

Meet a New ASP Member

In our summer issue of the Newsletter, we meet new ASP Member Dr. Carol Pontzer, Program Director in the Division of Extramural Research at the National Institutes of Health (NIH) National Center for Alternative and Complementary Medicine (NCCAM). She takes the time to share with us her research interests in immunology and echinacea. Dr. Pontzer also welcomes questions about the research portfolio in her purview, and encourages interested ASP members to contact her at pontzerc@mail.nih.gov.

By Dr. Dan Kulakowski

How did you hear about the ASP?

I met Dr. Ikhlas Khan, Assistant Director of the National Center for Natural Products Research and Professor of Pharmacognosy at the University of Mississippi School of Pharmacy, Oxford, Mississippi, quite a while ago, and he had mentioned ASP to me. Also, a colleague of mine, Dr. D. Craig Hopp, Program Director at the National Center for Complementary and Alternative Medicine (NCCAM), has been active in ASP for many years.

Why did you join ASP?

As a program director at NCCAM, I have a portfolio of grants, almost all of which examine some aspect of natural products. Many areas of interest to ASP researchers overlap with NCCAM's mission. I oversee some grants that focus on discovery of novel natural products with unique mechanisms of action. Other grants examine interaction of natural products with cellular receptors and induction of signal transcription pathways that have the potential to maintain health or alter disease pathways. It probably makes sense that I have finally joined ASP.

Do you belong to any other scientific societies?

Both my training and research career were as an immunologist. Therefore, I have been a member of both the American Association of Immunologists and the American Society for Microbiology for over 25 years. Lest you think these are not relevant to ASP, consider that many botanicals affect both inflammation and the resolution of inflammation! In addition, it is becoming increasingly recognized that the microbiome is involved in the production of natural product metabolites.

What are your current research interests in pharmacognosy?

I am intrigued by innovative technologies and methods to discover new natural products. I think that plant genomics will enable targeted expression and isolation of many potentially therapeutically useful molecules. I am also convinced that pharmacogenomics will be crucial to understanding responses to natural products. Just as an individual's response to a drug differs based on their genome, variability in the effects of natural products in different people is to be expected.

What is your scientific background?

My publications are all in the area of structure/function studies of immune molecules. I produced synthetic peptide inhibitors and mimetics of large proteins such as type I interferons and Staphylococcal enterotoxins. Later, I shifted to using genetic mutations to alter protein structure with the intent of enhancing the risk/benefit ratio of immune modulators.



Dr. Pontzer

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What would you like to achieve through your membership?

I really appreciate the opportunity to introduce myself to the ASP members because one of my main goals is to make investigators aware of NCCAM and the interest that NCCAM has in pharmacognosy research. All of the NCCAM program directors can answer any questions you may have about our current programmatic interests and funding opportunity announcements. In addition, we each have our own special interest areas. For me, that would be primarily the interaction between natural products and genes (genomics and epigenetics). Other topics you may want to talk to me about would be anti-inflammatory natural products or use of natural products for health maintenance or resilience.

What do you like doing in your spare time?

This question is easy! I am happiest when playing with my 3-year old granddaughter and holding my new grandson.

What are you currently reading?

I have three books on my bedside table. The first is *In Defense of Women* by H. L. Mencken. I was raised in Baltimore, so Mr. Mencken is a staple of my library. Anyone who has read Mr. Mencken's books will appreciate the irony in the title. Appreciation of the foibles of both sexes does help me get along better with my husband. The second book is the final saga in Mr. Alan Bradley's *Flavia De Luce* mysteries; interestingly, all these books revolve around chemistry. Lastly, I am re-reading Mr. C.S. Lewis's *The Screwtape Letters*. It is enough to keep one on the straight and narrow.

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

My favorite animal is our goldendoodle Chester. Other than that, I would have to pick echinacea (*Echinacea* spp.). This is mostly because I have learned so much about both the ups and downs of natural product research from echinacea studies. When I first joined NCCAM, I got a somewhat traumatic and valuable lesson in the importance of using the right plant, species, plant part, extraction method, dosing, indication, and other experimental considerations. The detailed characterization of echinacea alkylamides that is coming out now is fascinating, as is the potential for interaction between different components. Also, I think the contribution of endophytes to immune stimulation by echinacea breaks new ground in understanding the activity of botanicals. ■