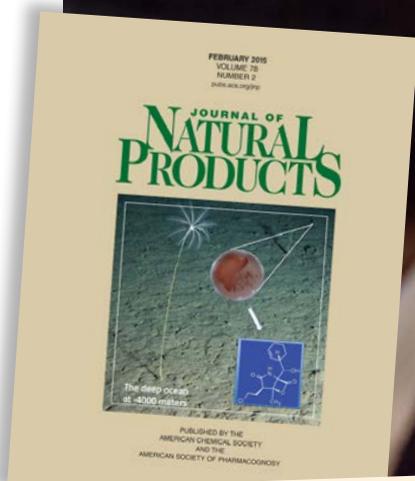




The American Society of Pharmacognosy

The ASP Newsletter
Volume 51, Issue 1



DR. GUIDO F. PAULI

Editor A. Douglas Kinghorn: 21 Years of Extraordinary Service to Natural Products

By Drs. Gordon M. Cragg and David J. Newman

It is a great honor and pleasure for us to pay tribute to our good colleague and friend, A. Douglas Kinghorn, on his entering his 21st year as Editor-in Chief of the *Journal of Natural Products*. It was a most wise and farsighted decision by then ASP President, Dr. Les Mitscher, and his 'search committee' to extend an invitation to Doug to take over the reins of editorship of the *J. Nat. Prod.* on the retirement of Dr. James E. Robbers in 1993. We do not know whether Doug envisaged such a lengthy

and continuing period of service when he assumed duty in 1994, but there can be few journal editors who have provided such dedicated and outstanding service. ASP members, and indeed all members of the world natural products community, owe Doug an immense debt of gratitude for his inspiring leadership, not only as an editor, but also as a teacher and mentor, and as an outstanding research investigator.

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EDITOR'S CORNER



Happy Lunar New Year! I am writing this Editor's Corner on the eve of the Chinese New Year in my office at the Chinese University of Hong Kong's Institute of Chinese Medicine. It is a quiet time at the University as many students and staff have left to be with their families, but it is a good time for me to catch up on the *ASP Newsletter*.

For the past 4 months or so, the *Newsletter* has been developing a special tribute to Dr. A. Douglas Kinghorn's 21 years as the Editor of the *Journal of Natural Products*. At a conference last fall, Dr. Rob Verpoorte, mentioned that he was stepping down from his own Editor position at the *Journal of Ethnopharmacology*, and pointed out how dedi-

icated Doug has been in his long tenure as Editor of *J. Nat. Prod.* This comment captured my attention and made me realize that the *Newsletter* has never done a feature on Doug as Editor. When considering who could capture the essence of Doug's work on the *J. Nat. Prod.*, I immediately thought of ASP members, Drs. Gordon Cragg and David Newman. Together, Gordon and Dave have some of the most highly cited articles that have ever appeared in the *Journal*. I was very pleased indeed that they agreed to co-author this article: Newman and Cragg, at it again!

As a former postdoctoral fellow with Doug, I am especially happy that we can devote this issue of the *Newsletter* to his many achievements as Editor of *J. Nat. Prod.* I remember very well in 1993, being a postdoc in Doug's laboratory, when he told us that he would become the new Editor of *J. Nat. Prod.* Now, 21 years later, he has managed to transform the journal in ways, large and small, that have established it as the leading publication in natural products research. I am proud of what Doug has done for the journal and for the Society, and I feel fortunate to have interacted with him in many ways over these past two decades.

In addition to the Newman and Cragg article on Doug, we have tried to weave other tributes to Doug into our regular columns. For example, in Ms. Devhra BennettJones' "From the Archives," she has done a Herculean task of going through the ASP Archives at the Lloyd to trace many of Doug's career achievements. For *Pharmacognosy Field Notes*, we have turned to one of Doug's long-time collaborators at University of Illinois at Chicago, Dr. Doel Soejarto, to recount in great detail his field trip with Doug to South America.

While much of the issue focuses on Doug's achievements, we do cover other news as well. We include a comprehensive piece about the purchase of Cubist Pharmaceuticals by Merck & Co., written by ASP member Dr. Cedric Pearce. Also, there is an update on the ongoing proposed rules by the United States Patent and Trademark Office that may have major changes to the way in which the intellectual property of natural product drugs are protected in the United States. Dr. Georgia Perdue covers Washington, including the new name of National Institutes of Health's National Center for Complementary and Alternative Medicine.

I wish you a healthy and productive Year of the Sheep! *Gung hei fat choi!*

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/?page_id=163

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EDITOR EXTRAORDINAIRE

As part of the volume on the *History of the American Society of Pharmacognosy. 50 Years of Progress in Natural Products Research*,¹ published in 2009 on the celebration of the 50th Anniversary of the founding of the Society, Doug wrote a detailed account of the history of *Lloydia* and the *J. Nat. Prod.*² It started with the first issue of *Lloydia*, published by the Lloyd Library of Natural History in December, 1938 (subtitled as *A Quarterly Journal of Biological Science*) under the Editorship of Dr. Theodor K. Just who served until 1959, when it passed into the hands of Dr. Arthur E. Schwarting who served until 1976. In 1970, the words “*Journal of Natural Products*” appeared on the cover, though the primary title remained “*Lloydia*.” In 1977, Dr. Jack

L. Beal became Editor, and beginning with volume 42 in 1979, the *Journal* title was changed to the *Journal of Natural Products* (*Lloydia*). In 1984, Dr. James E. Robbers took over as Editor, and during the years 1984-1993, the editorial content of *J. Nat. Prod.* became very similar to its present content, with many important research articles being published, and with marine natural products chemistry receiving increasing emphasis.

Regarding the evolution from *Lloydia* to the *Journal of Natural Products* as we know it today, Dr. Mitscher relates, “*Lloydia* played a vital role early on in sustaining the American Society of Pharmacognosy, providing a publication role for its members, and increasingly for others as well. During those years the editorship passed through various hands, all of whom devoted long hours of voluntary labor ensuring that the papers accepted were of high quality and relevance, and they deserve our collective gratitude. Nonetheless, as the Society grew in status and membership and the number of papers and their complexity increased continually, this effort became ever more and more burdensome. Thus, it became clear that a change was necessary as the journal could not long continue as a largely ‘volunteer enterprise’.”

Meanwhile, Doug had applied for membership of the ASP on January 6, 1978, the year Dr. Harry Fong was Chair of the Membership Committee, prior to his becoming President of the Society in 1979 (ASP History, p. 16, Table 4).¹ We surmise that Harry, already a senior University of Illinois at Chicago, Chicago, Illinois, faculty member, played a vital role in recruiting Doug to the ASP ranks, and we express our gratitude to Harry for this farsighted action!

It did not take long for Doug to become absorbed in Society activities, and his numerous contributions to the Society are recorded in the Timeline presented by Ms. Devhra Bennett-Jones in “From the Archives” in this *Newsletter*. In 1985, Doug was elected to the Executive Committee where he served for four years, becoming ASP Vice President and Chair of the Membership Committee in 1989. He served as President of the Society in 1990-1991, and in 1991, he served as Program Committee Chair for the Annual Meeting of the ASP held in Chicago, Illinois.

Dr. Mitscher recalls that it was around this time that, “The American Chemical Society (ACS) had expressed an interest in publishing a journal devoted to natural product pa-

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DR. GUIDO F. PAULI

Doug's ASP Membership Application Form

I hereby apply for membership in

THE AMERICAN SOCIETY OF PHARMACOGNOSY

Please Type or Print
Name (Dr.; Mr.; Mrs.; Miss) Dr. A. Douglas Kinghorn Date 1/6/78

Mailing Address 400, W. Deming, #9 G, Chicago, Illinois 60614

(Street) (City)

(State) (Zip Code) (County)

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pers and was interested in taking advantage of the position occupied by *JNP* (*Lloydia*), should the ASP be interested as well. Furthermore, the editor at the time had expressed a desire to step down, thus presenting us with an opportunity to take advantage of working with an experienced major organization with substantial resources. Thus, it seemed that changing the publication name from *JNP* (*Lloydia*) to the *Journal of Natural Products*, and its host to the American Chemical Society, would be a timely and natural evolution. It was, however, a greater challenge to bring this about than many might suppose today. Some of the founders and the long term members of the Society closely identified with *Lloydia* and worried that the Society would become submerged by doing this, and lose its identity. Nonetheless the rapid development of the field, the increasingly scattered nature of the literature, the complexities of production, and the volume of work suggested that a change was necessary, and the Society as a whole accepted that we should explore this opportunity. The American Chemical Society assisted the Society greatly in solving the technical problems of disengaging from our obligations with the printer at the time and satisfying the *Lloydia* trustees that the change was in no way a criticism of its contributions, and that their role was appreciated. The members of ASP were kept informed throughout these complex negotiations and became increasingly comfortable with the process."

Dr. Mitscher notes that, "An essential element in making the transition successfully was finding an editor whose youth, energy, scientific credentials, vigor and diplomatic skills would assuage doubts that the transition would succeed, and yet still represent the ASP and its aspirations satisfactorily. We were delighted therefore when Doug Kinghorn, the first person approached, readily accepted the possibility of taking up the editorship. Now that the 21st anniversary of these events is upon us, we realize how very fortunate that was. Under his leadership, *JNP* has become a flagship scientific journal, and the Society has prospered mightily as a consequence of his tireless and wise stewardship. We have reached this anniversary with grateful thanksgiving. We would not now be in the present gratifying position without him!"

The history of the negotiations between ASP and ACS which led to the "Agreement for the Joint Publication of The *Journal of Natural Products*" and the start of the co-publication of *J. Nat. Prod.* in January, 1996 (volume 59), as well as the significant benefits which have accrued to

both ASP and ACS over subsequent years, have been covered in detail by Doug in his chapter in the ASP History,² and also "*Journal of Natural Products: A Decade of ACS and ASP Collaboration*," published in the 2006 Winter ASP Newsletter.³ Dr. Richard 'Dick' Powell, who has been closely associated with Doug throughout his period as Editor-in-Chief, adds – "Early in his tenure, Editor Kinghorn was presented with many details and problems when the decision was made to publish the *Journal of Natural Products* jointly with the American Chemical Society. Doug has mastered these and continuing situations as they arise, and he is certainly primarily responsible for the rapid increase in status of *JNP* during this period."

In the 2013 Winter ASP Newsletter (p. 5),⁴ Doug reminisced about his 20 years as Editor-in-Chief of *J. Nat. Prod.*, and the benefits which have resulted from the co-publication with ACS. It was very enlightening to gain insights into Doug's perspective after 18 years of formal affiliation with ACS. He recalled how in 1994, "the Editor was required to read over and copyedit each accepted manuscript and all author galley proofs prior to publication!" However, "as we entered into our working relationship with ACS, an immediate benefit to the Editor-in-Chief was that it was no longer necessary to proofread accepted manuscripts and author galleys." Furthermore, "Working with the ACS on the journal has enabled *JNP* to be at the forefront of many technological developments that have occurred, and there is no question that the prestige of *JNP* has increased substantially

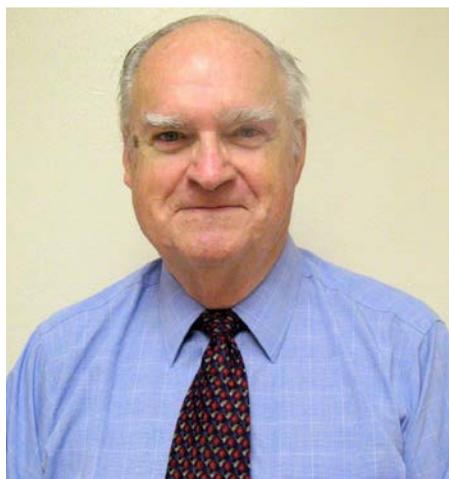
as a result of becoming formally affiliated with ACS 18 years ago. It is now far more accessible than ever before, with greatly improved color graphics, and has a much shorter publication time than previously for submitted articles. In February 2011, the design of the journal was changed so that the graphical Table of Contents shown in the web edition of each article can be incorporated into the abstract. Contributors to the journal have provided some very imaginative and colorful motifs for their articles, so that *JNP* is now more esthetically pleasing to read."

Suffice it to say that there has been spectacular progress under Doug's leader-

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MR. NEIL E. PAULI



Dr. Les Mitscher

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ship. From 1997 to 2013, the number of pages has increased from 1,340 to 2,366, citations from 3,634 to 20,791, and the citation index from 1.432 to 3.947 (2014 ASP *Fall Newsletter*, p. 14).⁵ While the number of articles published yearly has remained about the same, the number of Notes have been reduced significantly. In his characteristic humble fashion, Doug stated, "I attribute these excellent figures in large part to the quality and specialized expertise of our Associate Editors and the high standards they expect before a manuscript is accepted for publication in the journal."⁵



Dr. John Cassady

In 2001, at the initial suggestion by Dr. John Cassady (then President, ASP Foundation Board), the Arthur E. Schwarting Award for the best research article published in the previous year, and the Jack L. Beal Award for the best article published by younger investigators, were initiated.^{2,3} These annual awards have generated heightened interest in the *Journal*, and have improved the career opportunities of 'first author' young investigators. In addition, twelve special issues 'honoring significant, lasting contributions by leading figures in disciplines related to natural products research' have been published. As Doug relates, "This has led to considerable additional interest in the journal, including the submission of many research articles, notes, and reviews from an expanded pool of natural product researchers."⁴ As Dr. David Kingston notes, "Doug increased the number and quality of review articles and introduced well-timed special issues in honor of specific distinguished natural product scientists."

The publication of papers in *J. Nat. Prod.* on marine natural products chemistry had been receiving increasing emphasis during the editorship of Dr. James Robbers in the late 1980s and early 1990s. A recent survey (2013) of marine scientists from 41 countries found that *J. Nat. Prod.* was first choice for the publication of new compounds, in most cases by a considerable margin.⁶ Over the years under Doug's leadership, the international character of the *Journal* has been increasingly emphasized, and this is reflected by the greatly expanded membership of the Editorial Advisory Board since 1994, including experts from some 15 countries representative of Africa, Australasia, East and South Asia, Central, Northern and Southern Europe, and Central, North and South America.⁷ Dr. John Cardellina applauds Doug's initiative – "Doug has established and maintained an international editorial advisory board for the journal that strikes a balance in gender, scientific discipline, and geographical representation."

In his article in the 2013 Winter ASP *Newsletter*⁴ Doug stated, "*JNP* is continually evolving, and its overall quality and increased readership level are the product of the roles of many different

individuals, including our authors, reviewers, and editors, and the past and present members of our editorial advisory board, in addition to the many people who help to produce and promote the journal."

