first pioneered for an entirely different reason by Hubick et al in 1982.<sup>4</sup>

In the images on the following page, which were provided to the author by Dr. Gunatilaka, the results are shown together with the differences in growth that can be seen when the same plant is grown under regular conditions versus the aeroponic method. In addition, the second image shows the production of another steroidal-type secondary metabolite from *Physalis crassifolia* that is not available commercially. The success of this process for generation of novel agents under conditions evading the "usual" natural products chemist can be seen in two further publications from the Gunatilaka group, the first in 2012 by Santagata et al<sup>5</sup> and the second by Wijeratanne<sup>6</sup> in 2014, showing the different withanolides isolatable from this process.

Adding to these published works is a patent for the process and the activity, applied for in 2010. This shows the processes used in greater detail, and the potential for this method of production of plant secondary metabolites is clear. ■

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### Development of an Innovative Soil-less Aeroponic Technique for Large-Scale Production of Withaferin A

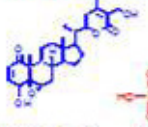

**Withania somnifera** (Winter Cherry) - Slow Growing Plant (ca. 2-3 years to reach maturity) Withaferin A is known to Occur Mainly in Roots



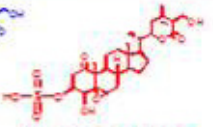
**Aeroponic Chamber**





Reaches maturity in 6-8 months




Withaferin A



Withaferin A Sulfate

 Intermittent Spraying of Roots with a Nutrient Solution


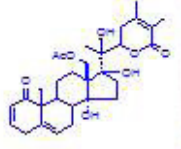
• Withaferin A is Produced in Aerial Parts of Aeroponically-grown Plants and Occurs as Its Water-soluble Sulfate (Pro-Drug) - >100 grams of WA

(Xu et al., *Bioorg. Med. Chem.*, 2009, **17**, 2210-2214) [5 mg for \$309]  
 (Sunatilaka et al., Patent Application No. WO2009US05146 of March 18, 2012)


...the differences in growth that can be seen when the same plant is grown under regular conditions versus the aeroponic method.



### Aeroponic cultivation of *Physalis crassifolia* for Production of Physachenolide D for Animal Studies

Physachenolide D (NPC-13-1C) is NOT commercially available

(NPC-13-1C)



*Physalis crassifolia* thrives under aeroponic conditions  
 Biomass [one GH (12 aero-chambers)] → 12 g of NPC-13-1C

# Meet a New ASP Member

*In our winter issue of the Newsletter, we meet new ASP Member Dr. Edyta Grzelak, Postdoctoral Research Associate, at the University of Illinois at Chicago (UIC) College of Pharmacy, Chicago, Illinois. Dr. Grzelak shares her enthusiasm about anti-tuberculosis drug discovery, as well as flamenco music. We warmly welcome Dr. Grzelak to the ASP and look forward to seeing her at future Annual Meetings.*

By Dr. Dan Kulakowski

## How did you hear about the ASP?

My advisor, Dr. Birgit Jaki, Research Assistant Professor, Institute for Tuberculosis Research, UIC College of Pharmacy, is an active ASP member. She introduced me to the society and highly recommended that I join.

## Why did you join ASP?

I am new to the field of natural products research. I have decided to join ASP because, in my opinion, being a part of this society is a great opportunity to interact with natural products scientists and learn from the best.

## Do you belong to any other scientific societies?

Yes, I am a member of the Polish Chemical Society.

## What is your scientific background?

My background includes BS and MS degrees in Chemistry from University of Maria Curie - Skłodowska, Lublin, Poland. During my Master's degree, I was involved in a project focused on antibiotic residue control in food and environmental waters under the supervision of Dr. Ana M. García-Campaña at the Department of Analytical Chemistry, University of Granada, Spain. I became more interested in the field of quality control in food, environment and clinical analytical chemistry, and I decided to continue my education. I received my PhD in Analytical Chemistry in May 2013, working on the development of analytical and microbiological methods for determination of antibiotic residues in foodstuff of animal origin. My research was performed under supervision of Dr. Irena Choma at the Department of Chromatographic Methods, University of Maria Curie-Skłodowska and Dr. Barbara Majer-Dziedzic at Department of Veterinary Microbiology, University of Life Science, Lublin, Poland, and under supervision of Drs. Dolores Barrón and José Barbosa at the Department of Analytical Chemistry, University of Barcelona, Barcelona, Spain.

