



PSNA News

Phytochemical Society of North America
Sociedad Fitoquímica de América del Norte
Société Phytochimique de L'Amérique du Nord

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Letter from the President, January 2012



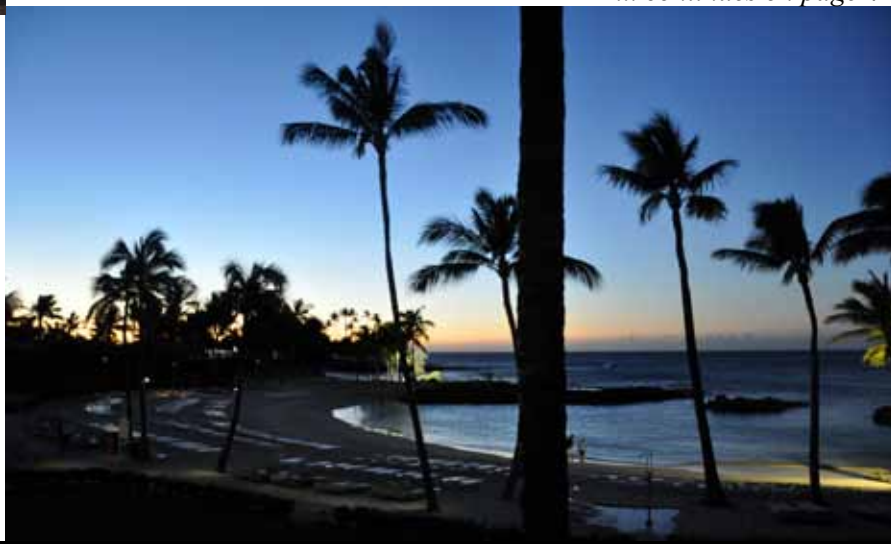
ALOHA!

Hello to all continuing members and to the wealth of new members that joined at our 50th Anniversary meeting this past December in Kona, Hawaii. This was a significant milestone for our group that started out as the Plant Phenolics Group of North America in 1961 and changed its name to the Phytochemical Society of North America on January 1, 1967. PSNA has a rich history of hosting excellent meetings covering all aspects related to plant constituents and for moving the field of

phytochemistry and related sub-disciplines forward. It is my pleasure to serve as president of the Society during its 50th anniversary year.

I first joined the PSNA in 1985 and attended the conference in Pacific Grove, CA (Asilomar) which was also my first professional conference. It was a wonderful experience and I was pleased with the reception of my short talk. Including 1985, I have attended 20 of the 27 meetings and am always impressed with the science, the networking opportunities, and the attention paid to younger members.

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In this issue: Getting ready for for the 2012 meeting, review of the 50th!

This is the printed version of the PSNA Newsletter. The web PDF version can be downloaded from the website: www.psna-online.org.



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The Phytochemical Society of North America

The Phytochemical Society of North America (PSNA) is a nonprofit scientific organization whose membership is open to anyone with an interest in phytochemistry and the role of plant substances in related fields. Annual membership dues are U.S. \$60 for regular members and \$30 for student members. Annual meetings featuring symposium topics of current interest and contributed papers by conference participants are held throughout the United States, Canada, and Mexico. PSNA meetings provide participants with exposure to the cutting-edge research of prominent international scientists, but are still small enough to offer informality and intimacy that are conducive to the exchange of ideas. This newsletter is circulated to members to keep them informed of upcoming meetings and developments within the society, and to provide a forum for the exchange of information and ideas. If you would like additional information about the PSNA, or if you have material that you would like included in the newsletter, please contact the PSNA Secretary or visit our website at www.pсна-online.org. Annual dues and changes of address should be sent to the PSNA Treasurer. Also check the PSNA website for regular updates.

The PSNA is an all volunteer organization which depends on its membership to run the organization. We appreciate the time and effort these volunteers are putting in to keep the organization up and running. As a member, please consider volunteering to serve on one of these committees. The PSNA can always use more help!

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51st Annual Meeting of the Phytochemical Society of North America

August 11-15, 2012



Save the dates!

PSNA 2012 will be held Aug. 11-15 on the campus of The University of Western Ontario, in London, Ontario, Canada.

Following close on the heels of the very successful 50th anniversary meeting in Hawaii, the 51st PSNA meeting program will include a broad range of topics of interest to all PSNA members. Main symposia topics include Metabolism/Metabolomics, Botanicals/Medicinals, Ecological relevance of Phytochemicals, Biosynthesis, and Phytochemical Applications. The program will be filled in with contributed talks selected from submitted abstracts. Poster session round out the program.

A call for abstracts will be announced in early February, with a submission deadline of May 30, 2012. Early Bird Registration will open in February, and close May 30, 2012. The final day for registration will be July 31, 2012. Registration fees are inclusive of most meals (excludes only two dinners), including the awards banquet.

Getting to London is easy! It is situated less than 200 km West of Toronto and 200 km East of Detroit, along the trans Canada Highway (Hwy 401), and boasts an international airport (YXU), serviced by two daily United Airlines' flights from Chicago. Air Canada (via Air Jazz) operates several daily flights between Toronto and London, while WestJet has direct flights from Calgary.

Excursions to Niagara Falls, and a winery tour are being planned.

The organizing committee is made up of: Mark A. Bernards, Committee Chair, (University of Western Ontario), John T. Arnason (University of Ottawa), Charles Cantrell (USDA, ARS), Vincenzo DeLuca (Brock University), Mark R. Gijzen (Agriculture & Agri-Food Canada), Toni Kutchan (Donald Danforth Centre), and Cecilia McIntosh (East Tennessee State University)

See you in London!

University of Western Ontario (www.uwo.ca)
Department of Biology (www.uwo.ca/biology/)
City of London (<http://www.londontourism.ca/>)
Tourism Ontario (www.ontariotravel.net)

... continues from page 1

The 50th anniversary meeting set a record for student and postdoc travel support and for poster participation and awards. Norman Lewis obtained funding from the U.S. Department of Energy which helped with travel support for 10 students and postdocs and I was able to obtain funding from the U.S. National Science Foundation to provide support for 19 undergraduate students, graduate student, and pre-tenure women Ph.D.'s. These grants, added to the travel funds that the PSNA contributes each year to students through the Loewus Travel Grants and to postdoctoral researchers, meant that a record number of early career folks were able to attend the conference. These awards, added to the poster presentation awards, Neish Young Investigator Awards, Phytochemistry Pioneer awards, and PSNA Lifetime award resulted in 50 awards being presented at the annual banquet!

We heard many excellent talks and viewed many excellent posters. The Neish Young Investigator symposia were excellent and we want to thank all speakers for their contributions. We also want to thank the Young Members Committee for hosting two professional development lunches, "Finding a Graduate Program" and "Grantsmanship". The session on "Grantsmanship" was especially well-attended and we want to thank all panel members and participants. Special thanks also to

Dr. Wendy Boss, MCB Program Director at the U.S. National Science Foundation for a special session on "Funding Opportunities for International Collaborations".

This newsletter is filled with wonderful details and photos from the 50th anniversary meeting. Plans for the 2012 meeting are well underway. Be sure to save the dates and make plans to attend the 2012 meeting in London, Ontario, Canada (see notice in the newsletter) and be sure to keep your eye open for upcoming email notices.

One of the things we will be doing this next year is working on an **electronic membership directory**. You can help us by going online to update your contact information by going to this website: http://psna.uhhconferencecenter.com/?page_id=878.

One of the better features will be to include information on your research interests. We will include that information as a way to help everyone be able to easily find those with similar research interests and to help facilitate contacting potential collaborators. Please see the attached form and return to the treasurer, Daniel Owens, either by snail mail or by email (his address is on page 2 of this newsletter) if you have not already done so. Thank you!

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PSNA Business Meeting

Dec 14, 2011
Cecilia McIntosh

The PSNA members business meeting was called to order by President Charles Cantrell on December 14, 2011 at 5:15 pm. Dr. Cantrell reported on attendance at the Executive Committee meeting held on December 10, 2011 (Cantrell, Gang (editor-in-chief of RAP), and McIntosh were present, Owens was present to report on Young Members Committee and to represent treasurer Dayan, Fred Stevens and Toni Kutchan were present by invitation; Secretary Pedras was absent) and on topics discussed at the meeting: current meeting issues (awards, judges, banquet agenda, finances/grants), the Recent Advances in Phytochemistry Series, Treasurers report, treasurer and secretary elections, website, newsletters, and future meetings. Reports on each topic are included in the minutes of the business meeting.

Results of the election for vice president were announced and Toni Kutchan will serve as vice president starting at the close of the business meeting. She will assume the presidency at the close of the members' business meeting at the 2012 conference in London, Ontario. Having only one nominee each for treasurer and secretary, McIntosh made a motion to accept the nominees by acclamation. The motion was seconded



Past-President Charles Cantrell



President Cecilia McIntosh



President-Elect Toni Kutchan

by Sanja Roje and received unanimous support of all members in attendance. New treasurer is Daniel Owens and new secretary is Eric Johnson.

In the absence of Franck Dayan, Daniel Owens gave the treasurer's daniel.owens@ars.usda.gov or Celia McIntosh at mcintosc@etsu.edu.

In absence of Mark Berhow, Charles Cantrell gave the Website Committee report. The committee is composed of Mark Berhow (chair) and Desmond Slade. The committee is very responsive to updates, job postings, etc. The committee asks members to contact Mark immediately at mark.berhow@ars.usda.gov if they have something to post, see something that needs updating, or find an error.

Newsletter Committee is chaired by the Society Secretary. Other members are Mark Berhow, David Schulz, Daniel Cook, and Jack Blount. The calendar for newsletter release was discussed at length at the executive committee meeting and the executive committee recommended that newsletter "publication" dates for 2012 be January 30, May 1, September 15, and December 15. There was consensus that this was a good schedule and accommodated timely reporting from the 50th anniversary conference as well as the 2012 conference. Celia McIntosh stated her intention to include update articles on past Neish Young Investigator awardees in future newsletters.

David Gang reported for the Awards and Recognition Committee. Celia McIntosh also serves on that committee. Thanks to conference grants obtain by Norman Lewis from the U.S. Department of Energy and by Celia McIntosh from the U.S. National Science Foundation added to the PSNA Loewus Student Travel Awards and the PSNA postdoc travel awards, a record of nearly 40 travel awards for undergraduate students, graduate students,

postdocs, and pre-tenure women were awarded this year! Charles Cantrell reported on a grant he has pending that, if funded, may result in opportunity for additional travel reimbursements. Due to the large number of posters in the best poster competition this year (over 80), the committee established 4 divisions and 6 awards: undergraduate (1 award), master's students (1 award), doctoral students (2 awards), and postdoctoral researchers (2 awards). The committee experimented with a new judging rubric this year and it was very successful. The committee stated their thanks to the large number of anonymous judges that donated their time to this important professional development opportunity. David also asked that the committee be expanded to 4-5 members in order to facilitate the judging process at the meetings. Sanja Roje and Toni Kutchan volunteered to serve on the committee. David also reported on the selection of Neish Young Investigator awardees for this year (Albena T. Dinkova-Kostova, Adrian D. Hegeman, Mi Kwon, and Aruna Kilaru). The committee will also be making a prestigious Life Member Award at the banquet, but the name was not given so that the recipient could be surprised.

The Proceedings and Publications Committee is chaired by Editor-in-Chief David Gang and members are Mark Bernards, Laurence Davin, Reinhard Jetter, Susan McCormick, and Fred Stevens. David reported on delays in publication of Volume 42 and stated that this volume would be going to the publisher by the end of January 2012. This committee is having a lunch meeting on December 15 to discuss volume 43 and timeline to reach publisher for timely publication and distribution. It will also discuss strategies for future volumes, rotating committee membership, etc.