Doug has especially expressed his gratitude to the outstanding group of colleagues who have assisted him in the editorial aspects of producing each issue of the *Journal*.³ These include many dedicated individuals who have served as Associate Editors and Book Review Editors over the years. When Doug assumed the editorship in 1994, Dr. Harry Fong agreed to serve as Associate Editor (Assoc. Ed.) (1994-1998), and was ably assisted by Dr. Dick Powell (Assoc. Ed., 1989-2013) and Dr. David Kingston (Assoc. Ed., 1983-1998, and Book Review Editor, 1979-2002). Dr. John Cardellina replaced Dr. Kingston as Book Review Editor in 2003. Other Associate Editors who have served are Drs. Alice Clark (1999-2005), Francis "Fritz" Schmitz (1999-2002), Bill Gerwick (2002-2008), Daneel Fer-

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Dr. Douglas Kinghorn has been dedicated and tireless in his efforts to improve the status of the *J. Nat. Prod.* for over 20 years. He is supremely knowledgeable in the field of natural products, and it has been a distinct pleasure to have worked closely with him during his tenure as Editor. My wife, Rosemary, and I enjoyed many happy times with Doug at various meetings of the ASP and became close friends. I find it difficult to imagine anyone more capable or qualified for the position of editor of *J. Nat. Prod.*

—Dr. Richard 'Dick' Powell



Dr. Richard Powell and Ms. Rosemary Powell

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I have had the good fortune of knowing Doug for over 30 years, and I still remember very clearly the wonderful impression he made on me when we first met and we were lab mates – he as a postdoc, and I as a graduate student. He was at once both professional and affable, and I was awed by how knowledgeable he was. We reconnected later when he became the senior editor of the *Journal of Natural Products (J. Nat. Prod.)* and invited me to be an editor. Under his leadership, *J. Nat. Prod.* became the leading journal for scientific research in natural products, and it was a privilege and unique opportunity to learn from his leadership style and unwavering commitment to excellence. We have continued to stay in touch professionally and personally in the years since; to me, Doug Kinghorn embodies the image of the distinguished gentleman and scholar. He is a great scholar and friend.

–Dr. Alice Clark



Dr. Alice Clark

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reira (2003-present), Phil Proteau (2008-present), Cedric Pearce (2010 -present), and Steve Swanson (2014-present). On the retirement of Dr. Dick Powell at the end of 2013 after 23 years of service as Associate Editor, Doug announced that he would be named on the journal masthead page as Honorary Editor for 2014 and 2015 in recognition of “his exemplary efforts on behalf of the journal, ably assisted by his wife Rosemary.”⁴ He also paid tribute to Mrs. Powell in an article in the 2014 Spring *ASP Newsletter* (p. 21)⁸ in memoriam of her passing on December 31, 2013.

Doug is always very appreciative of the tremendous efforts others put into making the journal a success, and this includes his interactions with staff of the ACS. He emphasized these collegial interactions in “*Journal of Natural Products: A Decade of ACS and ASP Collaboration*” in the 2006 Winter *ASP Newsletter* (p. 1)³ where, on page 15, he mentions “A key person overlooking the publication quality of the *Journal* is Ms. Diane Black, the Associate Editor in charge of the *Journal of Natural Products* at the Publications Division of the ACS Columbus,

where the pages of the *Journal* are composed. Ms. Black works very closely with the editorial assistants in the four offices of the *Journal*, and Editor Kinghorn gives her and her associates special credit for the smooth publication of the *Journal*.” Dr. Cardellina notes that “Doug has exhibited skillful, personal diplomacy in his interactions with the ACS Publications Division, resulting in a cordial, functional relationship that engenders good will and further success for the *Journal*.” In turn, Ms. Black, in a recent e-mail, noted that “Doug ensures that authors’ manuscripts are well-written before acceptance. He is quick to show appreciation for the work done by the ACS Journals Production office.”

In the accompanying tributes, colleagues who have worked with Doug as Associate and Book Editors over the past 20 plus years attest to his “dedicated and dynamic leadership, his supreme knowledge of the field of natural products, his unwavering commitment to excellence, his legendary word-crafting ability, his constant encouragement to his editorial team and generous shar-

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Doug Kinghorn epitomizes the ultimate Editor; he is quite detailed in his comments to authors, yet extraordinarily fair in his judgments; instructive and mentoring, but at the same time highly demanding; open to suggestions, but also knowing his own mind and having a clear vision for the development of the *J. Nat. Prod.* His word-crafting ability is legendary and developed to nearly constitute an art form! Under his watch, the journal has risen from a specialty publication not well known outside of the field of natural products to one that is highly cited and increasingly impactful. Through all of this, he has been an amazingly productive researcher, supporter of his colleagues both young and old, and mentor to generations of enthusiastic natural products scientists. The natural products community owes a deep and long-lasting debt of gratitude to Doug for his enormous efforts on all of our behalves.

–Dr. Bill Gerwick



Dr. Bill Gerwick

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ing of his extensive editorial experience, his calm and persuasive manner, his skillful, personal diplomacy, and his careful listening to the opinions of others, coupled with wise decisions on what is best for the *Journal*." In our opinion, these are all attributes which have contributed immensely to his outstanding performance as Editor-in-Chief, and are considered extraordinary and vital ways in which he has impacted and changed the *Journal*.

THE EARLY DAYS

Delving into what gave rise to Doug's exceptional knowledge, expertise, motivation and commitment, it is clear that he benefited from fine mentorship in his early university days. One of us (DJN) seems to remember that Doug wanted to attend medical school, but his father was a "chemist" in the UK and so he followed his lead into "pharmacy." We regard this as extremely fortunate for our discipline, since he proceeded to the University of Bradford in West Yorkshire, United Kingdom, where he received his introduction to undergraduate pharmacognosy research under the tutelage of Drs. Keith Harkiss and Peter Linley, and graduated with a BS in Pharmacy degree in 1969. He then advanced north of the border to the University of Strathclyde in Glasgow, Scotland, where he obtained a MS in Forensic Science under the supervision of Dr. Frank Fish and Mr. Peter Nelson in 1970. No doubt, hankering after 'warmer' climes, he headed south to the famous School of Pharmacy at the University of London (now part of the University College London; UCL), London, United Kingdom, where he joined the research group of the late Dr. Fred Evans, gaining his PhD in 1975 for a dissertation on the skin-irritant diterpene esters of *Euphorbia* species.

During this period he worked as an Analytical Chemist at Burroughs Wellcome Company in Kent (1970-1971), and then as a Teaching Fellow at the School of Pharmacy at the University of

London (1971-1975), both in the United Kingdom. It was here that he met Dr. J. David Phillipson, an internationally renowned pharmacognosist, who was a close friend of the late Dr. Norman Farnsworth. Dr. Phillipson recalls, "In 1967-68 I was a postdoc at Ohio State University (OSU) [Columbus, Ohio] with Profs. Jack Beal and Ray Doskotch, and I loved being with them. I was honored when I was invited back to OSU to give a tribute to Jack on the establishment of the Jack Beal Professorship in Pharmacognosy. Little did I anticipate that Doug would be the first recipient of this post. Since then, he has continued to be a prolific researcher, and there can be no doubt that he has a tremendous capacity for hard work. So, the question arises as to where did this all come from? Was it from his background in the north east of England (home of Newcastle Brown Ale) or was it from his time spent in the hallowed environment of The School of Pharmacy, University of London? When I joined their Pharmacognosy Department in 1973, Doug was a PhD student under the supervision of Fred Evans. I soon learned to avoid coming into contact with their agonisingly irritant diterpenes from *Euphorbia* species. However, it was not all hard work and we managed to socialise in the local hosteleries and even had some memorable outings to the Derby horse races." To the co-authors and the many others who have enjoyed quaffing beers with Doug, Dr. Phillipson's comments clearly reveal the source of his enduring love for Newcastle Brown and multiple other brews. Dr. Newman remembers that "in his Liverpool and London University days there were beer taps reputed to deliver "brown ale" but nobody had the guts to try them. IPA and Bitter were the majority votes."

Doug has maintained close ties with the UCL School of Pharmacy, obtaining a DS in 1990, being elected a Fellow of the

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Dr. David Kingston

Doug has done an outstanding job as Editor of *J. Nat. Prod.*, and the journal has increased steadily in both size and quality under his Editorship. The co-publication agreement with the American Chemical Society (ACS), which Doug played a major role in establishing, was obviously an important factor in these increases, but Doug's leadership has been equally crucial to the journal's success. Another facet of Doug's achievement is that he listens to the opinions of others, but he is not afraid to make his own decision. As a member of the Editorial Advisory Board, I have made various suggestions over the years, some of which were adopted and others not, but it was always clear that Doug listened carefully to the arguments and decided what was best for the *Journal*. In summary, Doug has been an outstanding Editor, and the Society owes him a huge debt of gratitude for making the *Journal* the leading journal in the natural products arena.

—Dr. David Kingston

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When Doug was appointed Editor of the *J. Nat. Prod.* more than 20 years ago, he recruited me (with promises of fame and glory) to serve as one of his Associate Editors, and I accepted his offer, partly for the challenge, and partly because Dr. Jack Beal, my PhD professor, was a former Editor of the *Journal*. We shared an office and an editorial assistant, and it was a heady and fun post, especially for one who was not exposed to the English language until age 14 (me). At that time, the editors' responsibilities included not only evaluation of the scientific merit, but also grammatical edits of the accepted manuscripts, and one was literally consumed with the task....eat and sleep with it; Doug was a most dedicated editor, always having a manuscript in hand wherever he went, including faculty meetings. After about two years, I tendered my resignation to regain a semblance of a personal life, but Doug pulled out the "fine print," and I fulfilled my 5-year term. That Doug has been by far the longest serving Editor of *J. Nat. Prod.* is a testimony to his enthusiasm, dedication, and above all, an understanding and supportive wife. For this longevity, I salute both Doug and his wife, Helen. Doug, I congratulate and salute you.



Dr. Harry Fong

—Dr. Harry Fong

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School in 2006, and delivering the Second Professor Frank Fish Memorial Award Lecture in 2013, a fitting tribute to his mentor from his MS days at Strathclyde, and who was Dean of the UCL School from 1978 to 1988. Dr. Phillipson, now Emeritus Professor, relates, "Doug has remained in contact throughout the 42 years since our first meeting and is a true friend. Please do not ask too many questions about the Derby outings, or about him and Helen putting up with us on the slender excuse of snow stopping flights from Heathrow airport to the USA. He may not wish to be faced with these events. For me, they are very happy memories." Regarding Doug's 21 years as editor of the *J. Nat. Prod.*, Dr. Phillipson adds, "I have had experiences as an author of submitting papers to the *Journal* when it was edited by Art Schwarting and then Jack Beal, and I can appreciate the tremendous effort and improvements that Doug has made during his 21 years."

From the heady environment of London, Doug proceeded to the more sedate environment of Oxford, Mississippi, in 1976, where he conducted a year's postdoctoral research with Dr. Norman Doorenbos at 'Ole Miss' (University of Mississippi). As so often happens to young PhDs arriving from across the Pond (and this fact is attested to by coauthors GMC and DJN), Doug also had the great good fortune to meet his future wife, Helen, who, as Dr. Harry Fong remarked, has been his 'understanding and supportive' wife for some 40 years. This sedate Mississippi lifestyle was, however, to be short lived, and in 1977 Doug and Helen proceeded to the boisterous comradery of the Farnsworth group at the Department of Pharmacognosy and Pharmacology at the University of Illinois at Chicago (UIC), Chicago, Illinois.

As Dr. Fong recalls, "Albeit it was about 40 years ago, it seems only yesterday that I had the pleasure of welcoming to the "Best Department of Pharmacognosy and Pharmacology" at the Col-

lege of Pharmacy, University of Illinois at Chicago (UIC), a young Londoner with his new bride in tow. Doug Kinghorn had come, with a short detour at Ole Miss, to join the Norman R. Farnsworth group of young and bright pharmacognosists in pursuit of natural product drugs and other pharmacognostic discovery and research endeavors. I met a bright, talented, earnest, and enthusiastic young man brimming with potential." While we agree with Dr. Fong that Doug had arrived as a 'Londoner' from the UCL School of Pharmacy, being familiar with the cultural niceties of the United Kingdom, we maintain that Doug is "a Geordie through and through, though with a leavening of Culture from London!!"

TEACHER, MENTOR AND RESEARCHER PAR EXCELLENCE

At UIC Doug rose rapidly through the ranks from his appointment as Assistant Professor in 1977, through Associate Professorship in 1981, to full Professor in 1986. His periods of service, first at UIC from 1977 to 2004, and now as the first Jack L. Beal Chair in Natural Products Chemistry and Pharmacognosy at the College of Pharmacy, OSU, have been times of incredible productivity and dedicated service to academia, and to the global natural products and health communities. As noted by Dr. Fong, "while at UIC he became a world class scientist and an international leader in pharmacognosy." Furthermore, Dr. John Cassady, then Dean and Professor of Pharmacy at OSU noted, "It is critical to find the right person to fill newly created positions of great importance. In this regard, Doug Kinghorn was the right person to be the first Jack Beal Professor at the College of Pharmacy at Ohio State University and to be the first Editor of the *Journal of Natural Products* when it transitioned to the American Chemical Society. Like Jack Beal, Doug has achieved excellence in all areas critical to

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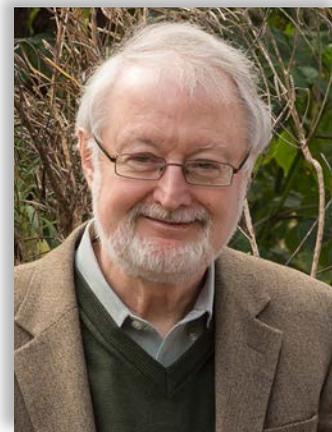
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the academy, namely, teaching, research and service. In addition, like Jack, he does this with great humility and passion.”

Doug’s multiple, outstanding achievements and accolades have been outlined in the Timeline prepared by Ms. Devhra Bennett Jones for “From the Archives” in this *Newsletter*. The Editor Profile in the *Journal of Natural Products* provides some essential statistics.⁷ “He has authored or co-authored approximately 425 research articles, book chapters, and reviews, edited or co-edited five books, presented research seminars and lectures at international and national scientific meetings in 30 different countries, and he has been Major and/or Thesis Advisor for about 40 graduate students and has also directly supervised 60 postdoctorals and visiting scholars.” Among his publications are several excellent reviews promoting drug discovery from plants and other natural sources.⁹⁻¹⁴ In 2001, Doug was designated “Highly Cited Researcher - Original Member” (Agricultural Sciences) by the Institute of Scientific Information (ISI), Philadelphia.