## What are your current research interests in pharmacognosy?

My current research interests are focused on antituberculosis drug discovery from *Actinomyces* extracts. I am involved in a truly interdisciplinary project that integrates microbiological, preparative, and analytical methods. One of the goals of this project is



Dr. Edyta Grzelak

DR. EDYTA GRZELAK

establishing a three-dimensional scheme, HPTLC-bioautography-MS/NMR, for rapid detection of antituberculosis active principles in microbiological fermentation extracts. Being new to the field of natural products research and drug discovery, I consider myself fortunate to have Dr. Birgit Jaki, Dr. Scott Franzblau, Dr. Sanghyun Cho and Dr. Guido Pauli as my advisors and the opportunity to interact with members of the Institute for Tuberculosis Research and Natural Product groups at UIC.

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

I would like to make connections with scientists involved in a similar area of research. I also want to keep informed of activities within the field of natural products research.

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

Traveling (backpacking) is definitely my favorite activity. I also enjoy doing yoga, swimming, kayaking, listening to flamenco music, reading travel books, and recently also experimenting in the kitchen. I am also exploring Chicago and the American lifestyle. ■

**My current research interests are focused on antituberculosis drug discovery from *Actinomyces* extracts.**

# New ASP Members



## Welcome to ASP!

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 11 domestic full members, 3 international members, and 10 associate members. We look forward to meeting you and learning more about you and your work.

### ACTIVE MEMBERS

Dr. Sohail A. Alsohaili  
Mafrq, Jordan

Dr. Samson Amos  
Cedarville, Ohio

Dr. Gary Reid Bishop  
Clinton, Mississippi

Dr. Kelley M. Bishop  
Clinton, Mississippi

Dr. Dara Dastan  
Hamadan, Iran

Dr. Matthew Garrett Donahue  
Hattiesburg, Mississippi

Dr. Baram Ahmed Hamah-Ameen  
East Lansing, Michigan

Dr. Sara M. Handy  
College Park, Maryland

Dr. Tyler A. Johnson  
San Rafael, California

Ms. Sharon J. Mackey  
Lexington, Kentucky

Dr. Carter Alexander Mitchell  
Norman, Oklahoma

Dr. Mudit Mudit  
Tonawanda, New York

Dr. Jose G. Sena Filho  
Timbauba, Brazil

Dr. Jianlan You  
Norman, Oklahoma

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Katherine Zink  
Evanston, Illinois



# 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).

**249<sup>th</sup> American Chemical Society National Meeting & Exposition: Chemistry of Natural Resources**

**March 22-26, 2015**

**Denver, Colorado**

[www.acs.org/content/acs/en/meetings/spring-2015.html](http://www.acs.org/content/acs/en/meetings/spring-2015.html)

**ASP Annual Meeting**

**July 25-29, 2015**

**Copper Mountain Resort  
& Conference Center**

**Copper Mountain, Colorado**

[asp2015.org](http://asp2015.org)

**Phytochemical Society of Europe**

**April 27-30, 2015**

**Murcia, Spain**

[www.phytochemicalsociety.org](http://www.phytochemicalsociety.org)

**Gordon Research Conference:  
Natural Products**

**July 26-31, 2015**

**Proctor Academy/Andover, New Hampshire**

[www.grc.org/programs.aspx?id=11732](http://www.grc.org/programs.aspx?id=11732)

**Joint Meeting of the Society for Economic Botany (SEB) and the Indigenous Plant Use Forum (IPUF)**

**June 28-July 2, 2015**

**Clanwilliam, Western Cape, South Africa**

[www.econbot.org](http://www.econbot.org)