Norman Lewis gave a brief re-

port on the current 50th Anniversary meeting in Hawaii which set an attendance record for the Society, with nearly 500 in attendance. He stated thanks to the local hosts and the team from the University of Hilo Conference Center, led by Judith Fox-Goldstein. A full reporting on the conference will be ready on the usual calendar of 2-4 months after the end of the conference. The members at the meeting thanked Norman for chairing the organizing committee and scientific committee for this conference.

Celia McIntosh and Toni Kutchan reported briefly that they were in discussions with Tom Clark from Elsevier, who attended the conference, regarding potential mechanisms to strengthen and formalize the interactions between the PSNA and Elsevier and to increase the visibility of this relationship. They will keep the executive committee updated as these discussions progress.

Future meeting sites and options were presented. They are:

2012 – London, Ontario (Organizing Chair, Mark Bernards)

2013 – Corvallis, Oregon (Organizing Co-Chairs, Fred Stevens and Toni Kutchan)

2014 – possible joint meeting, in discussion, more details soon

2015 – PSNA/Am. Soc. Pharmacognosy joint meeting (in discussions with Barbara Timmermann)

2016 – possible North Carolina

Mark Bernards made a brief presentation of plans for the 2012 conference in London, Ontario. Everyone should save the dates of August 11-15, 2012! (Please see elsewhere in this newsletter for more information).

As there was no further business, Charles Cantrell welcomed Celia McIntosh as the current PSNA president and assumed the role of past-president. Per the Society by-laws, Celia will preside over the 2011 banquet. The meeting was adjourned.

2011 PSNA Neish Award winners



Albena Dinkova-Kostova obtained her PhD in Biochemistry in 1996 from Washington State University under the mentorship of Professor Norman Lewis. Her doctoral work was directed towards purification and characterization of enzymes of the phenylpropanoid pathway. During that time she became intrigued by the fact that plant phenylpropanoids, some of which (podophyllotoxin and the semi-synthetic etoposide/tenoposide) are used in cancer chemotherapy; others (nordihydroguaiaretic acid) are potent antioxidants, are also inducers of anticarcinogenic enzymes, as shown by Professor Paul Talalay at Johns Hopkins. She joined his laboratory where she became interested in chemoprevention by chemical and dietary induction of cytoprotective proteins. While remaining part-time faculty member of the Dept. of Pharmacology and Molecular Sciences at Johns Hopkins, since 2007 Albena holds a position

of Lecturer and Research Councils UK Academic Fellow at the Medical Research Institute, Univ. Dundee, Scotland. Her work on the mechanism of induction of cytoprotective proteins (through the Keap1/Nrf2/ARE pathway) and the chemistry of inducers has been published in many journals, including *Biochemistry*, *PNAS*, *Chem. Biol.*, *J. Biol. Chem.*, *J. Med. Chem.*, *Chem. Res. Toxicol.*, *Cancer Prev. Res.* and *Methods Enzymol.*. It has been highlighted in commentaries and attracted more than 2000 citations; one paper was featured on the American Chemical Society Publications website as being in the top 1% of the most-cited papers during the past 10 years.



Mi Kwon, Research Professor, College of Life Science and Biotechnology at Korea University, South Korea. She completed her B.S. in Forest Product Technology in 1991, her M.S. in wood anatomy in 1993, at Seoul National University, and her Ph.D. (Plant Physiology Program) under supervision of Prof. Norman G. Lewis at Washington State University in 2000, and post-doctoral studies with Prof. Nicki Engeseth at University of Illinois Urbana-Champaign (2001-2002), and Prof. Sung-hwa Choe (2002-2006) at Seoul

National University. Her research interests are in tree growth and development, with special emphasis on molecular control of secondary cell wall biosynthesis during xylem formation in woody plants. She served as an Adjunct Research Scientist in the division of Forest Biotechnology at Korea Forest Research Institute from 2009. She is a recipient of the Future Scientist & Best Article Award (2007) from the Botanical Society of Korea.



Aruna Kilaru is Assistant Professor, Department of Biological Sciences at East Tennessee State University, USA. She completed her B.Sc. in Biology and Chemistry at Andhra University, India in 1991, and her M.Sc. in Biotechnology at Maharaja Sayajirao University, India in 1993. She earned her Ph.D. in Environmental and Evolutionary Biology, from the University of Louisiana at Lafayette, USA in 2005, under the guidance of Prof. Karl Hasenstein. Dr. Kilaru pursued post-doctoral studies with Prof. Kent Chapman at University of North Texas (2005-09) and Prof. John Ohlrogge at Michigan State University (2009-11). Her research interests are in plant biochemistry and physiology, with particular emphasis on lipid synthesis and signaling. Specifically, she continues to unravel the metabolic pathway of N-acylethanolamines, a class of bioactive lipids, in plants. Dr. Kilaru also

has ongoing research to understand the regulation of triacylglycerol biosynthesis in non-seed tissues. Her work was published in high impact journals including PNAS, Plant Cell, JBC, Plant Journal, among others. As a graduate student and postdoctoral fellow, Aruna received various honors and travel awards to present her research. Dr. Kilaru is an active member of the American Society of Plant Biologists, Sigma Xi, and Association for Women in Science, in addition to the Phytochemical Society of North America.



Adrian D. Hegeman is an Assistant Professor in the Microbial and Plant Genomics Institute at the University of Minnesota Twin Cities with appointments in the Departments of Horticultural Science and Plant Biology. He received his B.A. in Biochemistry from Oberlin College in 1992, and completed his Ph.D. in Biochemistry from the University of Wisconsin-Madison in the laboratory of Perry A. Frey in 2001 studying the structure and function of the enzyme of dTDP-glucose 4,6-dehydratase. He then continued his post-doctoral studies at the University of Wisconsin in the laboratory of Michael R. Sussman using mass spectrometry-based proteomics and metabolomics (2002-2007). Dur-

ing his postdoc Adrian co-authored a textbook with his graduate advisor (Frey) titled: *Enzymatic Reaction Mechanisms* (Oxford, 2007). He has held his appointment at the University of Minnesota since 2007 studying plant metabolomics and the use of stable isotopes and mass spectrometry for methodological innovations. Other projects include: exploring the botanical origins of propolis collected by honey bees, examining the mechanistic enzymology of plant hormone (auxin) biosynthesis, measuring bioactive constituents of kava ('awa; *Piper methysticum*), and prospecting for antimicrobial and antioxidant compounds in native and naturalized prairie plants to use as preservatives in cosmetics.





The 50th Anniversary Meeting of the Phytochemical Society of North America was held December 10 – 15, 2011 on the Kohala Coast of Hawai'i's Big Island, at the Fairmont Orchid, Hawai'i. A first-rate scientific program consisted of thirteen general symposia were held on the following topics

- 50 years of PSNA
- Metabolism & Metabolomics
- Natural Products in Agriculture
- Transcriptome Profiling
- Chemoprevention
- Phytomedicine
- Phytochemistry
- Biodiversity
- Biosynthesis
- New Characterization Methods
- Natural Product Drug Discovery
- Biofuels/Bioproducts & Bioengineering
- Medicinal Plants
- Botanicals (Dietary Supplements)

Organizing Committee

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Director
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Washington State University

John M. Pezzuto, Ph.D.

Local Host
Professor and Dean
College of Pharmacy
University of Hawai'i at Hilo

Charles L. Cantrell, Ph.D.

PSNA President
National Center for Natural
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USDA-ARS

Cecilia A. McIntosh, Ph.D.

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East Tennessee State University

David R. Gang, Ph.D.

PSNA Past-President
Associate Professor and Fellow
Institute of Biological Chemistry
Washington State University



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John Thor Arnason, Ph.D.
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Judith Fox-Goldstein, CFEE
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Hermann Stuppner
Toshiaki Umezawa
Robert Verpoorte



Photos by Lawrence Davin

Norman Lewis, John Pezzuto and William Kenoi, Mayor of Hawaii



Phytochemical Society of North America
50th Anniversary Meeting
December 10-15, 2011 on Kohala Coast, Hawai'i



Dr. Eric Conn, Phytochemical Pioneer Award Honoree



The Attendees of the 50th Anniversary Meeting the Phytochemical Society of North America



HRH Princess Chulabhorn Mahidol



Grantsmanship Workshop



National Science Foundation Travel Award Winners: (not in order of photograph) Julie Adrian, Aruna Kilaru, Amy Keller, Li Shen, Ivette Guzman, Brittany Graf, Debora Esposito, Deborah Hayford, Jessica Citronberg, Kehau Hagiwara, Rhodesia Celoy, Sarah Brewer, Tonibelle N. Gatbonton-Schwager, Alexander W. Chassy, Patricio Rojas-Silva, Rocky Graziose, Ryne Ramaker, Anye Wamucho



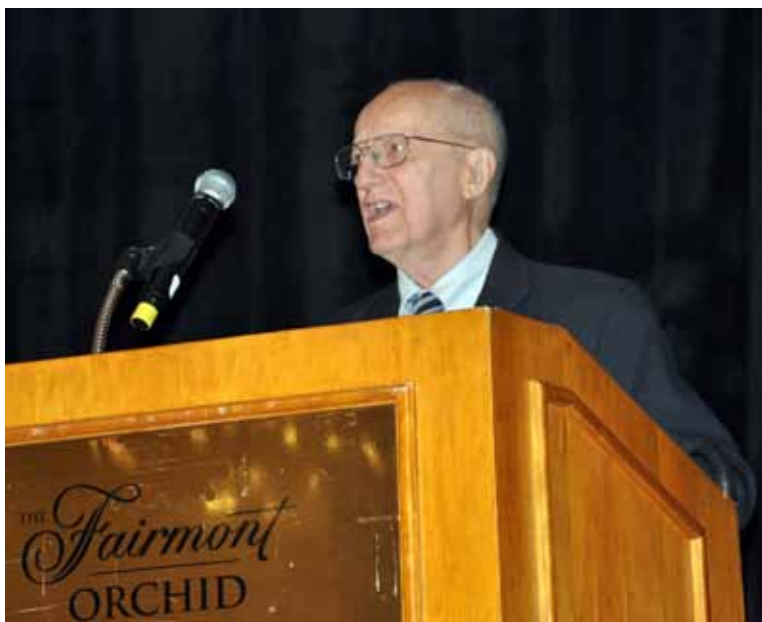
Department of Energy Travel Award Winners (Not in order of photograph) Dong Sik Yang, Vaishali Sharma, Samuel Lopez-Nieves, Trevor H. Yeats, Anna Berim, Claudia Cardenas, Hong Yang, Mahmoud Gargouri, Kim Hixson, Alan Budgeon



Frank and Mary Loewus PSNA Travel Award Winners (not in order of photograph)
Student Travel Awards: Chih-Chun Wen, Ryuta Inagaki, Catherine Tunbridge, Carolina Cieniak, Chieu Anh Ta,
Chike Azike, Trinh-Don Nguyen, Scott C. Farrow, Teagen Quilichini, João Marcos Batista
PSNA Post-doctoral Travel Awards: Dovi Kelman, Daniel Owens



Best Poster Award Winners



To Our Friends in the PSNA;
Eric Conn

It's been an enjoyable and busy year for all three of us. For example we've just returned at 1:00 AM yesterday from the big island, Hawaii, where I attended the 50th anniversary of the formation of the Phytochemical Society of North America (PSNA). I was one of the early presidents and was invited to attend and give a short talk on the formation of the society. One of my former post-docs, Dr. Birger Moller, was there from Copenhagen with several of his post-docs. There were a few people who had taken courses from me years ago when I was teaching. Also, a good friend, Nick Amrhine, was there from Germany.