Doug has always appreciated the importance of international collaboration which is reflected in the membership composition of the *Journal* Editorial Advisory Board. He has served as a Visiting Professor at the Swiss Federal Institute of Technology Zurich (ETH Zurich, 1990), the University of Salerno (Italy, 1996), and the University of São Paulo (Brazil, 1997), as a Visiting External Examiner at the Science University of Malaysia (Penang, 1996-1997) and the Chinese University of Hong Kong (2000-2001), and as the “Opponent” for two PhD examinations at Uppsala University in Sweden (1997 and 2007). He also served as Chair of the International Advisory Committee, IUPAC, for the Israel International Symposium on Sweeteners, (Jerusalem, 1996), and as a Member of the Expert Panel, International Agency for Research on Cancer (IARC) Monographs for the Evaluation of Carcinogenic Risks to Humans, World Health Organization (Lyon, France, 2002). In addition to the accolades received from the UCL School of Pharmacy and the University of Bradford mentioned earlier, Doug has been elected as a

Fellow of the Linnean Society of London (1985) and the Royal Pharmaceutical Society of Great Britain (1991), and has been elected to Honorary Membership of the Sociedad Argentina de Investigaciones en Química Orgánica (Buenos Aires, 1999). And it was also most fitting that the University of Bradford in the United Kingdom recognized their famous alumnus with the award of an Honorary Doctor of Science degree in 2011.

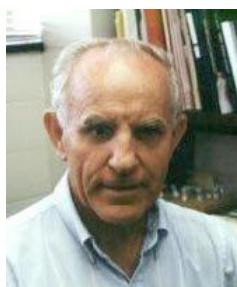


DR. GUIDO F. PAULI

In the research arena, he is internationally recognized as an outstanding independent research investigator and as an inspirational leader of collaborative research projects. Dr. Fong notes, “Doug burst onto the international scene from UIC via his independent research efforts in the search for natural non-caloric sweetening agents from plants that are particularly relevant for diabetic patients.” In 1985, Doug, Dr. John Pezzuto and then graduate student, Dr. Cesar M. Compadre (now professor at the University of Arkansas Medical Sciences, Little Rock, Arkansas), reported the isolation of the sesquiterpene, hernandulcin, more than 1,000 times sweeter than sucrose, from *Lippia dulcis*, a plant reported in ancient Mexican botanical literature (1570-1576), and known to the Aztec people by the Nahuatl name, Tzonpelic xihuitl (translated as ‘sweet herb’).¹⁵ Doug has continued to be a leader in this field of research,^{16,17} including in studies of the commercially available natural sweeteners, stevioside and rebaudioside A.¹⁸

He has also made outstanding contributions to the discovery of novel, potential agents for the prevention and treatment of cancer. In collaboration with Dr. Pezzuto and UIC col-

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Dr. Francis Schmitz

It was a surprise and an honor to be invited in 1999 by Doug to serve as an Associate Editor for *Journal of Natural Products* dealing entirely with papers on marine natural products. The task seemed a bit daunting since I had no idea how much work would be involved. But Doug, in his calm and persuasive manner, assured me that all would go well. The *Journal* grew under Doug’s leadership, and it was a pleasure to interact with him. Things went so smoothly that my personal interactions with him were limited to our attendance at ASP meetings. He was very understanding when I told him I wanted to resign after three years due to a personal problem. As brief as it was, my tenure as an Associate Editor with *J. Nat. Prod.* was interesting and enjoyable. I wish Doug the best for another 21 years as Editor!

—Dr. Francis ‘Fritz’ Schmitz

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leagues, Doug served as a project leader in a program supported by the National Institutes of Health National Cancer Institute (NCI) through a Program Project grant (PO1 CA48112). Nearly 50 new compounds and over 100 known compounds exhibiting preliminary chemopreventive activity were isolated from mainly edible plants, and several were considered promising leads based on testing in secondary assays.¹⁹ Regarding his collaboration with Doug, John related, "I first met Doug in 1980 when I joined the faculty of UIC as an assistant professor. In retrospect, they were glorious years, as we worked together, eventually building one of the most powerful natural product programs in the world. I was always impressed by Doug's intellect, keen sense of humor, scientific acumen, and compassion for students. His sustained record of high caliber science readily shines through in his dedicated effort of constantly improving the quality and impact of the *Journal of Natural Products*. I know many have 'seen further by standing on the shoulders of giants' and Doug's broad shoulders have provided such a platform for many years."

BERNADETTE CARDELLINA



Dr. John Cardellina

From September, 1990 to April, 2005, he was Principal Investigator (PI) of an NCI National Cooperative Drug Discovery and Development Group (NCDDG) program entitled, "Novel Strategies for Plant-Derived Anticancer Agents."²⁰ This program included UIC-based projects headed by Dr. Farnsworth (Plant Selection, Collection, and Project Data Management), and Doug (Extraction, Dereplication, Isolation, Structure Elucidation, Biological Evaluation), as well as programs headed by Dr. Monroe Wall until 2002, then Dr. Mansukh Wani of Research Triangle Institute (RTI; Isolation, Structure Elucidation, Synthetic Modification, and Biological Evaluation), and Dr. Robert Kramer of Bristol-Myers Squibb Pharmaceutical Research Institute (Biological Evaluation and Synthesis). As one of his close colleagues in this endeavor, Dr. Fong observes, "I would praise him for his ability to be equally adaptive and productive in conducting "independent" and "collaborative" research projects. As a source material acquisition specialist, I had the honor and pleasure of working with Doug on some of those efforts." The goals, achievements and progress of this program have been reviewed,²¹ and were recog-

In my long view, not just as Book Review Editor, but as past ASP President, executive committee member and chair of the foundation, Doug's leadership of the *J. Nat. Prod.* has been superlative in every respect. Not only has he set high standards for the journal's content, he has also identified and recruited like-minded, dedicated Associate Editors (well, except for that Book Review Editor) to help him continue to raise the bar for the journal. While accomplishing all of this, he has exhibited skillful, personal diplomacy in his interactions with the American Chemical Society (ACS) publications division, resulting in a cordial, functional relationship that engenders good will and further success for the journal. Somehow he has managed to do all this and still continue his own illustrious, productive scientific work. Last, but not least, in all of this, as I have witnessed time and again in our interactions, his dedication and commitment to the ASP have been his underlying concern for these two decades of tireless service. Even these laudatory comments are insufficient to convey the level of respect and admiration that I have for Doug Kinghorn as a scientist, editor, ASP member and colleague.

—Dr. John Cardellina

nized with the Platinum Award of the Division of Agricultural and Food Chemistry of the American Chemical Society in 1996.

With his transfer from UIC to Ohio State University (OSU) in 2004, Doug continued his leadership of collaborative research projects with the award of an NCI Program Project (PO1 CA125066) grant in 2007.²² Doug once more served as PI, and he expanded his drug discovery horizons to include agents from diverse natural origins in a program entitled "Discovery of Anticancer Agents of Diverse Natural Origin." As with the NCDDG program which he coordinated at UIC, this program included multi-institutional projects involving teams from OSU, UIC and RTI collaborating with Mycosynthetix, Inc, and with Bristol-Myers Squibb (B-MS) being the industrial partner. In

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One couldn't ask for a better Editor-In-Chief. Doug gives helpful advice when asked and is always there to support my decisions. He continually amazes me by the high level of behind-the-scenes service he provides for the *Journal*.

—Dr. Philip Proteau

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addition to plants, cyanobacteria and filamentous fungi were accessed, and bioassay-directed fractionation, with dereplication of known compounds, was carried out at OSU (plants), UIC (plants and cyanobacteria) and RTI (fungi), with lead development of active natural products via synthetic and medicinal chemistry being performed at OSU, and advanced stages of biological and toxicological testing, as well as the procurement of larger quantities of lead compounds, being sponsored by B-MS. In 2014, this grant was renewed, with Doug again serving as PI.²³ The overall strategy is similar to that used in the original grant, with the exception that RTI is replaced by the University of North Carolina at Greensboro (UNCG) collaborating with Mycosynthetix, Inc on fungal projects, and additional screening is provided by Columbia University, New York City, and a new pharmaceutical company partner, Eisai Inc., which replaced B-MS. The early achievements of this Program Project were reported in a 2009 review.²⁴

A highly significant discovery has been the rocaglate derivative, silvestrol, isolated from the fruits and twigs of *Aglaia foveolata*, collected in Kalimantan, Indonesia.²⁵ Silvestrol was originally isolated as part of the UIC NCDDG program discussed earlier, but it continues to be extensively studied as part of the later NCI-supported Project Programs coordinated by Doug, and mentioned above. It has shown promising activity against various leukemias and lymphomas,^{26,27} and is being developed in collaboration with the Sarawak Biodiversity Centre²⁸ through the NCI NeXT program.²⁹ The chemistry and biology of silvestrol and structurally related compounds from *Aglaia* species have recently been reviewed.³⁰

Doug's research interests have also encompassed the isolation and structural identification of the bioactive constituents from botanical dietary supplements, and the assessment of their biological activities.³¹ In this respect, detailed studies have

been carried out on *Morinda citrifolia* (noni)³² and *Garcinia mangostana* (mangosteen).^{33,34} He is a member of The Ohio State Food Innovation Center³⁵ where he and his group apply their knowledge and skills to the identification of plant secondary metabolites in foods and food products. An interesting application has been studies suggesting that individual and combinations of phytochemicals from the avocado fruit may play a dietary role in cancer prevention.³⁶ The American Botanical Council recognized Doug's outstanding contributions in this area with the award of the 2011 Norman R. Farnsworth Excellence in Botanical Research Award.

Throughout his career, Doug has had a tremendous impact on those with whom he has associated and collaborated. As Dr. Fong relates, "Even as Doug excelled in research and public service, he carried on a full teaching load at the UIC College of Pharmacy and served as mentor to dozens and dozens of PhD students and post-doctoral fellows while at UIC. In short, Dr. A. Douglas Kinghorn is a complete professional. A professor who embraced and contributed fully to the three tenets of academia: teaching, research and service." Doug's exceptional teaching and mentoring talents have been recognized through his selection as the B. Kenneth West University Scholar (Senior University Scholar) by the University of Illinois Foundation in 1993, and as recipient of the UIC 2002-2003 Award for Excellence in Teaching.

To emphasize Dr. Fong's observations, Dr. Steve Swanson notes, "I first met Doug Kinghorn over thirty years ago when I became a laboratory technician at the UIC College of Pharmacy. From the very start of my professional career, Doug was an important guiding force providing encouragement, sound advice and introductions to the leaders of my new field. I am now Dean of the University of Wisconsin School of Pharmacy [Madison,

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After reviewing many manuscripts and regularly contributing papers to *J. Nat. Prod.*, especially after relocating from South Africa to the United States in 1999, I was greatly surprised to be asked by Editor-in-Chief Kinghorn to join the *J. Nat. Prod.* editorial team on the recommendation of then Associate Editor, Dr. Alice Clark. Reminiscing about the past 11 years, I can only say what an honor and pleasure it has been working closely with Doug and the rest of the editorial team to advance both our beautiful science and the influence and status of our beloved *Journal* in the ultra-competitive environment of scientific publication. Doug's devotion to the *Journal* is remarkable, and under his dynamic leadership it has grown significantly to become a flagship publication in the natural products field. Doug's willingness to accommodate suggestions from his co-editors and expert editorial advisory board members in no small manner contributes to the success of the *Journal* and, hence, to the growing number and quality of submissions. Doug, I thank you for your tireless efforts on behalf of the *Journal* over the past 20 years, and for the respect that you have shown to all the Associate Editors. We wish you all the very best for the next phase as Editor-in-Chief, and we pledge our continuing support to make the *Journal* the very best it can be.

—Dr. Daneel Ferreira

Editor A. Douglas Kinghorn: 21 Years of Extraordinary Service to Natural Products

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Dr. Cedric Pearce and Dr. Nick Oberlies

Ever since my introduction to Doug Kinghorn at an ASP meeting in the 1980s while Assistant Professor at the University of Connecticut, Storrs, Connecticut, Doug has been a great colleague, and he continues to be so as we spend time together working on the *Journal* and on our National Cancer Institute-funded project. His support for those working with him is outstanding, especially for those at earlier stages in their careers, and his enthusiasm for rigorous science endures, both in formal and informal settings. As *J. Nat. Prod.* Editor-in-Chief, he provides constant encouragement to his editorial team, generously sharing his extensive editorial experience; early on, he helped me a lot in getting up to speed with my journal editing, never complaining when I trespassed on his valuable time with another naïve question. Being Associate Editor in Doug's team has been a great experience for me, and I suspect that being a journal editor without his involvement would be a lot less enjoyable! I look forward to continuing to work with him in the future.

—Dr. Cedric Pearce

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Wisconsin], and I still consider Doug one of my closest advisors. In fact, Doug has been the single most important mentor of my career, and I am truly grateful to have known him. Doug has also helped many others like me from around the world to develop as scientists. I think that Doug is one of the most impactful mentors in our field.”

Dr. Nick Oberlies adds, “I have been working under Doug Kinghorn's leadership since I first joined Research Triangle Institute in 1998 as a postdoctoral chemist working in the NCDDG program, and now in a Program Project P01 grant. Thus, I have been associated with him as a fresh postdoc, as a senior scientist, and more recently, as leader of one of three Programs in his most recent P01. I have seen the victories and the defeats. I have seen new collaborators join our team, older collaborators leave our team, and sadly, a few stalwarts pass away. Through all of that, Doug has always held the ‘team’ together. He embodies the mantra of Together Everyone Achieves More, especially on a team where we all, essentially, in collaboration or competition, strive to discover the next Taxol. How has he done this so well and for so long? Doug is always able to see the value in reaching out to new collaborations, to invigorating our research strategy, to looking toward the future. That is why this project is still alive, and dare I say, thriving today. This point about the

future may be the most subtle, but most important, of his leadership gifts. He is always thinking about the next generation of leadership, not just for the ‘project’, but for the larger field of natural products. Doug has always offered mentoring advice. Not surprisingly, this often comes with respect to writing and publishing papers. However, it also comes in areas that are not often covered in graduate school, like dealing with scientists, encouraging us to have face to face meetings, encouraging us to participate in grant reviews, encouraging us to give seminars to a variety of venues. In short, Doug has led our project, and in turn, influenced my career, in ways that I cannot even begin to enumerate.”