**63<sup>rd</sup> International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA)**

**August 23-27, 2015**

**Budapest Congress Center**

**Budapest, Hungary**

[ga2015.hu](http://ga2015.hu)





## Brief News From Washington

By Dr. Georgia Perdue

- At its September 19 meeting, the National Institutes of Health (NIH) **National Institute of General Medical Sciences (NIGMS)** Advisory Council unanimously approved a new concept for a **pilot program, Maximizing Investigators Research Award, MIRA. This five-year renewable award merges Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR) and Institutional Development Award (IDeA) programs.** Congress wanted NIGMS to consider better coordination of these programs because there was unevenness in some states, especially with the IDeA program for which NIGMS has taken the lead. **MIRA provides a single, five-year award; the researcher must relinquish other NIGMS support; investigators will be required to spend at least 50% of their time on research and they can require supplements for equipment. Renewal may be at the same level with perhaps some increases. The success rate will be higher because all of the work will be supported with one grant. A separate MIRA-specific panel will be responsible for processing and reviewing the grants. There must be evidence of institutional support and mentoring. NIGMS will test MIRA with a moderate number of applications. The institute is encouraging established research principal investigators with R01 grants from NIGMS to apply. Many early stage investigators like MIRA.** NIGMS will periodically review the program and try to keep the research broad-based. Positive comments from the scientific community: MIRA increases flexibility, saves time in writing grants, provides stable support and better reviews; it is a “good idea- do it!” Negative comments included: well-funded labs will benefit the most; will there be willing reviewers for this program? Some Advisory Council members said, “we have to try this;” “if it works we could transform all of NIH.”
- **Dr. Josephine Briggs, Director of the National Center for Complementary and Alternative Medicine (NCCAM), is very concerned about some claims being made about “alternative” treatments for Ebola....** In a statement in September on NCCAM's website she says “...when health crises such as this... occur there are often some who will try to profit – advertising false claims that their product cures and prevents a particular disease.” She emphatically states, **“there are no known herbal treatments or other alternative therapies that prevent or cure this disease.”** Dr. Briggs' statement was quoted, in part, in an October 5 editorial of the *Washington Times*: “[T]he quality of mercy is always strained, but snake oil comes raw and unfiltered, harvested from evermore lethal snakes.” It went on, “One purported cure, called Ebola-C... a “\$35 bottle of pills [offering] 554% of the recommended daily dose of vitamin C to boost the patient's immune system to withstand the virus.” The editorial also notes that a California homeopathic doctor bought space in African newspapers advertising a ‘digitized e-Remedy’... of two 10-second audio clips of white noise to stimulate the body.... “to enhance its own functioning on every level immune system, circulatory system, and energy....” Also referenced were home remedies found on the websites for *Natural News* and *Science-Based Medicine*. Sad, indeed.
- The National Institute of Allergy and Infectious Diseases (NIAID) **announced on November 28 that the Ebola vaccine, co-developed by NIAID and GlaxoSmithKline (GSK), and tested in Phase I clinical trials on 20 healthy adults, “was well tolerated and produced immune system responses....”** NIAID Director, Dr. Anthony Fauci stated “... we are

*continued on page 24*

**“...when health crises such as this... occur there are often some who will try to profit –advertising false claims that their product cures and prevents a particular disease.” She emphatically states, “there are no known herbal treatments or other alternative therapies that prevent or cure this disease.”**



## Brief News From Washington

*continued from page 23*

continuing our accelerated plan for larger trials to determine ...efficacy in preventing the Ebola ...infection.”