It was very pleasant to be in Hawaii again as I enjoyed the warm, tropical weather. Davis winters are not my favorite time of year. I really notice the cold now, although our minimum temperatures are seldom below 30 degrees at night, but also don't go much above the 70s during the days.

I also had a professional meeting in Minneapolis in early August that the three of us attended, the American Society of Plant Biology. Another of my former post-docs, Dr. Bi-

jay Singh, had collected something over \$50,000 from former students and colleagues to establish the E. E. Conn Young Investigator Award. This is now an annual award that is given to a young person for purposes such as travel to the meeting or even to use in laboratory work. I wanted to meet Dr. Hiroshi Maeda, the first recipient of the prize and was able to do so. He received his Ph. D. at Purdue and has now been appointed as an Assistant Professor at the University of Wisconsin. There was a reception and a couple of parties that we attended, and then Kevin returned to Davis, as summer is always a busy time for him. Mike and I stayed through the meeting and enjoyed having dinners with former students and friends, including Steve Saupe and his family.

When the meeting finished, Mike and I flew to Santa Fe for a week of opera. We were met there by our good friend Edith Lees who has come over from Sydney almost annually for many years. This year we saw "The Pearl Fishers", "La Boheme", "Faust", "Wozzeck" and "Griselda" After the operas finished, the three of us flew back to Davis, and did another very interesting thing. Edith had arranged for tickets to a wonderful exhibit of French

Impressionists at the San Francisco Museum of Modern Art while still in Australia, and we had to be there at a specific time on a specific day, as crowds were expected. Since I don't drive into the Bay area any more, we took Amtrak from Davis to Richmond, transferred to the subway system (BART) and got off just three blocks from the museum. We spent several hours there seeing masterpieces by Cezanne, Bonnard, Denis, Gris, Laurencin, Picasso, Le Corbusier, Manet, Matisse and others, After a bite to eat at the museums café, we headed back to Davis, getting home about 9:00 PM,

With our best wishes for 2012,.





Arthur Neish Award Winners



Richard Hemingway, Phytochemical Pioneer Award Honoree



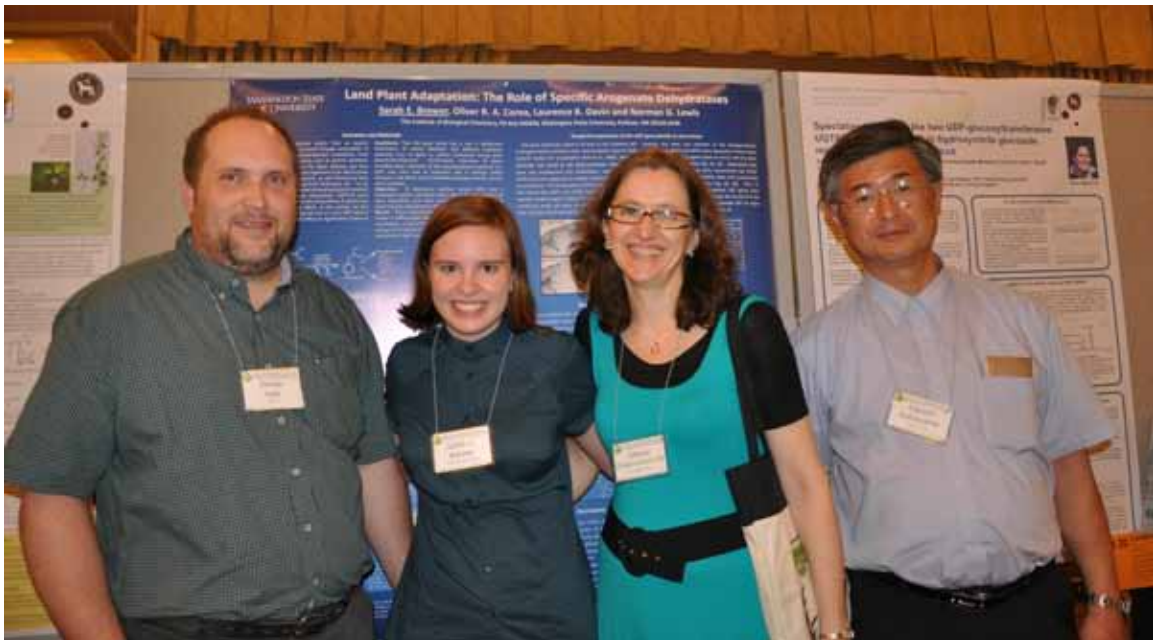
Judith Fox-Goldstein and John Pezzuto



Joaquim Marques, Alan Budgeon, Norman Lewis, Daniel Vassao, Massuo Kato, Mark Bernards, Nidia Yoshida, Laurence Davin, Hong Yang, Kim Hixson, Sarah Brewer, Claudia Cardenas, Lydia Yamaguchi, Kye-won Kim, Steven Halls and David Gang



Kim Hixson, Soheil Mahmoud, Hong Yang, Lydia Yamaguchi, Massuo Kato, Norman Lewis, John Pezzuto, Jane Ward, Kye-won Kim, James McChesney, Toshiaki Umezawa, Alan Budgeon, Michael Beale, Sarah Brewer, Claudia Cardenas, Nidia Yoshida, Daniel Vassao, Norberto Peoporine Lopes, Joaquim Marques, and Nicholas Smirnoff



Steven Halls, Sarah Brewer, Albena Dinkova-Kostova, Takeshi Katayama

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Société Phytochimique de L'Amérique du Nord

New Member Application Form

Please fill in the following application and return to the Treasurer with your dues payment. Once your application has been processed, you will receive newsletters and special mailings. You are also eligible for PSNA member discounts on the Recent Advances in Phytochemistry series (See Website).

Payments should be made by one of the following: check drawn on a US checking account, US travelers check, or US money order, International Money Order, Credit Card on the PSNA Website or Paypal payment to psnatreasurer@yahoo.com. Please make check or money order payable to the Phytochemical Society of North America.

We would appreciate it if you would also enter your contact information for the PSNA membership at: http://psna.uhhconferencecenter.com/?page_id=878

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PSNA News

Phytochemical Society of North America
Sociedad Fitoquímica de América del Norte
Société Phytochimique de L'Amérique du Nord

Volume 50, Number 2

June 2012

From the President: June 2012



We are looking forward to our next annual conference on August 11-15, 2012 at the University of Western Ontario, London, ON, Canada. The conference starts with a welcome reception on August 11 and I look forward to seeing everyone there! More detailed information can be found in the newsletter and on the conference website http://www.uwo.ca/biology/PSNA_2012/. Registration is still open!

We are extremely pleased to announce a new research grant program open to PSNA members. At our 50th Anniversary conference, Vice President Toni Kutchan and I had some very fruitful discussions with Tom Clarke from Elsevier. We continued those conversations with Joy Ideler from Elsevier and the result is the “Phytochemistry/PSNA Young Investigator Research

Grant Award”. We sent an email blast out to all current members:

“The Phytochemical Society of North America is pleased to announce the inaugural “Phytochemistry/PSNA Young Investigator Research Grant Award”, sponsored by Elsevier, to be presented annually to a dynamic young scientist within ten years of receiving their doctoral degree and currently leading an independent research program in the broader areas of phytochemistry at a university, or at a government- or not-for-profit research institute. Research award amount is \$10,000 US. Applicants must be a current PSNA member to be eligible. Applications should include a cover letter, CV, four-page research plan, budget, one-page budget justification, and three letters of recommendation. Submit electronic applications to Cecilia McIntosh, President of the PSNA (mcintosc@etsu.edu) by July 1, 2012.”

Note that this is open to any PSNA member that meets the criteria; country of residence is not a factor. Applications must be in Eng-

lish, however. Announcement of the inaugural award will be made at the 51st Annual meeting in London, Ontario. Funds will be disbursed in 2013.

This partnership with “Phytochemistry” and Elsevier is most welcome. PSNA members serve on the editorial board of the journal, as ad hoc reviewers, and as authors submitting manuscripts for publication in this high-impact journal. We are excited for this opportunity and for the continued tradition of mentoring and supporting the scientific and career development of new scientists in the field.

See you in London!

Celia

Cecilia McIntosh, President



In this issue: Dr. Richard Hemmingway, 2012 PSNA Phytochemical Pioneer, PSNA Pioneer Awardee Helen Stafford's gift to Reed College

The web PDF version can be downloaded from the website: www.pсна-online.org.



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The Phytochemical Society of North America

The Phytochemical Society of North America (PSNA) is a nonprofit scientific organization whose membership is open to anyone with an interest in phytochemistry and the role of plant substances in related fields. Annual membership dues are U.S. \$60 for regular members and \$30 for student members. Annual meetings featuring symposium topics of current interest and contributed papers by conference participants are held throughout the United States, Canada, and Mexico. PSNA meetings provide participants with exposure to the cutting-edge research of prominent international scientists, but are still small enough to offer informality and intimacy that are conducive to the exchange of ideas. This newsletter is circulated to members to keep them informed of upcoming meetings and developments within the society, and to provide a forum for the exchange of information and ideas. If you would like additional information about the PSNA, or if you have material that you would like included in the newsletter, please contact the PSNA Secretary or visit our website at www.pсна-online.org. Annual dues and changes of address should be sent to the PSNA Treasurer. Also check the PSNA website for regular updates.

The PSNA is an all volunteer organization which depends on its membership to run the organization. We appreciate the time and effort these volunteers are putting in to keep the organization up and running. As a member, please consider volunteering to serve on one of these committees. The PSNA can always use more help!

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51st Annual Meeting of the Phytochemical Society of North America

August 11-15, 2012



PSNA 2012 is Only Two Months Away!

Planning for PSNA 2012, (August 11-15, 2012, in London Ontario, Canada) is well under way. We are now within two months of the start, but there is still time to register and submit an abstract. The deadline for early bird registration and abstract submission is June 30. Abstracts received by the end of June will be published in the journal *Pharmaceutical Biology*.

Please visit www.uwo.ca/biology/PSNA_2012 for full conference registration and abstract submission information.

In addition to two Arthur C. Niesh Young Investigators, we have arranged fourteen invited speakers in five separate symposia. There is space in the program for an additional 32 oral presentations (to be selected from submitted abstract), as well as unlimited space for poster presentations. Symposia will cover five broad areas of interest to phytochemists, and include a great cast of invited speakers. Symposia and confirmed speakers include:

Neish Investigators: Dr. Mark Sumara, Agriculture and Agri-Food Canada, London ON, and Dr. Daniel

Cook, USDA ARS Poisonous Plant Research Laboratory, Logan, UT

Symposium I Biosynthesis & Metabolism, featuring Dr. Argelia Lorence, Metabolic Engineering, Arkansas State University, and Dr. Kevin Walker, Chemistry/Biochemistry & Molecular Biology, Michigan State University.

Symposium II Genomics & Bioinformatics, featuring Dr. Anne Osbourn, John Innes Centre, Norwich Research Park, UK and Dr. Daniel Kliebenstein, Department of Plant Sciences, University of California Davis

Symposium III Botanicals & Medicinals, featuring Dr. Ilya Raskin, Global Institute for BioExploration, Rutgers University and Paula Brown, BC Institute of Technology, Vancouver, BC.