PUBLIC SERVICE

Doug's commitment to excellence as a teacher, mentor and research investigator extends to the public sector where he has served as an expert on advisory boards and review committees promoting progress in science and consumer health. Thus, he was a member of the “AIDS and Related Diseases D” National Institutes of Health (NIH) Study Section (1993-1997), and has been a frequent ad hoc reviewer for NIH for more than 20 years. He was an ad hoc member of the National Advisory Council for

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Editor A. Douglas Kinghorn: 21 Years of Extraordinary Service to Natural Products



My goal as 2014-15 ASP president is to continue the traditions of A. Douglas Kinghorn, who served as ASP president with distinction during 1990-1991. I am awestruck by his continuous service to the *Journal of Natural Products*, which, as we all know, began in 1994 with his appointment as Editor-in-Chief. It was exactly a decade later when he moved from University of Illinois Chicago, Chicago, Illinois, to The Ohio State University in Columbus, Ohio. I regard his imprint on science and mastery of teamwork with students and colleagues to be even more impressive than that of his Buckeyes football team, who this year won the first NCAA College Football National Championship. It is amazing to me that Doug can be engaged in so many tasks at the frontiers of natural products chemistry. And he does this while being in constant motion on his home front operating as Professor and Jack L. Beal Chair of Medicinal and Natural Products Chemistry in the College of Pharmacy and simultaneously moving the *J. Nat. Prod.* at full speed ahead! I will most certainly raise a glass of wine in his honor at the 2015 ASP meeting in Copper Mountain, Colorado.

—Dr. Phil Crews



Dr. Phil Crews

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Complementary and Alternative Medicine, NIH, in June 2005, and Chair of the “Dietary Supplements – Botanicals” Expert Committee of the United States Pharmacopeia (2005-2010). He also served as President, Society for Economic Botany (1991-1992). Currently he is a member of the NCI PDQ® Cancer Complementary and Alternative Medicine Editorial Board, and also serves as Series Editor-in-Chief of the book series “Progress in the Chemistry of Organic Natural Products” (published by Springer-Verlag, Vienna, Austria) (2008-present). This exceptional dedication to service, whether it be in the academic, private or public sectors, is a hallmark of Doug’s professional career, and is clearly evident in his outstanding performance as Editor-in-Chief of the *Journal*.

ASP ACCOLADES

The numerous honors that have been bestowed on Doug by institutions and organizations worldwide have been mentioned in the sections above, as well as being listed in the Timeline prepared by Ms. Devhra BennettJones presented in “From the Archives” in this *Newsletter*. The ASP has recognized Doug’s outstanding contributions to the Society, and to the science of natural products, with the award of its most prestigious hon-

ors. In 2007, he was elected as a Fellow of the Society, and in 2008 elected as an Honorary Member, being inducted at the 50th Anniversary Annual Meeting held in Honolulu, Hawaii in 2009. In 2010, he received the Norman R. Farnsworth Research Achievement Award, the most prestigious award made by the American Society of Pharmacognosy, in recognition of outstanding contributions to research on natural products.

On a personal note, both of us have had the pleasure and privilege of working with Doug, both in our professional roles as staff of the NCI Natural Products Branch for close to three decades, and as Past Presidents of the ASP. In addition, we have collaborated as good colleagues and friends pursuing the discovery and development of novel bioactive agents from natural sources. To us, Doug is the epitome of excellence, integrity, and selfless commitment in all spheres of scientific endeavor. He has been, and continues to be, a source of inspiration, and we can think of no better role model for aspiring young scientists. Like our colleagues who have also expressed their respect and admiration in their tributes above, we salute you, Doug, and may you continue to push back the frontiers of natural products research for many years to come! ■

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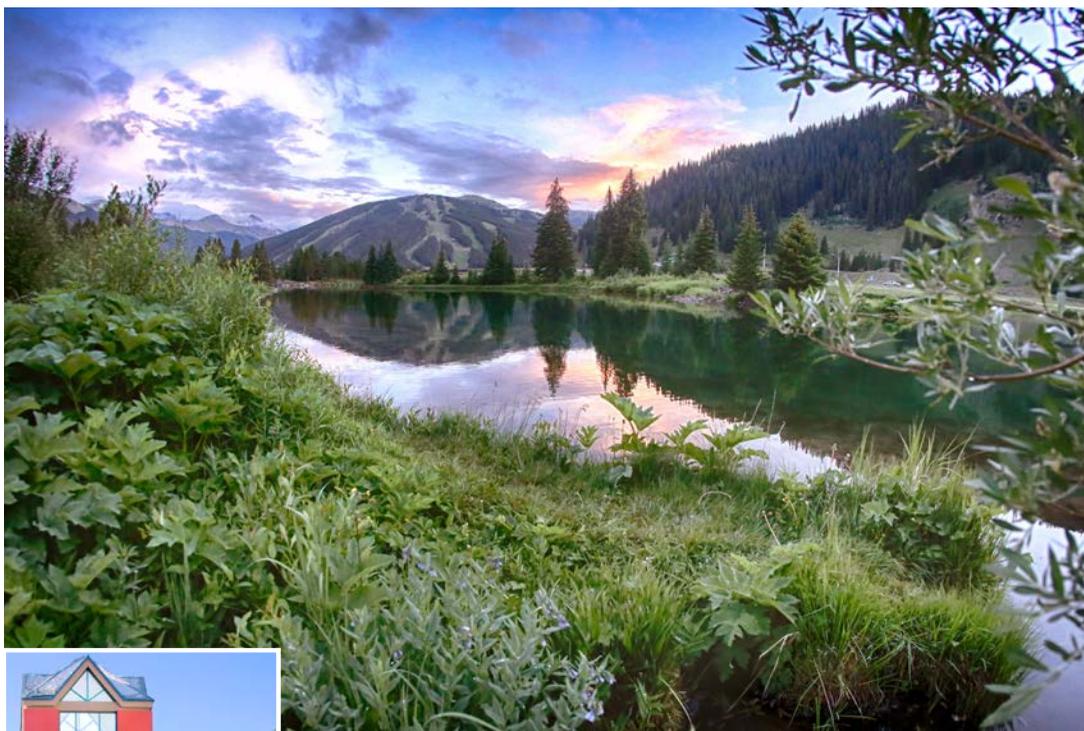
ASP 56th Annual Meeting: Natural Products Rising to the Top

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 opened on January 12, 2015. Early registration ends on March 30, 2015, and the abstract deadline is April 30, 2015.

Symposium speakers include Drs. Jonathan Baell, Carole Bewley, Paul Jensen, Will McClatchey, Daniel Romo, Derek Tan, John Tallarico, Peter Senter, Ben Shen, and Amy Wright. The diverse symposia represent myriad natural products areas, from Recent Advances in Chemical Ecology to Natural Products and HIV.

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 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.



(above): Copper Mountain, Colorado
(left): Copper Mountain Resort and Conference Center

The excursion scheduled for Monday, July 27, will be an evening spent at the Soda Ridge Stables in Keystone, Colorado, (20 minutes by bus from the meeting venue) enjoying a barbecue dinner, music, a bonfire, and 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. Following the hike, younger members will have the option of attending workshops focused on work-life balance and success in academia, industry, and entrepreneurship.

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.

We look forward to seeing you in colorful Colorado! ■

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ASP 56th Annual Meeting: Natural Products Rising to the Top

IMPORTANT DATES TO CONSIDER

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



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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
- Applications of Mass Spectrometry to Natural Products Drug Studies

WORKSHOP TOPICS AT THE YOUNGER MEMBER'S EVENT:

- “The Path to Becoming an Academic Professor,” led by Drs. Brian T. Murphy, University of Illinois at Chicago, Chicago, Illinois, and Sandra Loesgen, Oregon State, Corvallis, Oregon
- “Getting the Most Out of What You Have: Funding and Running a Lab in Academia,” led by Dr. Kevin Tidgewell, Duquesne University, Pittsburg, Pennsylvania
- “Triumphs and Challenges of Research at a Primarily Undergraduate Institution,” led by Dr. Amy Lane, University of North Florida, Jacksonville, Florida
- “Work-life Balance in Academia,” led by Dr. Marcy Balunas, University of Connecticut, Storrs, Connecticut
- “Managing a Full-time Career, Home, and Family,” led by Dr. Barbara Timmermann, University of Kansas, Lawrence, Kansas
- “From an Idea to a Start-up and Beyond,” led by Dr. Eduardo Esquenazi, Sirenas Marine Discovery, San Diego, California
- “Leading a Fulfilling Career and Balanced Life in Industry,” led by Dr. Jeremy Beau, Bayer CropScience, Research Triangle Park, North Carolina

Recent Dean Appointments Have Roots in Pharmacognosy

By Dr. Marcy J. Balunas

Deanships at two pharmacy schools have been filled recently by ASP members Drs. John Pezzuto and Steve Swanson at Long Island University (LIU) and University of Wisconsin (UW), respectively. Their appointments follow a long history of ASP members serving in the upper level administrations at universities throughout the United States.

Dean Swanson started at the School of Pharmacy, University of Wisconsin in Madison, Wisconsin, in 2014. He has been working in natural products drug discovery since completing his PhD at the University of Illinois at Chicago in 1983, and was in fact the first PhD student of Dean Pezzuto.

Dean Swanson has been an active member of the ASP and considers the Annual Meetings as family reunions where he loves to “see old friends, meet the new members and learn about their work and where our discipline is heading.” His research has been driven by natural products; “nature provides us with an amazing array of substances that have dramatic biological activities.”

As he explained via email, UW “has a long and storied history in natural products research. Drs. Morris Kupchan, Gordon Svoboda and Mansukh Wani, to name a few, have all worked in our laboratories and made monumental contributions to pharmacognosy.” With newer pharmacognosists in the UW ranks, including ASP member Dr. Tim Bugni, Dean Swanson hopes to continue to build on that rich tradition.

Dean Pezzuto has extensive academic administrative experience, having served as Dean of the College of Pharmacy, Nurs-



JOHN HENRY A. PEZZUTO



UW-MADISON COMMUNICATIONS

Dean John Pezzuto (left)
Dean Steve Swanson (right)

ing and Health Sciences, at Purdue University, West Lafayette, Indiana, and as Founding Dean of the College of Pharmacy at the University of Hawaii at Hilo, Hilo, Hawaii. Later this year, he will bring his pharmacognosy background to serve as Dean of Long Island University College of Pharmacy and Health Sciences.

Dean Pezzuto’s mantra is that “nature is a glorious cornucopia of lead molecules for drug design and development. There is no other approach capable of yielding the biologically active

structural prototypes provided by nature.” Through his Deanships, he has remained active in research, continuing to publish, performing peer review, and attending scientific meetings. In discussing pharmacognosy at LIU, Dean Pezzuto indicated that whenever he has the opportunity to “work with, consult with, or mentor a faculty member, natural products come into the discussion.”

Given his extensive experience as an administrator, Dean Pezzuto waned philosophical on the topic of leadership, indicating that “the position of Dean is an honor. Along with that honor comes the responsibility of serving the faculty as a whole and representing the College as a whole.”

With these two new Dean positions being occupied by longstanding members of the ASP, there is a unique opportunity for an influx of natural products research and education at two academic institutions. ASP president, Dr. Phil Crews, offers his congratulations to Deans Pezzuto and Swanson and urges everyone to contact these new Deans to “ensure that we all benefit from their current and past lessons learned on natural-products based discovery and education.” ■

Natural Products Patenting: An Update

By Dr. Edward Kennelly

On December 16, the United States Patent and Trademark Office (USPTO) published its “2014 Interim Guidance on Patent Subject Matter Eligibility.” This supplements its preliminary guidance, “2014 Procedure for Subject Matter Eligibility Analysis of Claims Reciting or Involving Laws of Nature/Natural Principles, Natural Phenomena and/or Natural Products.” As part of the formal comment period last summer, the ASP Executive Committee voiced concerns to the USPTO that the original document would too greatly limit the ability to patent natural products.

The revised USPTO document (“<https://www.federalregister.gov/articles/2014/12/16/2014-29414/2014-interim-guidance-on-patent-subject-matter-eligibility>”) moves away from some of the difficult criteria in the original guidance regarding patenting of natural

products. Thus, some of the concerns voiced in the ASP Executive Committee letter appear to have been addressed. (As reported in the Summer 2014 ASP Newsletter, the Officers and Executive Committee of the American Society of Pharmacognosy submitted a four-page comment to the Commissioner for Patents, http://www.pharmacognosy.us/wordpress/wp-content/uploads/ASP_Myriad-letter-final.pdf.) There are also examples of how the new guidance might be put into action regarding natural product patents.

Members who wish to comment on the interim guidance can do so by March 16, 2015, by clicking on the “Submit a Formal Comment” at the website above, or via e-mail to 2014_interim_guidance@uspto.gov. A compilation of all of the comments made to the original guidance can be found at <http://www.uspto.gov/patent/laws-and-regulations/comments-public/public-comments-guidance-determining-subject-matter>. ■

Cubist Pharmaceuticals Acquired by Merck

By Dr. Cedric Pearce

As of January 22, 2015, Cubist Pharmaceuticals became a wholly-owned subsidiary of Merck & Co., Inc.; this move was expected. In December, Merck had offered to acquire Cubist for \$102 per share, a mark-up of 35% over the recent average trading share price. An overall offer of \$9.5 billion, including the debt taken over by Merck, was made.

Both Merck & Co. and Cubist Pharmaceuticals are well known to members of the ASP. They have been active in the area of natural products research and development for a number of years. There are a number of scientists from the Merck & Co. natural products program who are active members of the ASP, including Dr. Sheo Singh (also a member of the *Journal of Natural Products* editorial advisory board). Cubist's success with natural products came with their first marketed product, the antibiotic daptomycin (Cubicin® - annual sales of at least \$1 billion), a microbial product initially discovered by Eli Lilly and Company scientists and then acquired by Cubist and developed by a group led by Dr. Frank Tally. Cubicin currently has worldwide sales in excess of \$1 billion annually, and increased global sales through the Merck established network of outlets is expected.

beta lactamase inhibitor tazobactam. Zerbaxa™ joins Cubicin® as Cubist's approved antibacterial agents. Additional compounds include Sivextro®, currently undergoing development for bacterial pneumonia, and Surotomycin, a new antibiotic for *Clostridium difficile*-associated diarrhea.

ASP member Dr. Don Borders, founder and president of BioSource Pharm, Inc., and colleague of Dr. Tally, recently discussed the difficulty of finding new antibiotics.

Dr. Border's view is that the Merck acquisition of Cubist may be, at least in part, an indication of the latter's strong antibacterial pipeline. It used to be claimed that smaller companies, perhaps due to lower overhead, were frequently as much as an order of magnitude more innovative than large firms; this was measured by the number of patents per full time effort.