- **At the December 2 joint National Cancer Advisory Board (NCAB) and Board of Scientific Advisors (BSA) meeting,** National Institutes of Health (NCI) director Dr. Harold Varmus, noted that President Obama would be speaking later that afternoon at NIH about supplemental funding for an Ebola vaccine. [The NIH campus had already been blocked off for the President's visit so NCAB/BSA members were greatly delayed in arriving at the meeting!!] Before beginning his comments, Dr. Varmus showed a short **video of President Franklin Roosevelt's speech on October 31, 1940 as he stood on the steps of the NIH to dedicate the new NCI building and the campus.** The President thanked Mrs. Helen Woodward Wilson and her family for providing the land. A few salient points from FDR's remarks: **“...only in America can we turn to institutions to save life and not destroy it. Here we dedicate these noble buildings to serve man... only in the United States.... We cannot be a strong nation [unless] we are a healthy nation.... Neither the government nor the American people intend to socialize medical practice any more than they plan to socialize industry. The family doctor performs this service.... This institute is promoting cancer research throughout the nation and bringing a message of hope to people.... The research here and at universities is to unravel the mysteries of disease....”** (The video can be seen online: <http://circulatingnow.nlm.nih.gov/2014/09/10/rare-footage-of-fdr-at-nih/>).
- In his report to the NCAB/BSA, Dr. Varmus touted the **Outstanding Investigator Reward**, but noted **“there is a shortage of people who are outstanding to review the grants... so prepare to be a reviewer.”** He further said **NIH will be sending a message to all investigators with NIH funding: “expect ... to serve on review committees.”** NIH is also working on the best venue for grantees to disseminate their research results. Another note on funding by Dr. Varmus: while the “cost of research has gone up, we are underfunding [it]... but be sure that we are not overlooking things that are important.”
- **In mid-November, the NIH, Amgen Foundation, and the Foundation for the NIH, announced a collaboration to help undergraduate students “...learn lab work, science and leadership skills with mentors from NIH.”** The program will start in 2015 and is the first year NIH is participating on its main campus in Bethesda, Maryland, where “scholars will spend the summer... working with leading scientists.” The California-based Amgen Foundation is providing an \$850,000 grant to the Foundation for the NIH. This is an opportunity for “real-world experience [for] undergraduate students from low resource settings who lack opportunities to perform independent research during the school year....” “... a customized curriculum... will teach leadership skills and [preparation] for research-oriented careers,” stated Dr. Sharon L. Milgram, Director, NIH Office of Intramural Training & Education. Stay tuned.
- It is amazing how **Taxol® and camptothecin derivatives** keep on giving: an intravenous infusion of bevacizumab solution combined with **paclitaxel** and **topotecan** was approved by the Food and Drug Administration (FDA) to “treat patients with platinum-resistant, re-current epithelial ovarian fallopian tube, or primary peritoneal cancer.”
- **The FDA has once again issued a warning about the deleterious effects that can result from taking dietary supplements with prescription drugs!**
- **In September President Obama signed an executive order directing Federal agencies to ramp up efforts in the fight regarding: “drug resistant bacteria” ... “a threat to national security and the economy.”** This action seems to have been prompted by the report on antibiotic resistance issued by President's Council of Advisors on Science and Technology (PCAST).
- **Ebola and incentives for drug companies: Senators Tom Harkin (D-Iowa) and Lamar Alexander (R-Tennessee) in mid-November, following committee hearings, introduced legislation S.2917, Adding Ebola to the FDA Priority Review Voucher Program Act.** The Senate approved the bill unanimously on December 3. Approval of treatments for Ebola from drug companies will be on the FDA fast track and companies would be allowed to receive a priority review for any other of their drugs. Senator Alexander said in a statement, “the world is in desperate need of a vaccine to prevent Ebola and a drug to treat it.” **After its own committee hearings, the House quickly introduced H.R. 5729 with the identical title as the Senate bill.** The House prime mover is **Representative Marsha Blackburn (R-Tennessee).** A vote is imminent.
- **“[D]romedary camels... are the primary... carrier of Middle East Respiratory Syndrome Coronavirus (MERS-CoV)”** noted NIH in a statement issued in late September. The results, from **a collaborative study conducted by researchers at the National Institute of Allergy and Infectious Diseases and Colorado State University,** showed when the eyes, noses and throats of three healthy camels were exposed to the virus isolated from a patient, “each camel developed a mild upper respiratory tract infection consistent with what scientists had observed throughout the Middle East.” “... high levels of infectious virus were found in samples taken from the nose even a week after infection....” The virus was still “detected up to 35 days.... The camels quickly recovered... without apparent complications...” **The researchers say the nasal secretions provide a likely source of transmission to people who handle the animals. It is thought that vaccinating the camels could reduce the risk of MERS-CoV to people and other camels.**
- The National Science Foundation reports that researchers at the University of Florida “have shown **overhunting [in countries outside the United States] “leads to the extinction of dominant tree species.”** The report published in the *Proceedings of the Royal Society of London B.*, notes the **“over-hunted animals...disperse the [tree] seeds resulting in hardier and healthier trees.”** ■