Symposium IV Bioproducts From Canadian Forests; Production of Valued Attributes, featuring Dr. John Thor Arnason, Department of Biology University of Ottawa, Ottawa, ON, Dr. Franco Berruti, Department of Chemical and Biochemical Engi-

neering, Western University, London, ON, Dr. Emma R. Master, Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Dr. Art J. Ragauskas, School of Chemistry and Biochemistry, Institute of Paper Science and Technology at Georgia Institute of Technology, Atlanta, GA, and Tom Rosser, Assistant Deputy Minister, Canadian Forest Centre, Ministry of Natural Resources, Government of Canada, Ottawa, ON.

Symposium V Phytochemicals in the Interaction Between Plants and their Environment, featuring Dr. Dorothea Tholl, Department of Biological Sciences, Virginia Polytechnic Institute and Dr. Jim Tokuhisa, Department of Horticulture, Virginia Polytechnic Institute.

We hope to see you in London (Ontario) in August!

Conference sponsors include Natural Resources Canada, the American Chemical Society (*Journal of Natural Products*), Western University and the Faculty of Science (Western University). Free advertising has been provided, in part, by Elsevier (*Phytochemistry*).

Richard W. Hemingway

An Autobiography
Pioneer Scientist Awardee at the
50th PSNA meeting, 12/2011.

This biographical note is offered as a summary of my memories of the many people and places that were important in trying to do some science over a span of more than 50 years. I hope this biography will give the vibrant group of young scientists that attended the 50th Annual PSNA Meeting in Hawaii a stimulus to keep working to advance our knowledge of plants. Above all, I hope that they can make journeys in their life in science similar to those I have enjoyed in so many interesting places with so many good friends.



A view of Crater Lake National Park about 2 hours drive south of Bend.

I grew up in Bend, Oregon, the son of Dr. Max and Helen Hemingway. In my formative years during WW2, Dr. Max was in France and later in the South Pacific managing hospitals. My mom tried to manage my sister Kris and me over those war years.

With beautiful views of the Cascades and a short drive to the High Desert, Bend was a wonderful place to grow up. I love the mountains and desert equally. Even as a young boy, my questions about what made different plants different worked on my mind. Goodness knows, we had a vast array of different plants in the Bend

area. My dad did everything possible to make up for the years of absence during WWII. He included me in a wide range of hunting (mostly for quail, ducks, and pheasants) and fishing trips. We went to the Mink Lake Basin on the Cascade Summit for trout and other times to British Columbia for salmon.



A view of the Cascades from Highway 20 just west of Bend



Our 50+ yr old cabin used for deer hunting.



The headwaters of the Metolius River.

As a teenager, I was blessed to have a series of summer jobs, mostly working for Hans C. Milius who was in charge of Forestry for Brooks Scanlon, Inc. He gave me experiences in marking timber to cut from company lands and cruising marked timber offered for sale on Forest Service land. I also had a summer or two helping with forest road building, pulling up rail tracks when they changed to all trucking, and even chipping scale off the inside of boilers used to gen-

erate steam and electricity.

When I was 71, Helen and I went up the same road we built 50 years ago when I worked for Brooks Scanlon.



Mt. Washington viewed from Cache Mt.

That reminded me of landing on the back of a sleeping black bear while setting cut and fill stakes to make the road. The summer between my junior and senior years of high school, my parents were building a new home in Bend and I made my first business: Hem's Dirt Co. I also met Helen Dyer, the girl that became my partner and wife for more than 50 years. She liked dancing at real western "honky tonks" but also was very serious in making me pay attention to learning something useful. I studied Forestry at Oregon State in Corvallis starting in the fall of 1957. A year later Helen went to U. of Oregon in Eugene to study English.

Thank goodness it was only about 60 miles between Corvallis and Eugene.



Richard and Helen together at a party in Eugene before we married.

When we married, we had nearly two more years of undergrad school to do. We first rented a tiny house near campus and then moved to a real log cabin out on Soap Creek adjacent to OSU's McDonald Forest which Dale's dad gave us rent free. He also gave us a pickup if we would look after his property. That was an ideal life. I could catch a few trout for dinner most evenings and made a 4.0 in the most challenging set of classes I ever had. Helen and I were in heaven. Helen pushed me to go to graduate school. We decided to go to U of Michigan in the fall. She was going to have our first daughter Margaret in the summer.



Margaret Irene

We drove from Bend to Ann Arbor, Michigan with our one month old baby, Maggi. I booked my classes and we got student housing to start a new life. Helen got a job working for the geology department.



School of Natural Resources, U of Michigan.

At the end of our second year at Ann Arbor, Claire was born. Our daughters added much to our lives, still do.



Claire Allison

I got my MSc, and started work on a PhD under Dr. Everett Ellis. About a year after that, the University announced that our department would be closed and all the Profs in that Dept. started looking for new jobs. Dr. Ellis went to Oregon State University and, after much debate, I decided to stay at Ann Arbor and work under Dr. Allan Mara. This gave me the opportunity to change my thesis topic to an analysis of the thermal instability of fats relative to the surface wettability of yellow birch wood, a topic that really excited me.

The last three years at Ann Arbor were not fun but we bulldozed through it. I ended up being the last graduate student in residence in our department. All faculty was racing to find new jobs. Both Walt and Andy, my fellow PhD candidates, were delayed for years before they finally got their PhDs.

While doing my thesis research, I found a new book "Wood Extractives" edited by Dr. W.E. (Ted) Hillis at the Forest Products Division of CSIRO in Melbourne Australia. A fellow in our married student housing unit encouraged me to write to Dr. Hillis inquiring about the possibility of a post-doc with him. Dr. Hillis suggested I come for two years, I passed my final defense, and we were on our way to Melbourne following Christmas with our family in Bend.



My family getting ready to go to Australia.

The research environment at the Forest Products Division of CSIRO was just wonderful in the first few years. I stayed on for what ended up as five years. Sadly, in my fourth year, the Forest Products Division was closed with about half of the people including Dr. Hillis' people going to Building Research and the pulp and paper people in Dr. Higgins' group to the Chemistry Division. Looking back at my 50 years of life in research, the years I enjoyed in Melbourne at the CSIRO were truly the very best. We worked and played hard. I learned so much from my colleagues.

George Davies was a great friend. We enjoyed many a counter lunch and horse race together, including the Melbourne Cup and even better country races such as Murtoa and Great Western where George was either a handicapper or an announcer. I think he ended up a handicapper for the Victoria Racing Commission, a very high honor.

We also became good friends with the families of Dr. Louis Shain (from Pennsylvania) and Dr. Graham McKay (from Scotland). A part of our friendship came from our strong interest in fishing for trout and camping in the bush. To our surprise, there was very good trout fishing at Lake Eildon in Victoria and especially at Lake Eucumbene, a longer drive to the Snowy Mountains. Surprisingly few Australians had interest in trout fishing.



Lake Eucumbene was great trout fishing.

We loaded up our little Morris 1100 with all our camping gear on top and went to Surfers Paradise in Queensland. There we had to survive a bad typhoon – called a hurricane in Louisiana.



Our camp at Surfers Paradise

One of our most favorite places was an old aboriginal campground called Mootwin- gee out in the desert by Broken Hill. The cave paintings and rock engravings were beautiful.



An aboriginal cave painting.

We did get some science done too. Even today after nearly 40 years we still have good contact with Adrian Wallis and Andrew Rozsa. It was really difficult to find a job back in the US. I finally was accepted for two interviews back in the USA. I accepted a job with the USDA Forest Service working for Dr. Peter Koch

at the Southern Research Station in Pineville, Louisiana. Dr. Koch was, I think, shocked when I told him that my main interest was to find a way to build a research initiative that I could call my own. I started with a completely empty lab space with no equipment. I now know how much Peter Koch changed my life. He was always in a hurry to find success but he had great patience with me.



Peter Koch Southern Research Station. Pineville.

I still remember the surprised look on Jack Rowe's face when I excitedly showed him the two Buchi rotary evaporators, a fume cupboard, and benches that I had installed in my lab space when he visited from the Forest Products Lab at Madison, Wisconsin. I will always remember the warm welcome that Jack gave to me as I started to build my research program.



At Jack Rowe's home with me, George Barton, Olaf Theander and Herb Hergert.

I got to develop a program focused on condensed tannins (proanthocyanidins) which was centered on partnerships with many scientists around the world. A important partner was Dr. Roland E. Kreibich who was the

retired manager of the Weyerhaeuser Co. chemistry group. We had a wonderful relationship after he retired.



My good friend and partner in science, Roland Kreibich.

Another good partner in my science was Fred Tobiason at Pacific Lutheran University in Tacoma, WA.



Fred and I enjoyed work together on many projects and are really good friends.

Going to Louisiana let me live in a rural environment with lots of forest and lakes. I tried to be a bird (quail) hunter. All the good bird dogs I ever owned, and there were many, came to me through my friend Lary Roton. My favorite dog is still Rusty, a Brittany who was really smart. I was lucky to have several nice English Setters including Graham shown below with Rusty as well as two really outstanding Pointers. I loved the discipline involved in quail hunting in Louisiana.



Rusty found a bird and is teaching Graham the setter to hold a bird on point.

I was also blessed to find a good partner Tee Clifford who loved bird hunting and we shared many years together hunting quail. Tee was mainly true to duck and goose hunting. Poppa Clifford (Tee's dad) had a wonderful blind at Fenton, Louisiana. We enjoyed many years of hunting ducks and geese together. I had found heaven in my recreation as well as at work.



Poppa Clifford with his retriever Queenie and me.

I thank Peter Koch for his patience in allowing me to spend a year working at the Chemistry Division of DSIR in Petone, New Zealand with Laurence Porter and Yeap Foo. I also spent some time working with Mike Henan an accomplished tramper getting me ready to take Helen on the Milford Track Freedom Walk. Yeap, Laurence, and I also were successful in proving the structure of three trimeric procyanidins and solved a big problem in measuring the molecular weight profiles of various tannin extracts.

After about 10 years on the bench and the retirement of Peter Koch, I became the Project Leader of our group in Pineville. I tried to make a difference to the successful management of Peter Koch. I pushed hard to get each scientist performing as a project manager and reaching for the best science. I think I made my goals. I continued that project management work for nearly 15 years. Our unit was highly rated and all scientists in the unit obtained funding from the USDA competitive grants.



Yeap Foo, a good partner from New Zealand.

I was granted another year to work as a visiting scientist at the University of the Free State, Bloemfontien South Africa to continue work with Jannie Steynberg for a year as a visiting scientist. The students and staff working under Prof. Daneel Ferreira were extremely patient to converse in English rather than their usual Afrikaans. I hope I make a number of good friends. It was my second time in Africa and I came at the time of transition to Nelson Mandela and the ANC.



A young Kudu bull surprising out in the open at Kruger Park.

I asked to step down as Project Leader after 15 years of management of our unit to be in a job as a senior scientist with only lab work to do. I was able to keep that position for another 5 years. Tim Rials took over the Project Leader position and he had us going to a strong position.

After a lot of commotion involving formation of a non-profit company, I finally was able to organize the 3rd Tannin Conference in Bend with Georg Gross and Takashi Yoshida. This became my most satisfying project. I thank Bennie Berke, a vis-

iting scientist from Bourdeaux, for all her help.



3rd Tannin Conference Organizers

My plan was to keep going for five more years when we would focus on what we might do to improve human health. I was intent on work related to the prospect that plant polyphenols were important to health. That did not match well with the Southern Station's research objectives. It was time for me to retire from the Forest Service after 30 years of service.



Dr. Wayne McGraw and I started our small business Plant Polyphenols LLC. This worked out well because we could rent lab space from Louisiana College and gain access to the best of their students.

I was surprised to be awarded the 4th Tannin Conference Award at the meeting in Philadelphia where Helen broke her foot.





4th Tannin Conference Award presented by Georg Gross, Herbert Kolodziej Takashi Yoshida, Daneel Feirera, and Rebecca Robbins.