In a time when there is an urgent need for new antibacterial agents, largely because of the emergence of drug resistance, it is a fact that small and medium-sized enterprises are leading the way, such as Trius Therapeutics, Cubist Pharmaceuticals, BioSource Pharm, Inc., Cempra, Inc., and NovoBiotic Pharmaceuticals, among others. The fact that merger and acquisition activity will possibly finally focus

In a time when there is an urgent need for new antibacterial agents, largely because of the emergence of drug resistance, it is a fact that small and medium-sized enterprises are leading the way, such as Trius Therapeutics, Cubist Pharmaceuticals, BioSource Pharm, Inc., Cempra, Inc., and NovoBiotic Pharmaceuticals, among others.

During 2013, Cubist had acquired Trius Pharmaceuticals, an early stage antibiotics company that developed the Gram-positive antibacterial agent, tedizolid phosphate (Sivextro®), an oxazolidinone class of wholly synthetic compounds that represent the second Food and Drug Administration approved (for complicated skin and skin structure infections [cSSSIs], 2014) drug of the new class of antibacterial agents after the launch of linezolid, first in class in 2000.

Cubist's website lists experimental drugs undergoing clinical trials, with two new antibiotics, a beta-lactamase inhibitor, and the recently approved Zerbaxa™, the latter a combination of the cephalosporin ceftolozane and the

their products into the larger, more established firms with an in-place sales force is to be expected. In many cases this gives the early investors an opportunity to harvest some profit, the acquirer obtains new products, and society benefits by a more robust distribution system.

In the case of Cubist Pharmaceuticals, a 22-year-old firm that started life with an essentially abandoned compound from an established pharmaceutical company, they are now a wholly-owned subsidiary of a major pharmaceutical company, Merck & Co, being acquired at a value of almost \$10 billion.

The author wishes to acknowledge Drs. Borders and Singh for help in researching this article. ■

Fun With Pharmacognosy: NMR is Awesome!!!

By Dr. Nicholas Oberlies

Many of you have likely sat in front of an NMR console enough to appreciate the beauty and brilliance of a prototypic Lego NMR set by simonw333. Unfortunately, it is not something you can buy, or at least not yet. Using your Facebook credentials, you can login, vote, and even comment on the design. You will be asked how many set you would purchase and for what price. I know I would purchase several!

As a super geek, I can envision many twists on this. Perhaps the starter set can be scaled for a 300 MHz magnet, and you could expand your NMR facility with 500, 700, or 900 MHz magnets in the future. Also, the 700 MHz version might cost \$20, but if you wanted one with a cryoprobe, it would be \$2,000. The box could say something like 'cryogens not included.'

The website mentions the usefulness of the set for kids, "The

set would be a great addition to any Lego science laboratory, extending the lab capabilities for budding scientists to pursue their research. The set would introduce a high tech piece of modern scientific equipment and could lead to more opportunities for learning about science and research. A new scientist (NMR Spectroscopist) minifig could even be included!"



Lego NMR
LEGO IDEAS

I hope you have fun with this. Please visit the website: <https://ideas.lego.com/projects/91495>, vote for it, and maybe your organic chemistry or structure elucidation students could as well. My personal hope is that a picture like this makes the cover of the next edition of "Organic Structure Analysis" by ASP Members Philip Crews, Jaime Rodriguez, and Marcel Jaspars.

As Tegan and Sara remind us, "Everything is cool when you're part of a team!" ■

ASP Election Begins

By Dr. John Porter

The ASP election process for 2015 has begun, and ballots will be received through an electronic balloting system that can be found at www.pharmacognosy.us/ballotsystem. Those running this year are Drs. Cindy Angerhofer and Amy Wright for Vice-President and Drs. Joe Betz and Robert Cichewicz for Executive Committee. Several changes to the Society's constitution are also on the ballot.

The election will run from March 1 - March 31, 2015. E-mail notices for the election have been sent to all members, and the ballot will be sent to the members' addresses used for renewal of membership. If a request for ballot has not been received, check spam folders or ask your institution to whitelist www.pharmacognosy.us. Any problems or issues with the electronic ballot should be reported to Dr. John Porter at j.porter@usciences.edu.

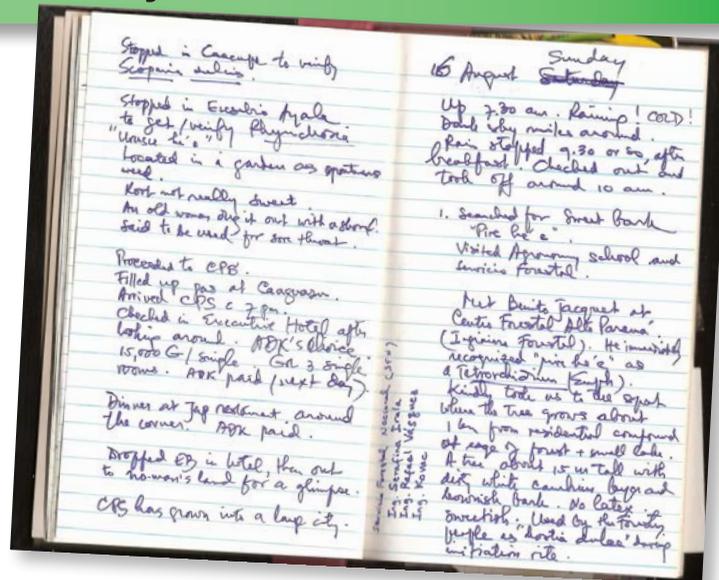
Although it is 2015, the election reflects last year's date; that is when nominees are chosen and when most submit the biographical sketch. Those elected will take office at the Annual Meeting in 2015. ■

Field Notes in Pharmacognosy: A Sweet Journey with Kinghorn and Soejarto

By Dr. Djaja Doel Soejarto

In 1980, a multidisciplinary team of researchers based at the University of Illinois Medical Center (UIMC), Chicago, Illinois, headed by Dr. A. Douglas Kinghorn (Principal Investigator), and of which I was the botanical component, submitted a research proposal to the National Institute on Drug Abuse/National Institutes of Health NIDH/NIH to discover high-potency, non-caloric sweeteners. The submission of this proposal had its own heart-pounding story. It was fully completed on a Friday, three days before the submission deadline (the next Monday). I was delegated by Doug to obtain the signature of the UIMC signing officer on a Friday afternoon, but the officer had already left the office, and I had to hunt the gentleman at his residence the next day (Saturday). On Monday morning, I traveled to Washington, D.C., carrying the box of proposals with me. On arrival, I took a taxi to the office of the NIDH headquarters, arriving a half hour before the 3:00 PM deadline, to deliver the proposal in person. The extra work paid off! The proposal was funded (NIDH/NIH contract NO1-DE- 02425).

Through this grant, I traveled to Paraguay in 1981 to carry out field studies of *Stevia rebaudiana* in its natural habitat in the Cerro Cuatía of Amambay in northeastern part of Paraguay, at the border with Brazil, and to collect other species of *Stevia* in Peru, Colombia, and Mexico. (From a plant sample of *Tessaria*



dodonaefolia, which I collected during this trip, an intensely sweet dihydroflavonol derivative was discovered.) In 1987, I suggested to Doug that he should travel to the field, as well, to experience for himself the search for sweet-tasting plants through ethnobotanical interviews and field organoleptic tests. With somewhat restrained excitement, Doug agreed, and we made plans to travel to South America. Our field adventures began in Asunción, Paraguay, where we were provided with a

VW Beetle as a rental car. Dr. Eugenia Bordas, a professor at the Facultad de Química Farmacéutica at the University of Asunción, San Lorenzo, accompanied us to Caacupe, a town east of Asunción, to botanize the area in search of sweet-tasting plants through interviews and organoleptic testing. We located "Chirca melosa" (*Baccharis* spp.) and "Yaguarete ka'á" (*Baccharis* spp.), both have sweet-tasting leaves, but not in large enough quantities. Somewhat exhausted after a long trip from Chicago and a whole day of errands and field trip, we were thankful for the opportunity to get a good night's sleep.

The next day, after checking out from the hotel, we spent the morning in the Asunción Central Market with Dr. Bordas to visit vendors and to interview them. We purchased samples of "Chirca melosa," "Yaguarete ka'a," "Tororati" (*Acanthospermum hispidum*), and "Mastuerzo" (*Lepidium* spp.). Other than tasting sweet, these plants are also used medicinally for various disease conditions. In the afternoon, we visited the School of Agronomy for some formalities and were

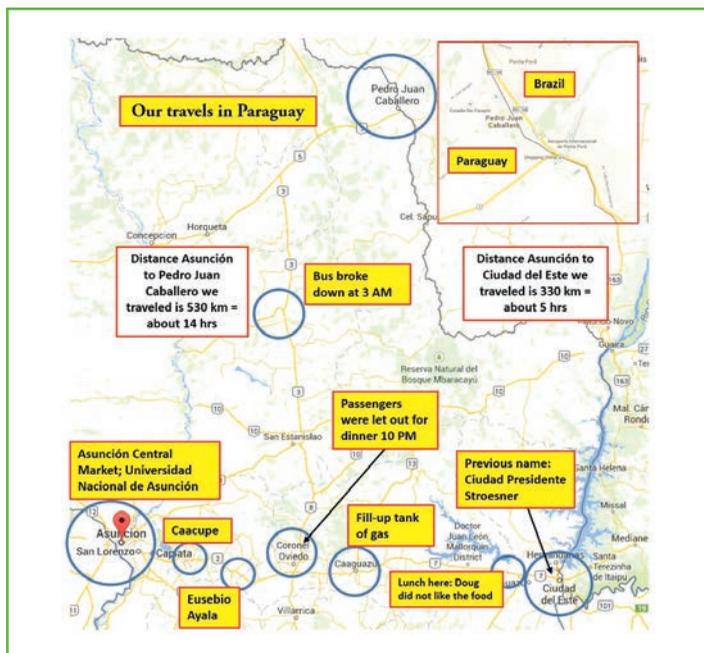
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Above: Pages from Dr. Soejarto's field journal documenting the journey.
Below: Dr. Kinghorn at the Central Market of Asuncion.

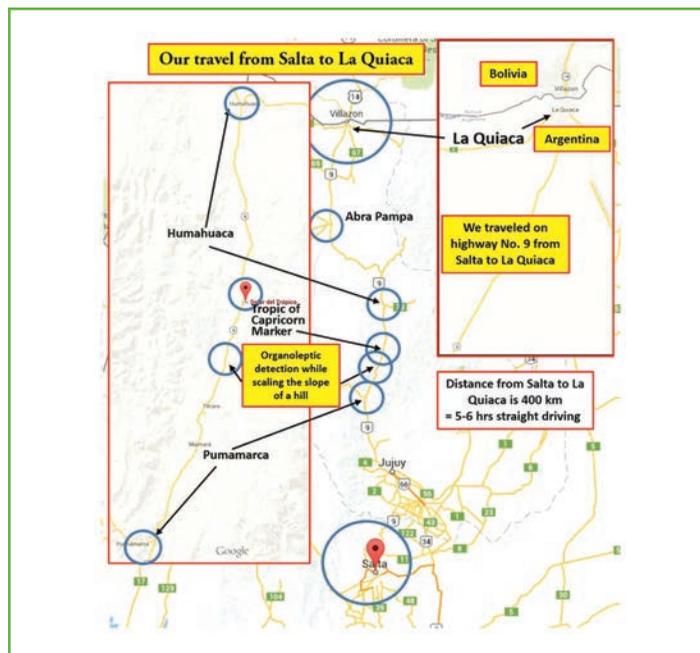


PHOTO CREDITS: DR. D. DOEL SOEJARTO

A Sweet Journey with Kinghorn and Soejarto



TRAVELS IN PARAGUAY. On August 12 we traveled by bus from Asunción to Pedro Juan Caballero, taking Highway #2 east to Coronel Oviedo, turning left to the north, then joining Highway #8, then Highway #3, and finally, joining Highway #5 east, arriving at PJC on August 13 at 10 AM. We took a return bus on August 14 to Asunción by retracing our inbound travel to PJC, arriving at 6 AM on August 15. That same day, after checking-in in the hotel room, and picking a rental car, we proceeded to travel east from Asunción to Ciudad Presidente Stroesner (today, Ciudad del Este). The next day, August 16, we returned to Asunción. We spent August 17 in Asunción, and traveled to Buenos Aires on August 18.



TRAVELS IN ARGENTINA. On August 19 we traveled by plane from Buenos Aires to Salta. On arrival in Salta, we picked up an Avis rental car and proceeded north to La Quiaca, botanizing the puna vegetation between Jujuy and Humahuaca, staying overnight in Humahuaca. The next day August 20, we continued north to La Quiaca. At La Quiaca, we crossed the border to Villazon town at the Bolivia side, staying there for a short time and returned back to La Quiaca. We proceeded to Humahuaca, where we stayed overnight. The next day August 21, we made our return trip to Salta, while botanizing the puna vegetation again, arriving in Salta in the evening. The next day August 22, we flew back to Buenos Aires.

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allowed to visit their school gardens. While walking on the field in the gardens, we found that the whole field was covered practically with *Acanthospermum hispidum*. We collected 5 kg of this plant!

The purpose of this trip was to examine and to collect a sweet-tasting plant, “Chirca melosa;” prior information indicated it could be found growing in the Pedro Juan Caballero (PJC) area. At 3:00 AM, the bus stopped in the middle of nowhere. The driver said the gas tank was leaking fuel. After examining the leak, he proceeded to a nearby road construction place run by a Menonite community. With the tank leak fixed, two hours later, the bus proceeded to PJC, arriving on August 13 at 10 AM, almost 5 hours behind the scheduled time! We spent two hours walking in the grassland areas at the vicinity, searching for sweet-tasting plants by inquiries with local people and through organoleptic detection. At 2:30 PM, we got a taxi and visited Dr. Ingeniero Gennaro at San Carlos Municipality, a professor at the PJC Agronomy School, the person who invited us to come

to PJC to show us living groves of “Chirca melosa.” To our glee, we found the groves of plants in full flowering, and indeed, the green parts of the winged stem tasted sweet. We also found that there were two kinds of “Chirca melosa,” one population with campanulate flower-head, the other having an ellipsoid-constricted flower-head. When we came across the population of chirca melosa at a field in San Carlos Barrio shown to us by Dr. Gennaro, Doug and I were very delighted, and Doug made a quick dash to the groves and started grabbing the plants to collect them. Drs. Gennaro and Bordas were looking at each other rather quizzically, and Dr. Bordas looked at me, saying, “please tell Doug to leave some plants behind!”