# From the Archives: The Genesis of NAPRALERT®

By Ms. Devhra BennettJones

When the Society's members engage in their calling to conduct research, they invariably must consult the existing literature about natural products scholarship. The NAPRALERT® database service is an invaluable tool in conducting a systematic search of journals significant to the science of natural products.

The database of literature citations is considered to be comprehensive from 1975 - 2003. While many ASP members are aware of the crucial role of Dr. Norman Farnsworth in founding the bibliographic database, and the ongoing infrastructural commitment by the University of Illinois, Chicago, scores of ASP members are unaware of the NAPRALERT® origins, with the late Dr. Eldin V. Lynn, Professor of Pharmacy at the Massachusetts College of Pharmacy.

Dr. Lynn worked for nearly a decade and a half chronicling what was known as the "Lynn File." Long before the wide-spread role of computers in scholarly research, Dr. Lynn composed a broad bibliography of phytochemistry in his handwriting, writing each citation on 3 ½ inch by 6 inch slips of paper, covering the literature up to 1954. He recorded what was at the time believed to have been the largest topical bibliography in existence.

Dr. Lynn organized the data into three categories. The "Generic File" held thousands of alphabetized paper slips of scientific plant names with bibliographic citations. The "Author File" was arranged alphabetically and chronologically. It contained paper slips of their names, references, and succinct abstracts of the author's published research. The third file, known as the "Chemical File" was comprised of alphabetized plant constituent names.

The synthesis of Dr. Lynn's quest to compile the most comprehensive phytochemistry bibliography, his organiza-

tional skills, and his meticulous attention to detail paved the path to the publication of eight monographs of *The Lynn Index: A Bibliography of Phytochemistry*. Monographs I, II, III, IV, and V, published between 1957 and 1962, and edited by Dr. John W. Schermerhorn and past ASP President Dr. Maynard W. Quimby. From 1969 to 1974, with Dr. Farnsworth serving as lead editor, he and past ASP President Dr. Ralph N. Blomster joined Dr. Schermerhorn and Dr. Quimby in the publications of Monographs VI, VII, and VIII.

The data in each monograph was arranged with full consideration of researchers' needs. Natural products scientists could assess what had been published on specific plants, including what constituents had been identified. Each bibliographic entry was annotated in order to aid the efficiency of the research process. While the age of the internet makes these criteria seem elementary, the comprehensive scope and utility of the Lynn Index is most impressive considering the massive amount of research time and fastidious attention to

detail required to compile such a paper-based resource.

The editors and Dr. Lynn are to be commended on their tireless efforts to provide this anthology to scientific researchers. In addition to his massive bibliography, Dr. Lynn composed textbooks on organic chemistry and pharmaceutical therapies. His contribution to the bibliographic scholarship lives on each time ASP members and natural products scientists around the world download resource citations from NAPRALERT®. ■

*continued on page 26*



**The NAPRALERT® database service is an invaluable tool in conducting a systematic search of journals significant to the science of natural products.**

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## From the Archives: The Genesis of NAPRALERT®

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**The scope of this valuable phytochemistry research tool can be appreciated by a brief summary of the orders and families found in each monograph:**

**Monograph I** contained order Centrospermae and the families: Aizoaceae; Amaranthaceae; Caryophyllaceae; Chenopodiaceae; Nyctaginaceae; Phytolaccaceae; and, Portulacaceae.