Receiving the Pioneer Scientist Award.

Bio Prof Bequeaths Fortune to Reed

By Randall Barton on February 10, 2012 10:39 AM

Reed Magazine *Sallyportal*
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Your PSNA Pioneer Scientist Award was a great honor for me. I thank you for that. I can accept that honor so long as we all recognize the hard work of my many partners, most importantly Helen Hemingway who has been my best partner for more than 50 years.

I am still working on my recovery from heart by-pass surgery about seven years ago. I ride my stationary bike usually 50 miles a week and I am slowly getting better. We have a wonderful life in the home we built 16 years ago out on 9 acres of forest land with a lot of waterfront on Kincaid Lake. If you are brave, Helen will take you in her Kayak and you might find a nice alligator.

When President Colin Diver announced last week that Reed's Centennial Campaign had passed the \$185 million mark, he also revealed that the late Helen Stafford [biology 1954-87] had bequeathed an astonishing \$8 million to Reed in her will. The bulk of the gift will provide financial aid to students otherwise unable to attend Reed, and \$1 million will support the biology department.



Kincaid Lake.



Mesa Verde is beautiful.

When news of Prof. Stafford's gift reached her niece Anne Scarff in Amherst, Massachusetts, she was gobsmacked.

"We received a magnanimously generous gift from your aunt this week," we told her.

In our retirement, we have been making a lot of road trips especially to the SouthWest US National Parks which we both love. Helen does the driving and I usually enjoy the scenery unless we get too high in the mountain roads. Ever since Mike Henan took me on a mountain tramp in New Zealand where we had to crawl over about 200 feet on a very narrow ridge with the snow blowing up to us from 1,000 feet below, I have a serious fear of heights. The sights one can see in these parks made me overcome that fear.

I close this note with my memory of the many young scientists who attended the 50th Annual PSNA Meeting. Certainly, our science will grow. Just look at the young scientists who were honored at this meeting as highlighted in the last PSNA Newsletter. Do something fun every day.

"Oh, no kidding," she said. "What was that?"

"Her estate has provided a gift to Reed in excess of \$8 million."

"I'm sorry. I'm confused. Whose estate?"

rwhem@wildblue.net

"Helen's."



"Helen Stafford's?!!!! Eight million? Wow! ... I'm flabbergasted. I knew that Reed would inherit what she had. That was always understood. But I had no idea."

Born in 1922 to a wealthy Philadelphia mill owner and his wife, Helen was raised in a big house with servants. But when the stock market



crashed in 1929, Milton Stafford lost his fortune and Helen attended Wellesley on scholarship, working her way through college.

Her distinguished career began when Helen studied botany with geneticist Harriett Creighton at Wellesley. She worked as a research assistant at Cornell, then took a research position with Richard Goodwin at Connecticut College for Women. Goodwin persuaded the college to create a master's degree for Helen's groundbreaking thesis about the development of anatomical structures and the effect of light in timothy grass seedlings. The thesis was published in the *American Journal of Botany*, the first of her more than 70 publications.

Dr. Robert McNair Scott '61 met Helen when she was studying with David Goddard at the University of Pennsylvania. She had overcome prejudice to become the first woman to teach male botany students at the university and earned a PhD in 1951 for her discoveries about plant enzymes.

"When I was considering Reed," Robert remembers, "my mother said that David considered Helen Stafford one of his finest students. That was one of the things that drew me to Reed."

During his sophomore year, Robert worked for Helen as a teaching lab assistant.

"I learned more from her patient and enlightened teaching that year than I did in class," he said. "Helen was a quiet but inspiring person and a very fine teacher. She was an incredible woman who opened many doors, both to her students and to her gender."

It was while she was teaching at the University of Chicago that she came to the attention of Reed's biology faculty, and in particular Lewis Kleinholz [1946-1980] who recognized that the department would benefit from her exemplary teaching and research experience as well as her reputation for clear, thoughtful, innovative work.

In 1954, Helen accepted a position as Reed's sole biology professor specializing in botany and the only female faculty member in the sciences. She and her colleagues laid the groundwork for what became one of the top undergraduate biology programs in the U.S.

"Helen was very active in what we were trying to accomplish, which was to change the whole department and its approach to teaching," says Laurens Ruben [biology 1955-92]. "Most of our students were going on to graduate work and the program we were offering didn't create enough depth and or take sufficient advantage of scientific inquiry. We tried to take the best things of a graduate program and meld them with the best things of an undergraduate program."

Anne Wood Squier '60 taught labs for the biology department and worked for Helen one summer.

"Nothing got in the way of the absolute precision of her experimental methods and she had a passion for new knowledge," Anne says. "She found her niche at Reed where she

could teach bright students, and get a lot of satisfaction from pointing them down various pathways, and continue to do her work at a very high level.”

Anne and her husband, Professor Leslie Squier [psychology 1955-88], lived at the top of the canyon and often saw Helen walk past their driveway “first with Willie, a beautiful little sheltie, and then after he aged out with each dog that succeeded him.”

An automobile hit Willie, remembers Bert Brehm [biology 1962-93], and the dog limped around with his leg in a cast. “Years later, whenever Helen chastised the dog, Willie would limp in a bid for sympathy. Late in his life, Willie would forget which leg had actually been injured and variously, limped on different legs.”

Helen served as a role model both for the women who took her classes and those that followed her into the department as faculty.

“We all knew she was exceptional,” says Pamela Ronald ‘82. “At that time there were still very few women scientists, at least very few highly recognized scientists. She was the only woman in the department. So she was definitely a pioneer and we were really glad about that. We figured if she could do it well then why couldn’t we? Having women mentors meant a lot to us.”

Currently a professor of plant pathology at the University of California-Davis, Pamela remembers that Helen was both very reserved and focused. “But Helen was inspirational because she loved her work, and was interested in what her students were thinking about. She was one of those professors who really gripped my imagination and made me believe in the power of the individual, that one

person can make a difference.”

Living frugally, Helen endowed the \$1 million Morton O. Stafford Jr. scholarship at Reed in memory of her brother, who was killed in World War II. She savored her work and continued to advise thesis students four years after she retired from teaching at Reed in 1987.

Rae Gitzendanner ‘96 looked forward to her weekly meetings with Helen.

“She spoke with such passion. Discussing this thesis with someone as knowledgeable, enthusiastic and patient as Helen was definitely an unexpected reward. She provided an open and lively atmosphere where we could test out ideas.”

Now an environmental engineer in Gainesville, Florida, Rae had three areas in her thesis and while two were progressing, one floundered. Helen felt it was important that Rae enjoy her thesis experience and suggested they change the thesis goals. That which was not moving forward could be left behind and Rae would still learn from the other areas.

“She felt the important thing was to pursue what most interests and excites you--to pursue one’s strengths rather than continue to focus on one’s weaknesses,” Rae says.

In addition to being awarded a Guggenheim Fellowship at Harvard, an NSF senior postdoctoral fellowship at UCLA, and work on condensed tannins at the Oregon Graduate Center, Helen consistently broke new ground with her work on aromatic compounds, flavonoids, proanthocyanidins, and the particular compound plants used for defensive purposes and to make structural materials.

Some years after retiring from teaching, Helen was diagnosed with Alzheimer’s.

“The transition to Alzheimer’s was obviously very difficult, but she did it with that typical curiosity that she always had,” her niece, Anne, remembers. “She wanted to understand it and do what she could. I think she maintained that fine sense of curiosity right through this transition of immense loss intellectually.”

Mary Potts, who was employed as Helen’s caretaker for six and a half years, remembers visiting Reed’s campus with Helen and her faithful dog, Brownie.

“Reed was her life,” says Mary, “she just loved it and came in five days a week with Brownie to walk around campus. Helen never left the house without two things, her hat and Brownie. So many kids on campus knew Brownie by sight. They’d say ‘Hi, Brownie,’ and these were kids she hadn’t taught because by the time I got there she hadn’t been teaching for some time.

“We used to go to the college to collect her biology magazines. Physically the disease progresses little by little. Finally she told the secretary in the department not to set the magazines aside for her anymore, because she couldn’t comprehend what she was reading. She wanted to make sure that if they ever found something that would slow down the disease that she would take it. But that didn’t really happen.”

Helen’s legacy of scholarship, both as a teacher and in providing opportunities for future students to become Reedies, insures she will be remembered.

“Reed was everything to her,” Anne says. “I’m so delighted that she will

be a part of Reed's future; I just couldn't be happier. I almost wish it was known in her lifetime so she could enjoy some of the celebration. But that wasn't like her, she wasn't one to do that."

Following her wishes, Helen's ashes were scattered on the shore of Reed Lake near the blue bridge that she loved.

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Phytochemical Society of North America
Sociedad Fitoquímica de América del Norte
Société Phytochimique de L'Amérique du Nord

New Member Application Form

Please fill in the following application and return to the Treasurer with your dues payment. Once your application has been processed, you will receive newsletters and special mailings. You are also eligible for PSNA member discounts on the Recent Advances in Phytochemistry series (See Website).

Payments should be made by one of the following: check drawn on a US checking account, US travelers check, or US money order, International Money Order, Credit Card on the PSNA Website or Paypal payment to psnatreasurer@yahoo.com. Please make check or money order payable to the Phytochemical Society of North America.

We would appreciate it if you would also enter your contact information for the PSNA membership at: http://psna.uhhconferencecenter.com/?page_id=878

Credit Card Payment: Paying membership dues online via credit card has now been established. Please select the link from the PSNA homepage to pay by credit card. A paypal account is NOT required but will expedite the process. If using a paypal account, send directly to psnatreasurer@yahoo.com

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Dues schedule: Regular member - \$60.00 per year
 Student member - \$30.00 per year

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The PSNA homepage is now available at www.pсна-online.org



PSNA News

Phytochemical Society of North America
Sociedad Fitoquímica de América del Norte
Société Phytochimique de L'Amérique du Nord

Volume 50, Number 3

December 2012

From the President: November 2012

Toni Kutchan



We enjoyed another successful annual meeting in August 2012 (our 51st annual meeting as a society). This year's gathering took place on the lovely campus of the University of Western Ontario in London, hosted by Dr. Mark Bernards. The program included oral presentations selected from submitted abstracts, as well as young members invited as Arthur C. Neish Young Investigator contributors, and a poster session. We enjoyed invited lectures on the diverse topics of Biosynthesis & Metabolism from Dr. Argelia Lorraine of Arkansas State University and Dr. Kevin Walker of Michigan

State University; on Botanicals & Medicinals from Dr. Ilya Raskin from Rutgers University and Dr. Paula Brown from the BC Institute of Technology; on Genomics & Bioinformatics from Dr. Anne Osbourn of the John Innes Centre and Dr. Daniel Kliebenstein of the University of California Davis; for Phytochemicals In the Interaction Between Plants and their Environment, Dr. Dorothea Tholl and Dr. Jim Tokuhisa of Virginia Polytechnic Institute spoke; on the topic of Bioproducts From the Canadian Forests, Dr. John Thor Arnason from University of Ottawa, Dr. Franco Berruti of the Western University, Dr. Emma R. Master, University of Toronto and Dr. Tom Rosser of the ADM Canadian Forest Centre made presentations. The abstract book will be made available in electronic format online on the PSNA website (www.psna-online.org/).

We were particularly pleased to have made the inaugural presentation of the Phytochemistry/PSNA Young Investigator Research Grant (sponsored by Elsevier) to Dr. Aimee

Eggler of Villanova University for her work on 'Evaluating the mechanism by which phytochemicals activate cytoprotective/disease-preventive enzymes via Nrf2'. Dr. Eggler is Assistant Professor of Biochemistry within the Department of Chemistry. As she establishes her independent scientific research, we are pleased to be part of her exciting career path.