The next day, the bus left at 6 PM and arrived at Asunción at 7 AM the following day. With Dr. Bordas, we traveled to Ciudad Presidente Stroesner (CPS) (today Ciudad del Este) at the border with Brazil. We stopped at Caacupe, this time to search for *Scoparia dulcis*. We carried out interviews and a physical

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A Sweet Journey with Kinghorn and Soejarto

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Above: Dr. Kinghorn (left) collecting *Chirca melosa* (*Baccharis* spp.) in the outskirts of Pedro Juan Caballero.

Below: Dr. Kinghorn on the road to Salta-Humahuaca, along our search for sweet-tasting plants.



search in open and semi-open fields. At Eusebio Ayala, a woman told us that she had a sweet plant called “Urusu he’é” (sweet root; *Rhynchosia* spp.) in her garden. She dug out the roots and gave us some to sample. It tasted somewhat sweet, and the woman told us about its use for sore throat. The next morning was cold and rainy, but when the rain stopped around 10 AM, we took off to the School of Agronomy and to the Centro Forestal Alto Parana to meet with Mr. Benito Jacquet, a forest engineer, to inquire on sweet-tasting plants. He gave us the name of a tree called “Pire he’é” (sweet bark) and took us to the location of one such tree about 1 km distance from the residential compound. The tree was 15 m tall with a dirty white cambium layer in the bark, but without latex, and tasted sweet. Mr. Jacquet said that people use the bark as “hostia dulce” during an initiation rite. We were allowed to collect 1 piece of the bark and the leaves (as a voucher specimen). Later, we learned that the plant is a rare species, and we identified it as *Tetrorchidium rubrivenium* (Euphorbiaceae), also called “Ombú rá” (false ombu). We made arrangements for possible recollection in the event that the bark had interesting, new, sweet compounds.

We eventually traveled to Salta, located on the eastern flank of the Andean Cordillera, joined by Mr. Gilberti. Our plan was to travel by road north to La Quiaca at the border with Bolivia in search of sweet-tasting plants through field interviews, especially in market places, and through the guidance of organoleptic evaluation. Once there, we proceeded to travel to dique Campo Alegre to botanize the scrub-covered slopes of the Embalse La Caldera and collected two species of *Baccharis*. We continued north, passing through Jujuy, to proceed to Humahuaca. On the way, we stopped and botanized the puna vegetation, covering the valleys and hill slopes just south of the Tropic of Capricorn line at an altitude of 11,000-12,000 feet! We challenged ourselves by performing an experiment. We slowly scaled a slope to the top of the hill, occasionally stopping to clip the leaves or stem of a plant and perform an organoleptic evaluation. Although we collected a Rubiaceae plant with a sweetish and pungent root and a Solanaceae species with a sweetish root, I cannot say that there was any relationship between sweetness and altitude. We also found many other species, such as *Baccharis* spp., *Senecio* spp., *Parastrephia* spp., *Adesmia* spp., and cushion cactus.

The next day, we traveled north to La Quiaca, passing through Tres Cruces and Abra Pampa. In La Quiaca, we visited the market place and purchased some medicinal plants. We crossed to Villazón town, at the Bolivian side,

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A Sweet Journey with Kinghorn and Soejarto

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a busy place with pedestrians and traffic. From the border checkpoint to the town market, the road was lined with stands and stores selling coca leaves. In the market place, we found vendors of medicinal plants, and purchased an *Ombryophytum* (Balanophoraceae) sample. Finally, we flew back to Chicago with much satisfaction after a successful and productive journey.

It has been a real pleasure to travel to the field with a colleague in the hunt for high-potency sweeteners in plants. It is heartwarming to reflect on the experiences we went through together, both pleasant and sour. Doug took in stride all the sudden changes and unexpected happenings during the trip, such as the bus to PJC suddenly stopped in the middle of nowhere at 3 AM, broken down taxis, unsatisfactory lunch, or being under continuing scrutiny at the border from La Quiaca to Villazon while examining piles of coca leaves offered along the roadside. On the other side of the coin, we have truly enjoyed the overall experiences in this "blitzkrieg" itinerary, though often feeling dead exhausted at the end of the day. I have pleasant memories

of our market interviews, our glee on seeing the population of "Chirca melosa" in full bloom at PJC, discovering a large population of *Acanthospermum hispidum* in the garden fields of the Agronomy School at the University of Asuncion, finding the Pire he'é in CPS, savoring the beauty of Foz de Aguazu, the excitement of anticipating new discoveries when we scaled the puna hill near the Tropic of Capricorn, and a feeling of accomplishment to be standing next to the Tropic of Capricorn marker at Huacalera.

We express our sincere and profuse thanks to our colleagues in Paraguay, Argentina, and Costa Rica, who kindly and generously hosted and guided our travels in search of plants possessing highly sweet-tasting, non-caloric sweeteners. In closing, I wish to say that it has been a privilege to know and collaborate with Dr. Douglas Kinghorn in the search for plant-derived sweeteners and anticancer agents for more than 40 years. He is a brilliant scientist and a true gentleman, and I treasure our long-enduring friendship, both today and for the years to come. ■

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In Memoriam: Raimo Hiltunen

By Dr. Keyvan Dastmalchi

ASP member Dr. Raimo Hiltunen passed away on December 12, 2014, in Helsinki, Finland, after battling lung cancer. He was a professor in the Faculty of Pharmacy, University of Helsinki, Finland, until retiring in 2012. The Finnish Pharmaceutical Society awarded him the Albert Wuokko Award in 2007 for his pioneering work in the field of pharmacy education and research.

Dr. Hiltunen was born on July 25, 1944, in Piippola, Finland. He developed an interest in plant research in the 1960's, even before he graduated from high school. Initially, he started working at the Finnish Forest Research Institute of Tuusula, Finland, and later joined the A.I. Virtanen Institute, Kuopio, Finland, where he continued his research work under the supervision of Dr. Max von Schantz.

He was advised by his mentor to complete his high school studies in order to be able to continue working in academia. Therefore, he graduated from the Gustav Vasa secondary school in 1970, and after completion of his secondary education, continued his studies in Faculty of Mathematics and Natural Sciences, Division of Pharmacy, University of Helsinki, Helsinki, Finland. He obtained his Bachelor's (1974), Master's (1977) and PhD (1978) degrees in Pharmacy from the same school. The topic of his doctoral dissertation was phytochemical analysis of pine essential oils.

Dr. Hiltunen chose to stay in academia in order to pursue his passion, which was pharmacognosy research, and was appointed a Docent in 1978, Associate Professor in 1980, and full Professor in 1988. Dr. Hiltunen was a very active researcher, focusing on methods of instrumental analysis such as GC-MS, HPLC, and LC-MS



Dr. Raimo Hiltunen

of herbal natural products. His scientific articles, research publications, and textbooks amount to around 500.

As a teacher, Dr. Hiltunen had a reputation for simplifying complex ideas and concepts, and his students always remembered him as an inspirational figure. Among colleagues, he was known to be open minded and one of the proponents of interdisciplinary thinking and research. He was one of the pioneers of creation of Center for Drug Research at the University of Helsinki, Helsinki, Finland, known initially as the Drug Discovery and Technology Center, which gathered professionals from different areas of Pharmaceutical and Biomedical Sciences to work and collaborate together.

Dr. Hiltunen was also very involved in designing courses and training workshops for continuing education program for pharmacy professionals. Dr. Hiltunen was part of the executive board of Palmenia Centre for Continuing Education. His contribution in elevating the status of the Pharmacy School from being a Department in Faculty of Biosciences to the Faculty of Pharmacy was instrumental. He also served as the Dean of the newly established Faculty from 2004 to 2010. During this time he was also serving as the Head of Division of Pharmacognosy. In addition to great academic achievement and a rich research career, Dr. Hiltunen had a very active social life and participated in events organized by students. He also served as an advisor in the Northern Ostrobothnian Students' Association from 2007 to 2012.

Dr. Hiltunen will be missed by family, friends, and colleagues. He is survived by six grandchildren, two daughters, and a son-in-law. ■

As a teacher, Dr. Hiltunen had a reputation for simplifying complex ideas and concepts, and his students always remembered him as an inspirational figure. Among colleagues, he was known to be open minded and one of the proponents of interdisciplinary thinking and research.

In Memoriam: Carl Djerassi

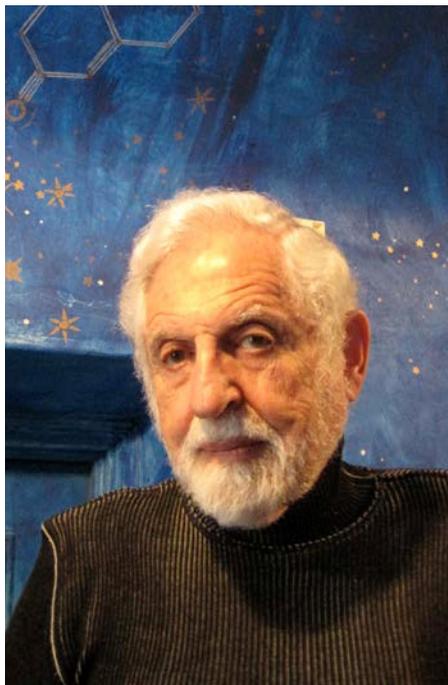
By Dr. Bill Baker

Dr. Carl Djerassi passed away in San Francisco, California, on January 30, 2015, at the age of 91. The natural products community has lost a productive and prolific contributor, innovator, advocate, friend and so much more.

From humble beginnings, Dr. Djerassi catapulted to the pinnacle of his career upon development of the first oral contraceptive. That achievement in natural products research, as much as any before it, solidified the role of organic synthesis in natural products drug discovery, capturing the advanced natural product scaffold on which to mount a medicinal chemistry hit-to-lead program. In many ways, his death marks the passing of an era of discovery and exploration that saw organic chemistry reliably contribute to improvement of the human condition in a way previously unimaginable.

Work on the first oral contraceptive ushered in Dr. Djerassi's commitment to women's health issues, a facet of his career that endured beyond his interests in natural products. Beyond women's health, entrepreneurship, writing novels, plays and poetry, he was never "just" a chemist. Often described as a "renaissance man," he was much more a man-of-the-world than any one noun could invoke. Eulogized in trade publications such as *Chemical and Engineering News*, the world's top newspapers including the *New York Times*, the *Wall Street Journal*, *The Guardian*, *The China Daily*, *The Times of India* and the *Washington Post*, business magazines, news blogs, and countless other outlets, Dr. Djerassi clearly leaves a legacy larger-than-life.

He will be best remembered in the natural products community for his contributions to structure analysis, lipid characterization and marine sterol biosynthesis, not to mention as a mentor and colleague. ASP member Dr. Jose



Dr. Carl Djerassi
RUTGERS UNIVERSITY

Giner, a Djerassi PhD student in the late 1980s and now on the faculty at the State University of New York College of Environmental Science and Forestry, Syracuse, New York, comments "... even if we only consider him as a scientist, he had remarkable breadth, from medicinal chemistry to natural products isolation, structure determination, synthesis, the octant rule, spectroscopy, chirality, computer methods, mechanism, chemical ecology, and biosynthesis." Always the innovator, he produced his mass spectral analysis volume from the proceedings of a course, he founded companies before it was popular for an academic to do so, and he used his scientific acumen as a segue into a literary career, adopting a "science-in-fiction" genre that worked well both as a literary form, but also

as a means to popularize science.

He is remembered fondly as a mentor. ASP member Dr. Russ Kerr, a Djerassi postdoc from 1987-1991 now at the University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada, "...found Carl to be the consummate academic. Always working (even on lab ski trips), always eager to learn our latest results, demanding, but supportive...", and ASP member Dr. G. "Bob" Pettit, a Djerassi PhD student in the early 1950s, now at Arizona State University, Tempe, Arizona, reflects "...from chemistry to medicine to art in many forms, Carl was the most multi-talented and productive genius of the past century."

Dr. Jan Simek, Professor Emeritus at California Polytechnic (Cal Poly) at San Luis Obispo, California, was a PhD student during the heady days in the Djerassi lab of the early 1970s and speaks volumes of the times and the man:

continued on page 27

From humble beginnings, Dr. Djerassi catapulted to the pinnacle of his career upon development of the first oral contraceptive.

In Memoriam: Carl Djerassi

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"I was in Carl's research group from 1972-75, at a time when the group of about 25 people was publishing about one new paper each week. It's hard to imagine that this was Carl's half-time position! When he was in town, he would come to his Stanford office by 7 AM, before most of the graduate students and post-docs, and leave by noon to go to his office at Syntex; he "put on his other hat" as President of Syntex Research.

He told me once that he considered natural products chemists to be the most well rounded, because they had to have all the skills: lab skills for isolation and purification, spectroscopy skills for structure determination, and the ability to design and execute synthesis, whether for modification of the natural product, or in some cases, total synthesis.

For the most part, Carl kept his personal life separate from running the group, with some notable exceptions. He took the group on an annual ski trip to the Sierras in the winter, and in the summer, he would lead a hike on his ranch, past the kinetic sculpture with giant aluminum arms waving in the middle of the woods as the gentle breezes blew by. That ranch was his refuge."

Dr. Simek was the Organic Chemistry professor at Cal Poly when my wife and I were undergraduates there. As I was a postdoc in the Djerassi lab in the late 1980s, I think that makes Jan and I academic brothers, yet we are at the same time academic father and son. Dr. Djerassi loved such irony and reveled in the full-circle it reflected. Like those before me, I found him supportive and encouraging, driven ultimately by his interest in the science.

ASP President Phil Crews recognizes both the mentorship and advocacy Carl was known for:

"...his imprint on the careers of students and professions has been vast. Countless universities and biotech companies are pop-

ulated by individuals he trained or that were mentored by his former students. His creativity at Stanford University from 1960-2002 was stunning. Numerous ASP members engaged in marine natural products, including myself, owe him much because of stimulating interactions with the Stanford group. He was charismatic and a warrior. Here is just one example of his ability to stir things up. Many years ago Carl wrote – "It is with some relish that I recall the flood of reprint requests prompted by a footnote on the title page of one of my papers: "Selected personal statements by the author were removed by the editor without Professor Djerassi's consent. An uncensored version of this paper can be obtained by writing to Professor C. Djerassi"." Overall, I am convinced that the field of chemistry and biology of marine organisms was accelerated by his insights. He was a leader in the design of projects beginning at the Stanford lab chemistry bench which were then followed up using seawater systems at Hopkins Marine Station in Pacific Grove."

A number of observers have noted the apparent oversight of the Nobel Committee for failing to recognize Dr. Djerassi's significant impact on human health and society. Dr. Jim Leahy, a colleague of Dr. Djerassi's now at the University of South Florida, Tampa, Florida, writes "...I think Djerassi joins a distinguished list of people who were unjustly denied a Nobel Prize despite living for ample time to allow the situation to be rectified ... I daresay that many of the Nobel winners over the past 1/3 century have not had anywhere near the societal impact that the pill has had on the world."