**Monograph II** focused on order Malvales and families: Bombacaceae; Elaeocarpaceae; Gonystylaceae; Malvaceae; Sterculiaceae; and, Tiliaceae.

**Monograph III** concentrated on order Microspermae and the family Orchidaceae, and order Scitamineae and families: Cannaceae; Marantaceae; Musaceae; and, Zingiberaceae.

**Monograph IV** comprised order Glumiflorae and families Cyperaceae and Gramineae.

**Monograph V** consisted of order Plantaginales and family Plantaginaceae, and order Rubiales and families: Caprifoliaceae; Dipsacaceae; Rubiaceae; and, Valerianaceae.

**Monograph VI** covered order Tubiflorae and families: Acanthaceae; Bignoniaceae; Boraginaceae; Convolvulaceae; Gesneriaceae; Globulariaceae; Hydrophyllaceae; Labiatae; Lentibulariaceae; Martyniaceae; Myoporaceae; Orobanchaceae; Pedaliaceae; Polemoniaceae; Scrophulariaceae; Solanaceae; and, Verbenaceae.

**Monograph VII** contained order Pandanales and families: Pandanaceae; Sparganiaceae, and Typhaceae. Order Helobiae and families: Alismaceae; Hydrocharitaceae, Juncaginaceae; and, Potamogetonaceae. Order Principes and family Palmae. Order Spathiflorae and families Araceae and Lemnaceae. Order Farinosae and families: Bromeliaceae; Commelinaceae; and, Pontederiaceae. Order Liliiflorae and families: Amaryllidaceae, Dioscoreaceae; Haemodoraceae; Iridaceae, Juncaceae, Liliaceae, Stemonaceae; and, Taccaceae. Order Piperales and families Piperaceae and Saururaceae. Order Salicales and family Salicaceae. Order Garryales and family Garryaceae. Order Myricales and family Myricaceae. Order Juglandales and family Juglandaceae. Order Fagales and families Betulaceae and Fagaceae. And, order Urticales and families: Moraceae; Ulmaceae; and, Urticales.

**The final Lynn Index Monograph VIII** consisted of order Proteales and family Proteaceae. Order Santalales and families: Loranthaceae; Olocaceae; Opiliaceae: and, Santalaceae. Order Artistolochiales and families: Aristolochiaceae; Hydnoraceae; and, Rafflesiaceae. Order Polygonales and family Polygonaceae. Order Ranales and families: Annonaceae; Berberidaceae; Calycanthaceae; Hernandiaceae, Larfizabalaceae; Lauraceae; Magnoliaceae; Minispermaceae; Monimiaceae; Myristicaceae; Nymphaeaceae; Ranunculaceae; Sargentodoxaceae; and, Schisandraceae. Order Parietales and families: Actinidiaceae; Ancistrocladaceae; Begoniaceae; Bixaceae; Canellaceae; Caricaceae; Caryocaraceae; Cistaceae; Cochlospermaceae; Datisceae; Dilleniaceae, Diptercarpaceae, Flacourtiaceae, Frankeniaceae; Guttiferae; Hypericaceae; Loasaceae; Marcgraviaceae; Ochnaceae; Passifloraceae; Samydaceae; Tamaricaceae; Theaceae; Turneraceae; and Violaceae. Order Opuntiales and family Cactaceae. Order Myrtiflorae and families: Combretaceae; Cynomoriaceae; Elaeagnaceae; Lythraceae; Melatomaceae; Myrataceae; Nyssaceae; Onagraceae; Punicaceae; Rhyzophoraceae; and, Thymelaeaceae.

**The data in each monograph was arranged with full consideration of researchers' needs. Natural products scientists could assess what had been published on specific plants, including what constituents had been identified.**

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