Also in London, we sought to revitalize the Young Members Committee. During one of two lunch discussions aimed at the many young members of our society who attended the meeting, Diana Roopchand of Rutgers University, Meg Haggitt of the University of Western Ontario and Allison Heskes of the University of Melbourne volunteered to be involved in helping with young member directed events at the PSNA 2013 meeting.

As we go forward together as a society in the coming year, I would like to emphasize the important role of the young members of our small, collegial group. It is of central im-

Continues on Page 3 ...



In this issue:

The 2012 PSNA Conference in London, Ontario

Phytochemical Pioneer Tom Maby

The web PDF version can be downloaded from the website: www.psna-online.org.



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The Phytochemical Society of North America

The Phytochemical Society of North America (PSNA) is a nonprofit scientific organization whose membership is open to anyone with an interest in phytochemistry and the role of plant substances in related fields. Annual membership dues are U.S. \$60 for regular members and \$30 for student members. Annual meetings featuring symposium topics of current interest and contributed papers by conference participants are held throughout the United States, Canada, and Mexico. PSNA meetings provide participants with exposure to the cutting-edge research of prominent international scientists, but are still small enough to offer informality and intimacy that are conducive to the exchange of ideas. This newsletter is circulated to members to keep them informed of upcoming meetings and developments within the society, and to provide a forum for the exchange of information and ideas. If you would like additional information about the PSNA, or if you have material that you would like included in the newsletter, please contact the PSNA Secretary or visit our website at www.pсна-online.org. Annual dues and changes of address should be sent to the PSNA Treasurer. Also check the PSNA website for regular updates.

The PSNA is an all volunteer organization which depends on its membership to run the organization. We appreciate the time and effort these volunteers are putting in to keep the organization up and running. As a member, please consider volunteering to serve on one of these committees. The PSNA can always use more help!

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President's Message Continued from page 1 ...

portance that we continue to provide an environment in which young scientists can reside and excel. We are asking the Young Members Committee to communicate to us the types of interactions and events that they would like to see at the 2013 meeting. We look to ways to keep the society vibrant as we head into the future, both with respect to defining the types of research that we support and to nurturing the young investigators in the broader areas of phytochemistry. As with all fields of science, phytochemistry must also evolve to meet societal needs and demands. I would like to include the general membership, but in particular the young members, in this timely discussion.

In final comments, Dr. Fred Stevens of Oregon State University in Corvallis was voted President-Elect at the 51st Meeting. He will assume position as President at the 52nd annual meeting that will take place in Corvallis, Oregon from August 3-7, 2013. Preparations for the 2013 meeting under Fred's leadership role are well underway. Check out the progress at www.psna2013.com as information becomes available online. Hope to see you in Corvallis next summer!

PSNA Executive Committee Meeting & Member Meeting Notes

Mark Berhow, acting Secretary
August 11, 2012
Western Ontario University

The Executive committee usually meets during the annual conference to discuss topics relevant to the running of the society. After getting an update on this year's meeting attendance and finances, the group dis-

cussed the following topics. These were also covered in the Members Meeting on Tuesday.

In general, the Hawaii meeting and the London meeting have covered their expenses. It is appreciated that both of the organizing committees did an excellent job in raising funds in addition to the conference fees to cover travel, awards, site fees, and food for these conferences.

The PSNA got a NSF grant for the Hawaii meeting to help cover travel expenses for students and post docs. The grant is pretty much a standing award, there is no deadline and the turn around time is one month from application to decision to award. If we do this for next year, we should get this done about 8 months ahead of time.

Committee membership was discussed, and a few were revised, especially the awards committee. The society relies on volunteer judges to help with the conference poster awards. A new PSNA-Elsevier research award was begun this year and will be administered by this committee. The committee will also oversee the Phytochemical Pioneer Awards and the Life Membership Awards. As neither of these were awarded this year, we will be seeking nominations for next year. The Neish Awards are generally taken care of by the meeting organizing committee, though nominations for Neish awardees can be sent to the Awards Committee members.

The Publications Committee noted that physical mail has become more difficult and expensive. There is no "mass mailing" method for foreign mail, each has to be individually stamped. Also a fairly large percentage is returned due to incorrect addresses or "no longer at this address." It has been decided to end

mailing a physical copy of the newsletter and distribute by email and posting on the website.

The website is our primary means of communicating with our membership and the rest of the scientific world. As such we need to try to improve its ability to capture the attention of the major search engines by adding a series of key words to the top of the index page. Also members are encouraged to submit job postings related to phytochemistry on the site. These will be posted for 6 months unless a extension is specifically requested.

The Executive committee had a long discussion on the future of our yearly Recent Advances in Phytochemistry reviews. It is clear that the PSNA needs to look at options for generating an income from a published journal, reviews, or books, as well as making sure the reviews have a significant impact factor in search databases. The executive committee is looking into collaborations with the Phytochemical Society of Europe and Elsevier, plus a few other options. The goal is to try to integrate our Annual PSNA meetings with a publication that will generate impact as well as income. This will be an ongoing discussion in the year ahead.

The treasurers report and updates on dues, membership were presented. The big item to note is that the PSNA tax exempt status has lapsed and needs to be reestablished. The Ex Comm has authorized the treasurer to hire a CPA to take care of this problem.

Future meetings committee will be revised on a yearly basis, and meetings need to be established as far out as possible. The 2013 meeting will be in Corvallis, Oregon at Oregon State University, the 2014, 2015, and

2016 meetings are being discussed. Joint meeting with the American Society of Pharmacology and other organizations should be carried out on a regular basis as long as the PSNA has significant presence in the program.

2012 Annual Meeting of the PSNA University of Western Ontario London, Ontario, Canada August 11 - 15



The University of Western Ontario



Niagara Falls



All Aboard!

The 2012 meeting of the PSNA was hosted by the University of Western Ontario and organized by Dr. Mark Bernards of the University's Biology Department. Mark and the scientific committee did a great job putting together an interesting and diverse speaker program, while the University's conference services did a superb job of taking care of the logistics, providing the food, lodging, and meeting facilities.

The campus of the University of Western Ontario is a beautiful location, with a wonderful central core of stone buildings. The talks and poster sessions were held in the

There was a great line up of invited speakers assembled for the 51st Annual Meeting of the Phytochemical Society of North America. Five symposia that largely defined the field of Phytochemistry were organized, with each one led by presentations from internationally recognized leaders. These included symposia on Biosynthesis & Metabolism, with featured talks on vitamin C by Argelia Lorence, and enzyme specificity by Kevin Walker, Genomics & Bioinformatics, with featured talks on quantitative genomics by Daniel Klibenstein and metabolic diversity by Anne Osbourn, Botanicals & Medicinals, with featured talks on phytochemical complexity by Paula Brown and metabolic syndrome by Ilya Raskin, and Phytochemicals in the interaction between plants and their environment, with featured talks on below ground terpene metabolism by Dorothea Tholl and steroidal glycoalkaloids by Jim Tokuhisa. A fifth symposium, Bioproducts From Canadian Forests: Production of Valued Attributes, featured talks on bioproduct research & development in Canada by Tom Rosser, medicinal plants by John Arnason, bio-oil and bio-char by Franco Berruti, enzyme conversion of forest products into high value polymers by Emma Master and conifer triterpenes by Philipp Zerbe. Each symposium was rounded out by a wide range of presentations chosen from submitted abstracts. And, there was an excellent collection of posters assembled comprehensive poster session during the week.

Photos by Suzanne Kohalmi and Mark Berhow

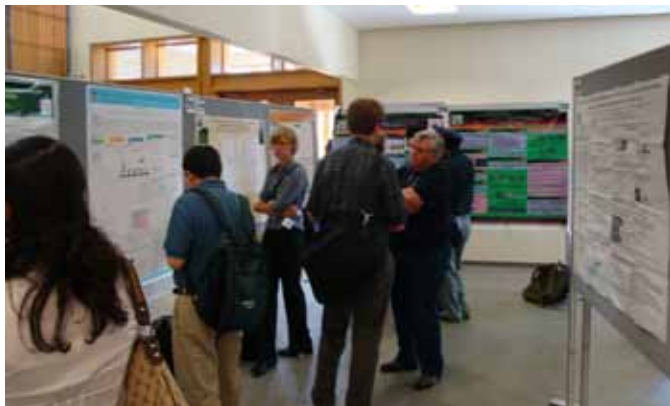
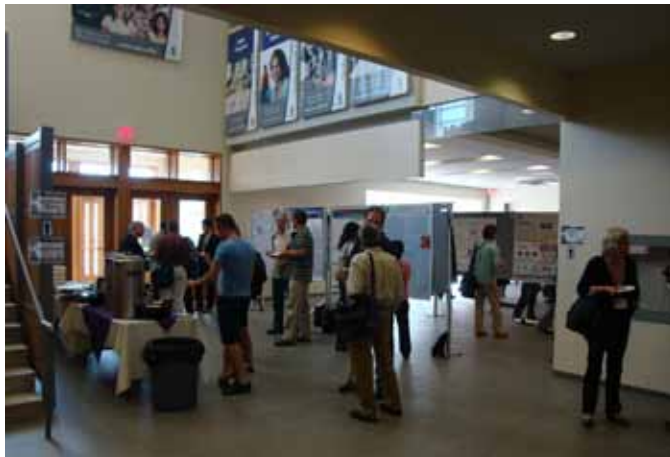
Thanks go out to the Organizing Committee:

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Local Host
Department of Biology
The University of Western Ontario

Charles L. Cantrell
Cecilia McIntosh
Toni M. Kutchan
John T. Arnason
Vincenzo De Luca
Mark R. Gijzen



Is that the United States over there?



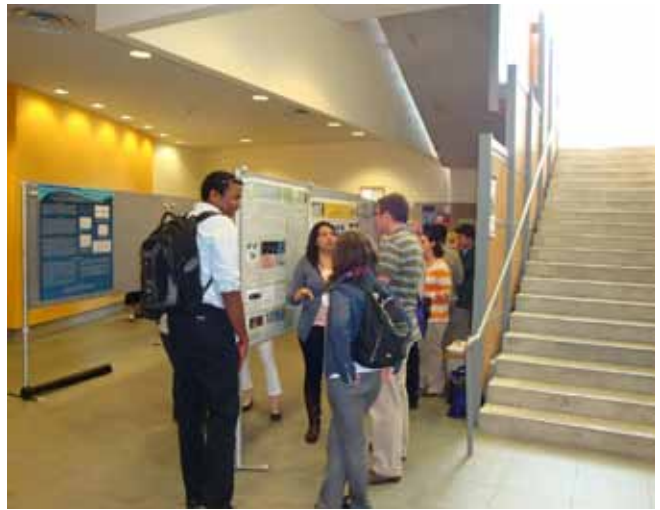
Visiting one of the Niagara wineries



Posters & Food! What more can you ask for?







The Awards Banquet



President Toni Kutchan and Aimee Egger



PSNA 2012 Travel Award Winners



PSNA 2012 Neish Award Winners



PSNA 2012 Best Poster Award Winners



Cheers! from the Bernards Research Group

The Awards Banquet included the recognition of the First Annual PSNA-Elsevier Phytochemistry Award, Dr. Aimee Eggler of Villanova University, our two Neish Award Winners, Dr. Daniel Cook of the USDA, ARS, Logan UT and Dr. Mark Sumarah of Agriculture and Agri-Food, Canada.