I think the natural products community will remember Dr. Djerassi for his accomplishments, his brashness, and his charm. His life's work has an immortality to it that even he would be envious of, and Dr. Djerassi was not an envious man. ■

I daresay that many of the Nobel winners over the past 1/3 century have not had anywhere near the societal impact that the pill has had on the world.

Meet a New ASP Member

New ASP Member Dr. Paul Bagavandoss is an Associate Professor at Kent State University at Stark, North Canton, Ohio. In addition to teaching, Dr. Bagavandoss' incorporates undergraduates in his research on cancer. He shares his interest in collaborating with other ASP members and testing compounds for anticancer activity. We warmly welcome Dr. Bagavandoss to the ASP and look forward to seeing him and his students at future Annual Meetings.

By Dr. Dan Kulakowski

How did you hear about the ASP?

I found out about the ASP while searching for natural products topics on the internet.

Why did you join ASP?

I teach at a regional campus of Kent State University, and have eight courses per year. I like to do research, but this is very difficult with 4/4 teaching load. I obtain internal grants for research and train undergraduate students in *in vitro* research with ovarian cancer cells. We gather enough data to attend the American Society of Cell Biology meetings, which provides an opportunity for students to seek admission to graduate school, if they are interested. I also would like to meet ASP researchers for potential collaboration.

Do you belong to any other scientific societies?

I belong to the American Society of Cell Biology and International Cannabinoid Research Society (ICRS).

What are your current research interests in pharmacognosy?

I would like to test plant chemicals on ovarian cancer cell proliferation. I am presently researching oleoylethanolamide (OEA), an analog of anandamide which acts as an appetite suppressant and an inhibitor of certain cancer cells. If there are ASP researchers who are willing to share their compounds for undergraduate research, that would be great.

What is your scientific background?

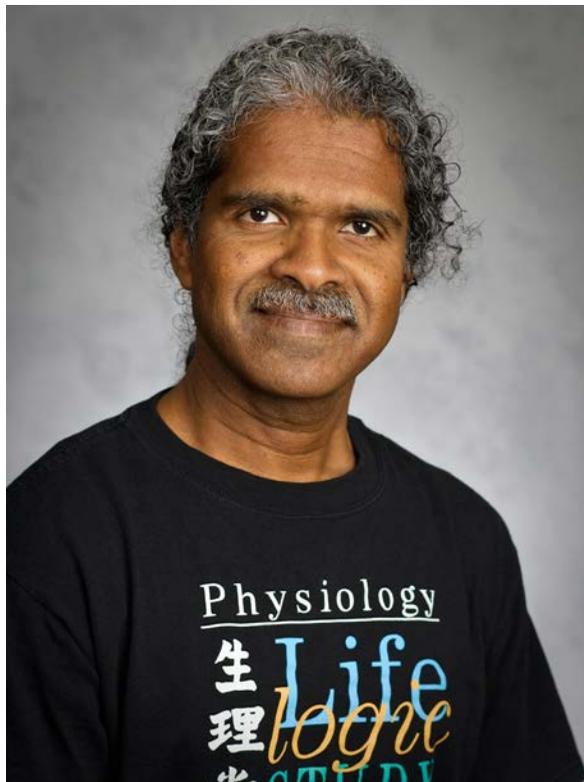
I am trained as a reproductive physiologist, but I am becoming an *in vitro* cell biologist; it is difficult to do animal research due to lack of time, facility and funds.

What would you like to achieve through your membership?

I am looking for collaboration and would like to bring undergraduate students to the Annual Meetings.

What do you like doing in your spare time?

Very little spare time exists for me!



Dr. Paul Bagavandoss

KENT STATE UNIVERSITY-STARK

What are you currently reading?

I am reading articles on the biology of aging and the caste system in India.

What is your favorite plant, fungus, animal or microbe (for research or general interest) and why?

I like the neem tree (*Azadirachta indica*). In India, this tree is revered as a medicine and used in religious festivals. I also am fascinated by *Cannabis sativa*. Of all the plants on earth, only this one seems to produce tetrahydrocannabinol (THC), which has captured the interest of people over thousands of years. ■

I am looking for collaboration and would like to bring undergraduate students to the Annual Meetings.

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 13 domestic full members, 2 international members, and 16 associate members. We look forward to meeting you and learning more about you and your work.

ACTIVE MEMBERS

Dr. Ikuro Abe
Tokyo, Japan

Prof. Mireille Aleman
West Palm Beach, Florida

Dr. P. Bagavandoss
North Canton, Ohio

Dr. George Chlipala
Chicago, Illinois

Dr. Adam Duerfeldt
Norman, Oklahoma

Dr. Paul Jensen
La Jolla, California

Dr. Holly Johnson
Santa Monica, California

Dr. Jagadish Loganathan
Indianapolis, Indiana

Dr. Eric Nybo
Big Rapids, Michigan

Mrs. Patricia O'Connell
Apopka, Florida

Dr. Daniel Sweeney
Arlington Heights, Illinois

Dr. Sachiko Tsukamoto
Kumamoto, Japan

Dr. Sylesh Venkataraman
Boulder, Colorado

Dr. Rajesh Viswanathan
Cleveland, Ohio

Lesley-Ann Giddings
Middlebury, Vermont

ASSOCIATE MEMBERS

Mrs. Temitayo Ajayi
Ibadan, Nigeria

Adam Carter
Palm Beach Gardens, Florida

Ms. Mary Choules
Chicago, Illinois

Mr. Emil Jivishov
Marburg, Germany

Ms. Sevda Jivishova
Marburg, Germany

Ms. Erica Larson
Salt Lake City, Utah

Ms. Kimberly McDevitt
Milwaukee, Wisconsin

Mr. Ian Miller
Madison, Wisconsin

Mrs. Walaa Mousa
Guelph, Ontario, Canada

Tyler Olsen
Norman, Oklahoma

Rebecca Pazos
Miami Springs, Florida

Mr. Marcelo Pena Cerda
Santiago, Chile

Dr. Munikishore Rachakunta
Railway Koduru, India

Ms. Maria Sakavitsi
Attica, Greece

Paula Tyler
Atlanta, Georgia

Derrick Waller
Westminster, Colorado

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. 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.

**249th 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/

Phytochemical Society of Europe

April 27-30, 2015

Murcia, Spain

www.phytochemicalsociety.org/

Gordon Research Conference: Natural Products

July 26-31, 2015

Proctor Academy

Andover, New Hampshire

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/

**63rd International Congress and Annual Meet-
ing of the Society for Medicinal Plant and
Natural Product Research (GA)**

August 23-27, 2015

Budapest Congress Center, Budapest, Hungary

ga2015.hu/

**1st International Conference on Natural
Products for Cancer Prevention and Therapy**

August 31-September 2, 2015

Istanbul, Turkey, Chicago, Illinois

www.npcpt2015.org





Brief News From Washington

By Dr. Georgia Perdue

- **The National Institutes of Health's (NIH) National Center for Complementary and Alternative Medicine (NCCAM) has a new name: National Center for Complementary and Integrative Health (NCCIH).** NIH director Dr. Francis Collins told his Advisory Committee to the Director (ACD) in December that NCCIH Director **Dr. Josephine Briggs** "was very anxious to see it happen [and] **pushed for this because alternative medicine caused a certain gut response which she felt should be put aside.**" ASP member **Dr. David Kingston**, whose four-year term on the NCCAM Advisory Council ended last October (ad hoc member in 2005) provided his insights: "The name change ... was discussed informally by the ... Advisory Council for over a year. The primary motivation for the change was to clarify the mission of the Center by emphasizing the fact that most uses of 'alternative medicine' actually occur side-by-side with conventional medicine Integrative Health is a better description of how alternative medicine is actually used. The name change does not affect ... the studies of natural products. "[S]tudies of natural products and their uses in integrative health practices will continue to be one of the foci of the Center.]"
- **Funding Alert: Phased Innovation Award for Exploratory Clinical Trials and Studies of Natural Products in NCCIH High Priority Research Topics (R21/R33).**
- **FDA had a banner year in 2014 approving 41 new drugs, the most since 1996 when it approved 53 new drugs. Last December alone, FDA approved seven of the 41 new drugs. In 2013, FDA approved only 27 new drugs.**
- **FDA Commissioner Dr. Margaret Hamburg resigned in early February after serving for six years.**
- **Funding Global Health Research:** A "first ever" two day meeting was held last July with 22 senior people from the Gates Foundation "the biggest players," and 22 NIH Institutes and Centers (IC) directors and science managers, reported NIH director Dr. Francis Collins at his ACD December meeting. **The Gates Foundation and NIH will each provide 54% of the total amount needed to study tuberculosis, malaria, neglected tropical diseases, and new technologies.** "We want to find ways to work together. It was a very productive meeting. **We have never had senior staff from the Foundation and NIH meet together. There will be another meeting [in 2015]."**
- **Senators Lamar Alexander (R-TN) and Richard Burr (R-NC) released a report, "Innovation for Healthier Americans" at the end of January, which examines "... what is [and is not] working at the ... Food and Drug Administration (FDA) ... and the ... NIH."** The Senators are seeking feedback on their report. The bipartisan committee chaired by Senator Alexander, with ranking member Senator Patty Murray (D-WA), will hold a series of hearings on several topics. Senator Alexander said, **"The challenge is that our process for developing and reviewing [cures and devices] is out of date and unable to match the pace of discovery...."** Senator Burr noted that the "report asks, **how can we do it better?"** Feedback has been requested by February 23, 2015. Stay tuned.
- Senators Orrin Hatch (R-UT) and Michael Bennet (D-CO)

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The Gates Foundation and NIH will each provide 54% of the total amount needed to study tuberculosis, malaria, neglected tropical diseases, and new technologies.

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introduced the Dormant Therapies Act, to “establish a new class of pharmaceuticals known as ‘the **dormant therapies,**’ **eligible for 15 years of data protection** ... The bill aims to “encourage the development of desperately needed treatments for some of the most troubling diseases and disabilities ...” Senator Hatch hopes to “... encourage innovators to capture lost opportunities and bring new and essential products to the market for patients who need them.” **The Act will help create promising opportunities to bring new drugs to the market.**

- In January, Senators Orrin Hatch (R-UT) and Michael Bennet (D-CO) introduced the Promise for Antibiotics and Therapeutics for Health (**PATH) Act to accelerate the approval of new antibiotics especially for drug resistant “superbugs.” The bill aims to allow the FDA to accelerate the approval of antibiotics for unmet needs.**
- In early February, **the Energy and Commerce Committee chaired by Representative Fred Upton (R-MI) released a 400 page discussion draft legislation to implement the 21st Century Cures Initiative.** It incorporates some of the ideas of the three bills mentioned above. Representative Frank Pallone (D-NJ) is concerned it could “create more problems for our health care system than it solves.” Organizations and scientists will have great input. There are five “titles” or frameworks for discussion. Simply and very briefly: **incorporating patients’ perspectives** into the regulatory process and addressing unmet needs; building the foundation for 21st century medicine including helping young scientists; accelerating drug discovery, development and delivery ... continue 21st century innovations at NIH, FDA, [etc] with NIH developing a new strategic investment plan; modernizing clinical trials. A final bill may be ready near the end of the year.
- **Representatives Kathy Castor (D-FL) and G. K. Butterfield (D-NC) introduced a bill, Permanent Investment in Health Research Act,** to ensure that NIH is considered a non-discretionary program, i.e., is guaranteed funding, jobs, and scientific advancement. Representative Butterfield said, “Funding for medical research is too essential to be subjected to political squabbles.”
- An NIH funded study has shown that **dihydroartemisinin-piper-aquine, is very effective as a year-round malaria preventive treatment in young children ages 6 to 24 months because it reduces the risk of getting malaria.** “Year-round preventive measures are badly needed” in places like Uganda, where

the study was carried out and where malaria rates are very high year-round.” The study was conducted by Dr. Grant Dorsey and his colleagues at the University of California, San Francisco, California, and researchers with the Infectious Diseases Research Collaboration at the Makerere University College of Health Sciences in Kampala, Uganda.

- Last August, Sanofi drug company announced it was ready to distribute large quantities of its **semisynthetic artemisinin malarial combination drug** to six countries in Africa. Sanofi and its partner, global health non-profit PATH, began producing the compound in 2013. According to Sanofi, “... the goal is [to] complement agricultural *Artemisia* production...” because the plant is slow-growing. The company hopes this effort will provide greater availability of the drug. (Some of this information was provided by *Drug Industry Daily* via *FDA News*).
- **Natural clays from a volcanic deposit near Crater Lake, Oregon, have been found to be effective in killing antibiotic resistant bacteria** say National Science Foundation (NSF)- funded researchers at Arizona State University, Tempe, Arizona. NSF quoted lead researcher Dr. Lynda Williams, a biogeochemist and colleague Dr. Keith Morrison, as saying they hit “pay dirt” [in ... Oregon]. “The most effective antibacterial clays are those from the Oregon deposit ... **Samples from an area mined by Oregon Mineral Technologies, Inc. proved active against a broad spectrum of [antibiotic resistant bacteria] ... [methicillin-resistant *Staphylococcus aureus*] MRSA and ... [extended spectrum beta-lactamase] ESBL.**” “... antibacterial clays ... buffer pH [which is key] ... to their ... being alternatives to conventional antibiotics.” Dr. Williams added, “[c]lay minerals have been sought for medicinal purposes for millennia.” “[G]reen clays ... historically ... used in France in mineral baths ... have ... antibacterial properties ... used to treat *Mycobacterium ulcerans*,” which causes Buruli ulcers, very common in Africa.
- **NIH and NSF are collaborating in NSF’s Innovation Corps (I-Corps) program to accelerate biomedical research innovations into the marketplace.** This program is intended to train NIH-funded researchers to “evaluate their scientific discoveries for commercial potential ...” Participating NIH institutes include the National Cancer Institute (NCI), National Center for Advancing Translational Sciences (NCATS), National Heart, Lung, and Blood Institute (NHLBI), and National Institute of Neurological Disorders and Stroke (NINDS).

In January, Senators Orrin Hatch (R-UT) and Michael Bennet (D-CO) introduced the Promise for Antibiotics and Therapeutics for Health (PATH) Act to accelerate the approval of new antibiotics especially for drug resistant “superbugs.”