The Best Poster Awards were given to:

Pooja Sharma, Department of Biology & the Biotron, The University of Western Ontario: "Hairy Roots as a Model to Investigate the Role of Suberin in the PhytophthoraSojae-soybean Pathosystem,

Dimitre Ivanov Department of Biology and the Biotron, Western University: Ginsenosides and the Pathogenicity of Pythium irregulare

Neish Award Winners, 2012

Daniel Cook, PhD
USDA-ARS-NPA Poisonous Plant
Research, Logan UT, USA



Daniel Cook is a research scientist at the USDA ARS Poisonous Plant Research Laboratory in Logan, UT. His primary research interest is describing the relationship between swainsonine containing plants and fungal endophytes. Additionally he pursues research describing the chemical

ecology of plant toxins focusing two other genera of plants and their toxins: Delphinium (norditerpene alkaloids) and Lupinus (quinolizidine and piperidine alkaloids). The influence of environment, development, and genetics on toxin concentrations, synthesis, and subsequent risk of poisoning are being investigated to mitigate livestock losses. Previous to his current position, Daniel was a post-doctoral associate at the USDA ARS Natural Products Utilization Research Unit in Oxford, MS where he identified and characterized a novel polyketide synthase that uses a fatty acyl-CoA as a substrate to form an alkylresorcinol. Daniel earned a Ph.D. from Michigan State University in Plant Biology where he studied the process of cold acclimation in Arabidopsis thaliana in the laboratory of Dr. Mike Thomashow. Daniel earned a B.S. from Utah State University in Crop Science.

Mark Sumarah, PhD
Southern Crop Protection Food
Research Centre, Agriculture and
Agri-Food Canada, London, ON,
Canada



Mark Sumarah was born and raised in Halifax, Nova Scotia. He received his undergraduate degree at Saint Mary's University in Halifax, and then completed his MSc and PhD in Chemistry at Carleton University

in Ottawa, Ontario with Professor J. David Miller. Dr. Sumarah held a joint post-doctoral position with Carleton University and the Merck Frosst Centre for Therapeutic Research in Montreal, Quebec. He currently works as a Research Scientist with Agriculture and Agri-Food Canada in London, Ontario at the Southern Crop Protection Food Research Centre. His expertise is in the isolation, structural elucidation and analysis of small organic molecules from complex biological matrices using LC-MS and NMR. Dr. Sumarah's current research is focused on the use of metabolomics to study the mechanism of resistance to disease in Canadian crops. He has authored or co-authored 15 publications, and owns a patent.



PHYTOCHEMICAL PIONEER

Tom Mabry

From the cotton fields of Texas to the wonderous world of plant chemistry

Born and raised on a farm a few miles from Commerce, Texas, some 60 miles northeast of Dallas, my childhood was filled with many good times even when working in our cotton fields with my three siblings and my parents, farmer/County Commissioner Thomas Lee Mabry and housewife/ grade school teacher Grace Creamer Mabry. It was on the farm where I developed a curiosity about the natural world, which led me to study biology and chemistry in high school. Luckily, Commerce had a small college, East Texas State (now Texas A&M University-Commerce), which my mother, my siblings and I all attended at very little cost. One of my proudest moments occurred in June, 1952 when I walked across the graduation stage to receive B.S. and M.S. degrees in Chemistry and a 2nd Lt. commission in the Air Force via an ROTC program.

Following college and six months before reporting for active duty in the Air Force, I worked as a chemist for Chance Vought Aircraft, located near Dallas. My induction into the Air Force began in San Antonio at Lackland Air Force Base, but within two months I was assigned as a Research Scientist to Wright- Patterson Air Development Center, Dayton, Ohio. During my two years in the Air Force, I evaluated new equipment for aerial photography, married my high school sweetheart Myra Butler, and enjoyed private flying lessons; the latter led me to sign up for pilot training for what I envisioned would be a long, exciting military career.

Just after I was notified there would be a one-year delay before I could enter the pilot training program, I visited with one of my college friends Mark Norwood who was completing his two years in the Air Force. Mark mentioned that he had been accepted for graduate study in physics at Rice University in Houston. My disappointment with the delay for pilot training turned to joy when I took steps necessary to leave the Air Force and study chemistry at Rice in a Ph.D. program. Although in college I had been an honor student in chemistry, I had no knowledge of reaction mechanisms and struggled during my first semester in graduate school. Nevertheless, with the guidance of my outstanding supervisor Prof. Martin Ettlinger,

I completed a dissertation on the mode of vitamin action of ascorbic

acid. For these studies, I synthesized many analogs of ascorbic acid and compared their vitamin C activity with their structural and enzymatic properties. These studies suggested an enzymatic cofactor role for ascorbate's vitamin activity. For characterization of these carbohydrate-type analogs of ascorbic acid, I often converted them to derivatives that were soluble in organic solvents. Thus, derivatization (under very mild conditions) of various classes of water-soluble natural products for NMR and GC analyses became a powerful analytical procedure I utilized for many of my later phytochemical investigations: for example, studies of the beet pigment betanidin (methylation using diazomethane), flavonoid glycosides (forming trimethylsilyl ethers using hexamethyldisilazane/ trimethylchlorosilane), and non-protein amino acids (to



Fig. 1 Tom's genius mentor for his Ph.D. in Organic Chemistry was Rice University Professor Martin Ettlinger, shown here with his lovely Danish wife Lise Bolt Jørgensen, Professor of Botany, University of Copenhagen, where Martin spent his last years before passing away in 2007. Martin was buried in Austin next to his parents.

N-ethoxycarbonyl ethyl esters using ethylchloroformate/ ethanol). My friend Gene Mitch finished his Ph.D. in chemistry at Rice in 1959 and then accepted a post-doctoral position with Professor Andre Dreiding in the Organic Chemistry Institute, The University of Zürich, Switzerland. Gene encouraged me to also join Dreiding's group. With my Ph.D. degree in Organic Chemistry freshly in hand, it was in great anticipation in June 1960 when Myra and I boarded the Queen Mary for our voyage from New York to England, and then by train from London to Paris to pick up a new Renault. Enroute to Zürich from Paris we detoured to Strasbourg, France and there crossed the Rhein River into Germany in order to visit the parents of Rice post-doctorate Dr. Heinz Gänshirt in the small Black Forest city of Lahr. When we crossed the Rhein, we were less than 20 miles from the German village of Lichtenau, the home of my second wife Helga and her mother Elisabeth (Omi) Humm, both of whom I would meet only a few years later.

Thus, in the summer of 1960, Myra and I began our year and a half sojourn in Zürich, and it was here where



Fig. 3 Tom with Professor Andre Dreiding, his post-doctorate mentor at the University of Zurich, Switzerland in 1960-61. Dreiding was not only a visiting Professor at UT - Austin in the Spring of 1966, but was also a major lecturer for the first PSNA meeting held April 1966 at UT Austin; the meeting was organized by Tom.

I became a “natural products chemist.” Dreiding, a brilliant, modern organic chemist, suggested that I tackle his only natural products problem, namely, the elusive pigments in the red beet, compounds whose structures had puzzled his group and others for many, many years. In my last years at Rice I had learned a new (at that time) technique, NMR spectroscopy, and had become an operator of a Varian Associates instrument,

the big cumbersome HR-60, as well as a pretty good interpreter of spectra. When I initiated my lab work in Zürich, there was no NMR spectrometer but within a few months Varian opened a European office in Zürich with an HR-60. Soon thereafter, I inquired of the American manager Les Procter if I could use their HR-60 in the evenings and on weekends, and to my delight he replied “okay” and handed me keys to the offices. Within a few months I had stacks of NMR spectra of my newly prepared methylated and acetylated derivatives of neobetainidin, compounds that were not only soluble in organic solvents but that also contained all the carbon atoms of the water-soluble betanidin, the aglycone of the main red beet pigment betanin. When my data were combined with those of Dr. Hugo Wyler, Dreiding's outstanding assistant who had elucidated key fragments of the pigment, the structures of the beet pigments were readily resolved. During the next few years, we determined the biosynthesis and remarkable distribution of these unusual pigments, which Dreiding and I named “betalains” in 1966.



Fig. 2 Tom and Helga, a German-trained lab assistant, a few years after their marriage April 3, 1971.



Fig. 4 Dr. Walter Renold shown here with his lovely wife Verena. Walter was a lab assistant in Zurich for Dreiding in 1960, when Tom recognized Walter's talents and sponsored him to attend a small college in Texas for a B.S. degree; then he supervised him for a Ph.D. degree in plant chemistry at UT -Austin in 1970. Walter later became a top scientist and member of the Board of Directors for Firmenich et Cie, a firm in Geneva, Switzerland specializing in perfumes and fragrances.

In 1962, I joined the Department of Botany at The University of Texas at Austin to develop a program in phytochemistry determining structures, distribution, and biological roles for flavonoids, terpenoids, and alkaloids as well as other smaller classes of plant secondary compounds, all for biochemical systematics studies being pursued by plant physiologist Ralph Alston and plant systematist Billie Turner. The first key analysis instrument I purchased was an NMR instrument; however, initially I used the spectrometer in the Chemistry Department at Rice University, and recorded there many of the spectra of trimethylsilyl ethers of flavonoids included in my 1970 volume "The Systematic Identification of Flavonoids" (with post-doctorates Ken Markham and Michael Thomas). By 1968 I was a full Professor and in the 1980s served for several years as Chairman of Botany, and since 1999, following reorganization of Biology at UT-Austin, I have been a member of the Section of Molecular Cell and Developmental Biology in the School of Biological Sciences.

A quote from a footnote in my 2001 career review paper in the *Journal of Natural Products* sums up the sentiments I quickly felt upon starting my new position in Austin. Once at UTAustin, I soon recognized that I was indeed fortunate to be one of the first chemists in a group of biologists who were excited to study, understand and enjoy the world of plants around us and at the same time were deeply concerned with preserving and protecting this green earth for future generations. Within six years I was a full professor envying no one as I cherished my continually challenging extraordinary position, which was supported by several large fully equipped phytochemistry laboratories (GC, UV, NMR, MS, and GC-MS instruments), all staffed with excellent botany Ph.D. students and remarkable international post-doctorates who were organic chemists and biochemists.

I recognize Dr. Klaus Fischer as one the excellent post-doctorates in my lab in the 1960s; Klaus recently retired to the Dallas area from the

Chairmanship of the Department of Pharmacognosy, University of Mississippi. Of course, when Klaus and his wife Helga first arrived from Germany in 1965, little did I expect Helga to become my second wife. Helga had been trained as a Chemical Technician at the Science Academy in Isny (in southeastern Germany) and then worked as a chemistry laboratory assistant at the University of Tübingen, as well as in German industry. With such a rigorous laboratory background, including many invaluable analytical skills, Helga easily became one of my best lab assistants and coedited with me and Jeffrey Harborne the 1975 volume "The Flavonoids." Since our marriage in 1971, Helga has been a terrific partner not only for our home life but also in most of my scientific adventures in almost all countries in the expanded European Union, from the Canary Islands to Warsaw, from London to Athens. In addition, we spent almost a year in Freiberg, Germany during my tenure as a Guggenheim Fellow in the labs of Prof. Wolfgang Barz; here I learned techniques for manipulating and analyzing plant cell cultures. We also had a half-dozen enormously stimulating stays in Heidelberg in the period 1983-2001 when Prof. Dietmar Behnke hosted me during my Alexander von Humboldt Senior Scientist visits. Moreover, the village home of Helga's mother has served every summer since 1971 as our quiet Rhein valley retreat. Since his birth in 1974, our son Patrick has also spent all his vacations in Germany. Still today, a special summer pleasure for me is to bicycle from Lichtenau to the Rhein River where I take a ferry across to France to experience another culture, really another world, in the Alsatian countryside. However, our greatest joy is to have Helga's mother with us in Austin every year from December to April.

In my 2001 review paper, I commented on only four of dozens of research projects: 1) establishing the structures, biosynthesis, and distribution of the unique betalain pigments; 2) the development of a chemical structural basis for a biochemical systematic program; 3) unraveling the mechanism of action of the antiviral proteins in *Phytolacca*; and 4) showing how a non-protein amino acid from Guam cycad seeds may be involved in causing the Guam neurodegenerative disease ALS-PDC (amyotrophic lateral sclerosis-Parkinson's dementia complex), findings which support the hypothesis that substances in our diets and in the air we breathe may cause major neurodegenerative diseases including Parkinson's, Alzheimer's, and ALS. To illustrate additional diversity of our program, which has resulted in >600 publications, titles of 27 of more than 60 dissertations and theses supervised from 1965 to 2002 are presented:

“Biochemical and Biosystematic Studies of *Baptisia* Alkaloids” (Morris Cranmer, 1965)

“The Ultraviolet Spectral Analysis of Coumarins” (Genie Brackenridge, 1968)

“Origin of the Texas Gulf Coast Island Populations of *Ambrosia psilostachya* DC.: a Biochemical and Numerical Systematic Investigation” (Janet Potter, 1970)

“The Chemistry and Intraspecific Variation of Sesquiterpene Lactones in *Ambrosia confertiflora* DC. (Compositae): Chemosystematic Study at the Populational Level” (Walter Renold, 1970)

“Nucleic Acid Studies among Centrospermae Species” (Christina Chang, 1971)

“Betalaamic Acid and Other Products of the Biotransformations of L-Dopa in Betalain Biogenesis” (Linda Kimler, 1972)

“Biochemical Systematic Investigations of Western Hemisphere Species of the Genus *Vernonia* (Compositae) Emphasizing Flavonoid Chemistry” (Zeinab Abdel-Baset, 1973)

“The Chemistry and Distribution of New Germacranolide-type Sesquiterpene Lactones in the North American Taxa of the Genus *Vernonia* (Compositae)” (William Padolina, 1973)

“The Distribution of Azoxyglycosides, Amino Acids and Biflavonoids in the Order Cycadales: Their Taxonomic, Phylogenetic, and Toxicological Significance” (Saifu Dosaji, 1974)



Fig. 5 Dr. Barbara Timmermann, one of Tom's outstanding Ph.D. students, finished her dissertation on flavonoid chemistry in 1980. Today she is a Distinguished Professor and Chair, Dept. of Medicinal Chemistry, School of Pharmacy, University of Kansas.



Fig. 6 Dr. Jonathan Gershenzon, also one of Tom's excellent Ph.D. students, finished his dissertation on terpenoid chemistry in 1984. Today he is one of the Directors of the Max Plank Institute for Chemical Ecology in Jena, Germany.

“The Chemistry and Distribution of Sesquiterpene Lactones and Flavonoids in *Parthenium* (Compositae): Systematic and Ecological Implications” (Eloy Rodriguez , 1975)

“Sulfated and Nonsulfated Flavonoids from *Flaveria*, *Sartwellia*, and *Haploesthes*” (Munira Al- Khubaizi , 1977)

“Phytochemical Investigations of the Genus *Brickellia* (Compositae) Emphasizing Flavonoids” (Barbara Timmermann , 1977)

“Qualitative and Quantitative Natural Products Chemistry of a Desert Plant Community, Andalgala Valley, Argentina: A Chemical-Ecological Study” (Daniel DiFeo , 1977)

“Phytochemical Investigations of the Genus *Larrea* (Zygophyllaceae) Emphasizing Volatile Constituents and Sapogenins” (Charles Bohnstedt , 1977)

“Biochemical Investigations of Marine Algae of the Texas Gulf Coast Emphasizing Amino Acids” (Paula Neuman, 1978)

“The Terpenoid Chemistry of *Helianthus* series *corona-solis* and its Ecological and Systematic Applications” (Jonathan Gershenzon , 1984)

“ A Systematic Study of the Genus *Krigia* (Asteraceae Lactuceae), Emphasizing Chloroplast DNA and Nuclear Ribosomal DNA Variations” (Ki-Joong Kim , 1989)

“Phytoalexin Aurone Induction in *Cephalocereus senilis* (old-man cactus) Liquid Suspension Culture” (Paul Paré , 1991)

“Pokeweed Antiviral Protein Inactivates Pokeweed Ribosomes; Implications for the Antiviral Mechanism” (Maureen Bonness , 1992)

“Isolation and Biological Properties of Citrus Limonoids” (George Mitchell-Tapping, 1992)

“Protoplasts from *Phytolacca dodecandra* ” (Patricia Koch , 1993)

“Chemical and Enzymological Investigations of the Phenylpropanoid Pathway in Elicited Cultures of *Cephalocereus senilis* (“old man” cactus)” David Liu , 1994)

“A Study of Known Excitotoxic Compounds and Isolated Nonprotein Amino Acids from Cycads” (Delia Brownson,1996)

“Pigment Dichotomy and Molecular Evolution in the Caryophyllales” (John Clement, 1997)

“The Role of Root Exudates in Arbuscular Mycorrhizal Initiation” (Carol Mandelbaum, 1997)

“Estrogenic Activity of Flavonoids from *Cyperus alopecuroides* Rottb. (Cyperaceae)” (Amy Bystrom, 2002)

“Chitin-Induced Biosynthesis of Phytoalexin 4 β -Deoxyaurone in Cell Suspension Cultures of “Old Man” Cactus, *Cephalocereus senilis*” (Isagani Padolina, 2002)

I acknowledge two very bright students, Gani Padolina (listed just above) and his father William Padolina (eighth from the top of the list), as they are my only parent-child graduate student combination. While I cannot individually express my heartfelt gratitude to all my hardworking, technically excellent, and very productive colleagues and co-workers, including the sixty-

plus graduate students and well over a hundred post-doctorates, I close with one more quote from a footnote in my 2001 Journal of Natural Products review paper that testifies to the enormous joy I have experienced in my career through them. I proudly report that my role in complex biological chemistry investigations and my stimulating interactions with a large number of fascinating colleagues and special friends continues still today to be a great, exhilarating forty-year ride!

Finally, although I still keep my lab doors open for a few dedicated and highly talented co-workers, I do begin to feel increasing excitement as I expand my personal goals and cultivate my dreams for yet another phase of what has already been over forty “Golden Years.” I like the prospect of Helga and spending long-postponed time with numerous kindred spirits and with many family members including Myra and Klaus, our first spouses, with whom we share many special bonds. We especially relish the idea of finally impersonating grandparents for the adorable twins William Sumner Cooley (left) and Thomas Mabry Cooley (born 05- 27-00) of Michele (daughter, far left) and Webb, and the charming Cassandra Caroline Mabry (born 03- 02-03) of Patrick (son) and Birgit. Lastly, I warmly acknowledge the generous support of the NSF, NIH, and several private foundations including especially the Robert A. Welch Foundation, which has funded our program for over 40 years. Also, I express my heartfelt thanks to D.J. Sibley Jr., Theo Weisser, Jimmy Gill, and Feng Gao.



The Plant Sciences and Life Activities of Tom J. Mabry from 2003-2012

Tom J. Mabry Professor Emeritus
Molecular Cell and Developmental
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Austin

At the suggestion of Eric Johnson, PSNA Secretary, I write this short paper to update my career since 2003, when my previous article on lithe wondrous world of plant chemistry” appeared in the December 2003 PSNA News.

First I mention something that has been significant in shaping my view of life. When I was about 12 years old my parents were given a set of encyclopedia volumes, one of which contained a chapter that excited me, and ultimately changed my interpretation of life, namely {(The Origin of Species” by Charles Darwin. Thus, during my 40 plus years as a Professor for Biological Chemistry at The University of Texas at Austin, I taught the chemical reactions that might have led to life; in addition, I always had long discussions on how evolution has given us the diversity of life on this earth as we know it today.

The next comments concern my plant chemistry program in the 2003-2012 period. My research grants continued to be well funded for several postdoctorates from the Middle East, Asian and elsewhere, as well as for many undergraduate students and the last of my graduate students. These coworkers published over 50 papers describing many new natural products, some with such properties as being anti-tumor and anti-viral; included were lipids, saponins, flavonoids, terpenes, hormones, phenylflavanes, hydroxylactones, phenolics, benzoquinones and



Fig 1. Mabry’s last PhD student Lalita Calabria (Pinchot) with her husband, Gifford (Marco) Pinchot IV, a fishing industry businessman, and their two children, baby Isla Reed and Rowan Marie.



Fig 2. Tom in his new home office with wife Helga; the top three shelves are filled with his students dissertations and theses; the two smaller middle shelves house Tom’s 15 books, including *If The Flavonoids*”, coedited by Tom, Jeffrey Harborne and Helga.

more. My last Ph.D. student, Lalita Calabria (Fig 1) finished her studies in the fall of 2008 and was recognized by The University of Texas for her {(Outstanding Dissertation””: {(The Isolation and Characterization of Triterpene Saponins from *Silphium* and the Chemosystematic and Biological Significance of Saponins in the Asteraceae”.

Next I describe two very different unexpected non-science events. The

first occurred in the spring of 2004 during one of my regular long walks. I suddenly had enormous back pain; several local back surgeons identified the problem as severe deterioration of my spine (scoliosis) and suggested inserting a long rod next to the spine. My German wife Helga and I had already booked our annual trip to visit her mom, who lives near Baden-Baden. Once in Germany one of my friends suggested I

see Dr. Franz Copf, a top European back surgeon in Stuttgart and have him evaluate my problems. This ultimately led to my retiring from UT in 2006 so I could plan for three surgeries requiring about 3 months in Copf's clinic in 2008; since these surgeries I have not yet had back or bending problems!

The other unexpected event occurred January 17/18, 2009; our home burned down as the result of an attic electrical short. Our neighbors provided remarkable help, including

meals, transportation and clothing; moreover, one couple leaving for a cruise vacation even handed us the keys to their home, where we stayed for about 10 days. We rebuilt on the same foundation with several design changes, including a big new office for me (Fig 2). I am just now, Spring 2012, closing my University office and moving important material into my home office where I just placed 70 plus dissertations and theses of students I supervised, as well as copies of my 15 plant chemistry/

botany books, and at least one copy of each of the 750 papers published in my career.

My last comments are to express my thanks to our only daughter Michele, her husband Webb and their twin boys, William and Thomas (Fig. 3) for moving from Dallas to Austin at Helga's suggestion. Michele, a high school science teacher in Dallas, had no difficulty finding a similar position in the Austin area and Webb an architect, was even luckier as his Dallas architectural firm had an office in Austin that was in need of an architect. Their move to the Austin area was just a few months before our January 2009 house fire, and they have pitched in to help us as needed. Their living close to us makes for many wonderful regular family gatherings; this is especially important as our only son Patrick is the General Counsel for an investment firm in Luxembourg and his 9 year old daughter Cassie (Fig.4) lives in Munich with her mom, Patrick's ex-wife. Tom and Helga's trip to Germany this year is booked for May 9-August 2, 2012

I now end my comments on my very satisfying career with best wishes to all my wonderful and productive former students, colleagues and co-workers!

Auf Wiedersehen!

(Tom celebrated his 80th Birthday in Germany, June 6, 2012.)



Fig 3. Daughter Michele Cooley with husband Webb and their twin boys William and Thomas (they will be 12 years old April 27, 2012).



Fig 4. Our son Patrick, photographed with his daughter Cassie celebrating her 9th Birthday on March 2, 2012 in Munich.



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