From the Archives: A Lifetime of Service to Pharmacognosy



DR. GUIDO F. PAULI

By Ms. Devhra BennettJones

The enduring career of A. Douglas Kinghorn is remarkable. His contributions to the field of pharmacognosy and the ASP have inspired multitudes of dedicated chemists working with natural products and their active compounds. The following timeline displays a chronological tribute to his insightful intellect, tireless and dedicated productivity as a student, chemist, professor, dynamic speaker, editor, mentor, and role-model. It was composed through study of the ASP archives preserved by the Lloyd Library, and by consultations with his colleagues. This timeline demonstrates his distinguished devotion to the exploration and progress of pharmacognosy.

- 1969** Bachelor of Science in Pharmacy, University of Bradford, United Kingdom
 - 1969-Present** Authored or co-authored approximately 425 scientific research articles, book chapters, reviews, and edited or co-edited five books
 - 1970** Master of Science in Forensics, University of Strathclyde, United Kingdom
 - 1975** Doctor of Philosophy, University of London, United Kingdom
 - 1976** Postdoctoral Researcher, University of Mississippi
 - 1977** Postdoctoral Researcher, University of Illinois, Chicago
 - 1985** Elected as Fellow of The Linnean Society of London, United Kingdom
 - 1985-1988** Member of the ASP Executive Committee
 - 1986** Professor, Department of Medicinal Chemistry and Pharmacognosy, University of Illinois, Chicago
- continued on page 34*

From the Archives: A Lifetime of Service to Pharmacognosy

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- 1989** ASP Vice President
- 1990** Doctorate of Science, University of London, United Kingdom
- 1990** Co-Chair of the ASP Foundation Financial Planning Board
- 1990** Present—Contributor to the ASP Foundation
- 1990** Gastprofessor, Swiss Federal Institute of Technology Zurich, Switzerland
- 1990-1991** ASP President, in Dr. Kinghorn's Presidential Address he characteristically lauded his colleagues and concluded with, "...it has been a heartfelt honor and enormous pleasure to serve in the capacity of your President. I am truly thankful for all of the support I have received." (ASP Newsletter, Vol. 28, No. 1, Spring 1992, p. 7)
- 1990** Awarded a National Cancer Institute National Cooperative Drug Discovery and Development Group grant as Principal Investigator for the program, "Novel Strategies for Plant-Derived Anticancer Agents"
- 1991** Vice Chairman of the newly formed ASP Foundation (Dr. Kinghorn's future editorship of *The Journal of Natural Products* [1993] is attributed with the significant growth of the ASP Foundation resources)
- 1991** Elected as Fellow of the Royal Pharmaceutical Society of Great Britain, United Kingdom
- 1991** ASP Annual Meeting Scientific Program Committee Chairman, Chicago, Illinois
- 1991-1992** ASP Nominating Committee Chair
- 1991-1992** President, Society for Economic Botany
- 1992-Present** Ad hoc reviewer for National Institutes of Health
- 1993** Began as Editor-in-Chief designate of *The Journal of Natural Products*, Dr. Harry Fong assumed the Associate Editor designate position. They followed the excellent work of Dr. James Robbers, Editor-in-Chief, and Dr. Jerry McLaughlin, Associate Editor
- 1993** B. Kenneth West University Scholar, University of Illinois
- 1993-1994** ASP-American Chemical Society Journal Study Committee
- 1993-1996** Member of the negotiating team representing the ASP in the collaboration with the American Chemical Society and the ASP's co-publication of *The Journal of Natural Products*
- 1993-1997** Member of the AIDS and Related Diseases D, National Institutes of Health Study Section
- 1994** Present ASP Executive Committee
- 1994** Present Editor-in-Chief of *The Journal of Natural Products*, and ASP Publications Committee Chair
- 1994** ASP Annual Meeting Scientific Committee, Halifax, Nova Scotia
- 1996** Platinum Award, Division of Agricultural and Food Chemistry, American Chemical Society
- 1996** International Advisory Committee Chair, Israel International Symposium on Sweeteners, Jerusalem, Israel
- 1996** Elected as Fellow of the American Association of Pharmaceutical Scientists
- 1996** Visiting Professor, University of Salerno, Italy
- 1996** The ASP and the American Chemical Society enter partnership to co-publish *The Journal of Natural Products*
- 1996** *The Journal of Natural Products* impact factor of 1.432
- 1996** *The Journal of Natural Products* total citations of 3,634
- 1996-1997** ASP Long-Range Impact on Policy Committee
- 1996-1997** Visiting External Examiner, Science University of Malaysia, Penang, Malaysia
- 1997** Visiting Professor, University São Paulo, Brazil

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JOURNAL OF
**NATURAL
PRODUCTS**

From the Archives: A Lifetime of Service to Pharmacognosy

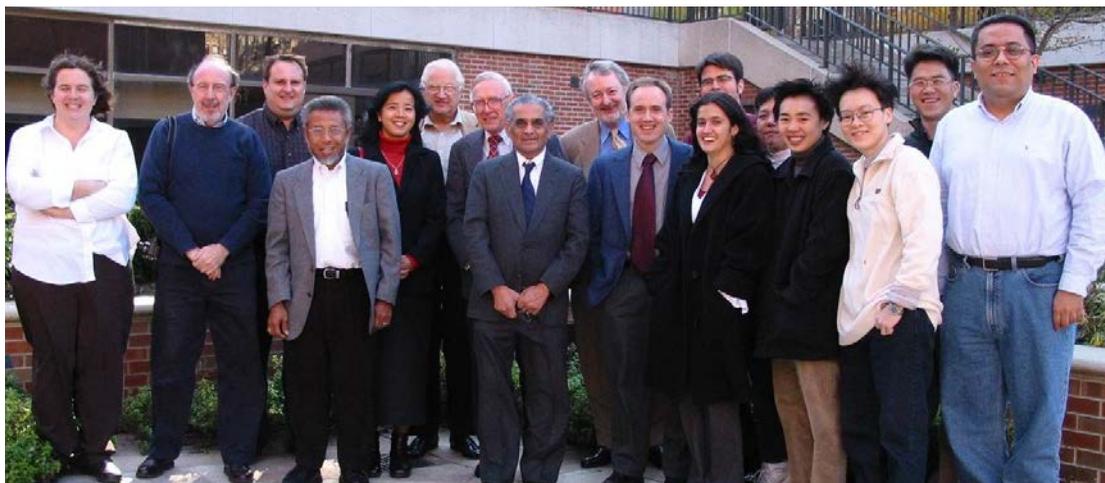
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- 1997** Served as an Opponent for PhD examination, Uppsala University, Sweden
- 1997-1999** ASP Organizing Committee, 1999 Interim Meeting on Herbal Medicine, Tunica, Mississippi
- 1998** ASP representative at the 50th Anniversary Meeting of the Japanese Society of Pharmacognosy, Kyoto, Japan
- 1999** Honorary Member, Sociedad Argentina de Investigaciones en Quimica Organica, Buenos Aires, Argentina
- 1999-2000** ASP Nominating Committee
- 1999-2000** ASP Annual Meeting Local Program Committee, Oaxaca, Mexico
- 2000** ASP President Jim Gloer "President's Message" credits the excellence of *The Journal of Natural Products* in the Society's membership growth to over 1,100. (*ASP Newsletter*, Vol. 35, No. 4, Winter 2000, p. 6)
- 2000-2001** Visiting External Examiner, Chinese University of Hong Kong
- 2001** Designated Highly Cited Researcher - Original Member, Institute of Scientific Information (Agricultural Sciences), Philadelphia, Pennsylvania
- 2001** *The Journal of Natural Products* impact factor of 1.737
- 2001** *The Journal of Natural Products* total citations of 5,665
- 2001** ASP Annual Meeting Local Program Committee, Oaxaca, Mexico
- 2001** ASP Annual Meeting Scientific Program Committee, Oaxaca, Mexico
- 2001** ASP Foundation inception of the annual Arthur E. Schwarting Award and Jack L. Beal Award for the best papers in *The Journal of Natural Products*
- 2001** Present—Coordinates the evaluation and presents the ASP Foundation's annual Arthur E. Schwarting Award and Jack L. Beal Award for the best papers in *The Journal of Natural Products*
- 2002** ASP representative and speaker at the "From Ethnopharmacy to Molecular Pharmacognosy" Retirement Symposium for Dr. Otto Stichler, Zurich, Switzerland
- 2002** Newsmaker 2002 Award, American Chemical Society
- 2002** Member of Expert Panel, International Agency for Research on Cancer Monographs for the Evaluation of Carcinogenic Risks to Humans, World Health Organization, Lyon, France
- 2002-2003** Award for Excellence in Teaching, University of Illinois, Chicago
- 2004** Named the first Jack L. Beal Chair in Natural Products Chemistry and Pharmacognosy in the College of Pharmacy, The Ohio State University. Dr. Kinghorn continues to excel in this esteemed position.
- 2004** Led the publication of the special issue of *The Journal of Natural Products* honoring Drs. Monroe E. Wall and Mansukh C. Wani, Vol. 67, No. 2
- 2004** Led the publication of the special issue of *The Journal of Natural Products* honoring Drs. D. John Faulkner and Paul J. Scheuer, Vol. 67, No. 8
- 2005** *The Journal of Natural Products* impact factor of 2.267
- 2005** *The Journal of Natural Products* total citations of 9,928
- 2005** Ad hoc member of the National Advisory Council for Complementary and Alternative Medicine, National Institutes of Health
- 2005-2010** "Dietary Supplements – Botanicals" Expert Committee Chair of the United States Pharmacopeia

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From the Archives: A Lifetime of Service to Pharmacognosy



Dr. Kinghorn (center, back row) in 2003 with members of the NCDDG group at University of Illinois at Chicago.

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- 2006** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. Norman R. Farnsworth, Vol. 69, No. 3
- 2006** Commemorated 10 years of *The Journal of Natural Products* co-published by the ASP and the American Chemical Society
- 2006** Elected as Fellow of The School of Pharmacy, University of London, United Kingdom
- 2006** Commemorated 10-year anniversary of *The Journal of Natural Products* Associate Editor, Richard Powell
- 2006** Elected as Fellow of the American Association for the Advancement of Science
- 2006** Completed the second cycle as Principal Investigator of the National Cancer Institute National Cooperative Drug Discovery and Development Group grant for the program, "Novel Strategies for Plant-Derived Anticancer Agents"
- 2007** Elected as Fellow of the ASP
- 2007** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. Kenneth L. Rinehart, Vol. 70, No. 3
- 2007** Served as an Opponent for PhD examination, Uppsala University, Sweden
- 2007** Elected into the American Association for the Advancement of Sciences Section on Pharmaceutical Sciences
- 2007** Coordinated the Scientific Program for The Ohio State University's College of Pharmacy 2007 Research Day
- 2007** Grisvold Lecture Award, Department of Medicinal Chemistry, University of Minnesota
- 2008** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. George Robert Pettit, Vol. 71, No. 3
- 2008** Awarded \$7 million Program Project Grant for "Discovery of Anticancer Agents of Diverse Natural Origin," from the National Institutes of Health's National Cancer Institute. Grant awarded in collaboration with nine other ASP members
- 2008-Present** Editor-in-Chief of the book series *Progress in the Chemistry of Organic Natural Products* (published by Springer-Verlag, Vienna, Austria)
- 2009** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. David G. I. Kingston, Vol. 72, No. 3

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From the Archives: A Lifetime of Service to Pharmacognosy

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- 2009** Inducted as a Honorary Member at the 50th Anniversary ASP Annual Meeting, Honolulu, Hawaii
- 2009-Present** ASP Honorary Member
- 2009** *The Journal of Natural Products* impact factor of 3.159
- 2009** *The Journal of Natural Products* total citations exceeds 15,000
- 2010** Led the publication of the special issue of *The Journal of Natural Products* honoring Drs. John W. Daly and Richard E. Moore, Vol. 73, No. 3
- 2010** Award of Merit, National Institutes of Health/National Cancer Institute (for work on PDQ CAM Editorial Board)
- 2010** ASP Norman R. Farnsworth Research Achievement Award
- 2010** Featured speaker at the Fitoterapia Symposium
- 2010** Percy Julian Memorial Lecture Award, Howard University
- 2011** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. Koji Nakanishi, Vol. 74, No. 3
- 2011** Suggested the Pharmacognosy Field Notes column for the *ASP Newsletter*
- 2011** Received Honorary Doctor of Science Degree, University of Bradford, United Kingdom
- 2011** Norman R. Farnsworth Excellence in Botanical Research Award, American Botanical Council
- 2012** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. Gordon M. Cragg, Vol. 75, No. 3
- 2012** *The Journal of Natural Products* impact factor of 3.278
- 2012** *The Journal of Natural Products* total citations 19,898
- 2012** Speaker at the Special Symposium in honor of Dr. Norman R. Farnsworth
- 2012** Led the publication of the 75th volume of *The Journal of Natural Products*, and oversaw the plenary symposium celebration of the anniversary at the 8th International Congress on Natural Products Research in New York City
- 2013** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. Lester A. Mitscher, Vol. 76, No. 3
- 2013** *The Journal of Natural Products* impact factor of 3.947
- 2013** *The Journal of Natural Products* total citations 20,791
- 2013** Delivered the Frank Fish Memorial Award Lecture, School of Pharmacy, University College London., United Kingdom. Dr. Kinghorn acknowledged the mentorship of Drs. Frank Fish, David Phillipson, Norm Farnsworth, and Jack Beal in his Baccalaureate, Doctorate, and post-Doctorate education
- 2014** Led the publication of the special issue of *The Journal of Natural Products* honoring Dr. Otto Sticher, Vol. 77, No. 3
- 2014** Awarded \$7.1 million Continuation Program Project Grant for “Discovery of Anticancer Agents of Diverse Natural Origin”, from the National Institutes of Health’s National Cancer Institute. Grant awarded in collaboration with ten other ASP members
- 2014** Tribute to Mrs. Rosemary J. Powell for her many years of service as an Editorial Assistant for *The Journal of Natural Products*
- 2014** *The Journal of Natural Products* impact factor and total citations have almost tripled since the inception of Editor-in-Chief Doug Kinghorn’s tenure
- 2014** Annual Meeting Scientific Program Committee, University of Mississippi, Oxford, Mississippi ■



Dr. Kinghorn with his wife Helen.

James McAlpine, Treasurer
The American Society of Pharmacognosy
3149 Dundee Road, #260,
Northbrook, Illinois 60062



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Dr. James E. Robbers, Purdue University • Dr. Yuzuru Shimizu, University of Rhode Island
Dr. David J. Slatkin, Chicago State University • Dr. E. John Staba, University of Minnesota
Dr. Otto Sticher, Swiss Federal Institute of Technology
Dr. Hildebert Wagner, University of Munich • Dr. Mansukh Wani, Research Triangle Institute

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

James McAlpine, Treasurer, The American Society of Pharmacognosy,
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