



Joint Meeting with 16th Annual International Conference on the Science of Botanics (ICSB) & 5th Interim American Society of Pharmacognosy (ASP)



DAY 1 (MONDAY, APRIL 11)

8:00 -8:45 Open onsite registration – Oxford Conference Center (OCC) Lobby

8:45-10:00 Opening Session - OCC Auditorium

Welcome on behalf of the University of Mississippi and the School of Pharmacy-(OCC Auditorium)

- **Jeffrey Vitter**, Chancellor, University of Mississippi
- **David Allen**, Dean and Executive Director of the Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi

Welcome and Introductory Remarks from Organizers

- **Edward Kennelly**, President, American Society of Pharmacognosy
- **Ikhlas Khan**, Associate Director, National Center for Natural Products Research (NCNPR), University of Mississippi

Introduction of Special Guest and Keynote Speaker

- **Larry Walker**, Director, National Center for Natural Products Research (NCNPR), University of Mississippi

Special Guest

- **Shri A.K. Ganeriwala**, Joint Secretary Ministry of AYUSH (Ayurveda, Yoga, Unani, Siddha and Homeopathy), New Delhi, India

Keynote Address

- **Steven Musser**, Deputy Director for Scientific Operations, CFSAN, *“Integrating Research with Dietary Supplement Safety and Regulation”*

10:00-10:30 **Break (OCC Cedar)**

SESSION 1: *“Update and Future Perspectives from the Regulators”*

(OCC Auditorium)

Moderator and Session Chair: Cara Welch, Senior Advisor, CFSAN, FDA

- 10:30-11:00 **Jinhui Dou**, Pharmacognosy and Pharmacology Reviewer, FDA, *“Botanical Drug Development and Quality Standards”*
- 11:00-11:25 **Cara Welch**, Senior Advisor, CFSAN, FDA, *“Dietary Supplement Regulatory Overview”*
- 11:25-11:50 **Rahul Pawar**, Research Chemist, CFSAN, FDA *“Assessment of the Authenticity of Herbal Dietary Supplements: Comparison of Chemical and DNA Barcoding Methods.”*
- 11:50-12:15 **Yitong Liu**, Senior Staff Fellow/Research Pharmacologist, CFSAN, FDA *“Rapid Screening of Liver Cytochromes P450 Enzyme Inhibitors in Dietary Supplements Using in Silico Modeling and in Vitro Assays”*

Conference Photograph

Meet at OCC side patio across from Cedar Room Dining Hall.

Lunch (OCC Cedar)

SESSION 2a: *“Safety of Dietary Supplements”* Panel Discussion

(OCC Auditorium)

Moderator and Session Chair: Pieter Cohen, Assistant Professor of Medicine, Harvard Medical School

1:30-3:30

- **Bastiaan Venhuis**, Senior Science Officer, RIVM
- **John Travis**, Senior Research Scientist, National Sanitation Foundation
- **Amy Eichner**, Special Advisor on Drugs and Supplements, USADA
- **Andrew Geller**, Medical Officer, CDC Medication Safety Program
- **Dan Budnitz**, Director, CDC Medication Safety Program



Joint Meeting of the 16th Annual International Conference on the Science of Botanicals (ICSB) & the 5th Interim American Society of Pharmacognosy (ASP)



DAY 1 (MONDAY, APRIL 11) Cont.

"Safety of dietary supplements" will begin with a presentation of the key findings from the Centers for Disease Control and Prevention's (CDC) landmark New England Journal of Medicine 2015 study finding that supplements lead to an estimated 23,000 emergency room visits annually in the US. Investigators from the CDC, including the first and senior authors, will present the results. A panel discussion will follow exploring what supplement products and ingredients might be responsible for emergency room visits and hospitalizations. Panelists will include the director of the CDC's Medication Safety Program, the US Antidoping Agency's Special Advisor on Drugs and Supplements, NSF International's John Travis, and Bastiaan Venhuis, one of Europe's leading experts on adulterated supplements. The session will be moderated by Harvard Medical School's Pieter Cohen.

SESSION 2b: "Natural Products Discovery and Development"

(OCC Magnolia)

Moderator and Session Chair: Xing-Cong Li, Principal Scientist, University of Mississippi

1:30-1:50 **Farhan J Ahmad**, Jamia Hamdard, "*Boswellic Acid Loaded Nanoemulsion Gel For Arthritis: Formulation, Characterization and in Vivo Evaluation*"

1:50-2:10 **Jimmy Yuk**, Waters Corporation, "*Redefining Natural Product Screening and Discovery*"

2:10-2:30 **Peter Harrington**, Ohio University, "*A Novel Three-Dimensional Chemical Characterization and Visualization Tool Applied to Green Tea, Hops and Cannabis Varieties*"

2:30-2:50	Break (OCC Cedar)
-----------	--------------------------

2:50-3:10 **Xiong Cai**, Hunan University of Chinese Medicine, "*Suppressive Effects of the Stem of Kadsura Heteroclita On Experimental Inflammatory and Nociceptive Models in Rodents*"

3:10-3:30 **Liu Mi**, Hunan University of Chinese Medicine, "*¹H NMR-Based Metabonomic Analysis Reveals Different Changes Between Acupuncture and Moxibustion On Healthy Young Volunteers*"

SESSION 3: "Public Health"

(OCC Auditorium)

3:30-4:30 **Joshua Sharfstein**, Associate Dean for Public Health Practice and Training, Johns Hopkins Bloomberg School of Public Health, "*Breaking the Gridlock: A Proposal to Advance the Safety of Dietary Supplements in the United States*"

5-7pm	Reception/Mixer Lyric Oxford
-------	-------------------------------------

Presentation of the Waters Award for Outstanding Contribution in Natural Product Science

DAY 2 (TUESDAY, APRIL 12)

SESSION 4: "Prospects for Naturally Derived Cannabinoids as FDA Regulated Therapeutics"

(OCC Auditorium)

Moderator and Session Chair: Larry Walker, Director, NCNPR, University of Mississippi

8:15-8:45 **Douglas Throckmorton**, Deputy Director for Regulatory Programs, CDER, FDA, "*FDA Regulation of Controlled Substances: Past Actions, Future Plans*"

8:45-9:10 **Alice Mead**, Vice President, GW Pharmaceuticals, "*The Legal and Regulatory Status of Cannabidiol (CBD)*"

9:10-9:35 **Mahmoud ElSohly**, Research Professor, University of Mississippi, "*Analytical Insights into Cannabis Products*"

9:35-10:00 **Jerzy Szaflarski**, Director, UAB Epilepsy Center, "*Cannabis for the Treatment of Epilepsy*"

10:00-10:30	Break (OCC Cedar)
-------------	--------------------------



Joint Meeting of the 16th Annual International Conference on the Science of Botanicals (ICSB) & the 5th Interim American Society of Pharmacognosy (ASP)



DAY 2 (TUESDAY, APRIL 12) Cont.

SESSION 5: "Clinical Toxicology Investigations Impacting Supplement Safety Surveillance" (OCC Auditorium)

Moderator and Session Chair: Rick Kingston, Clinical Professor, SafetyCall International

- 10:30-10:55 **Victor Navarro**, Chair, Division of Hepatology, Einstein Healthcare Network, *"Liver Injury Due to Herbs, Botanicals, and Other Dietary Supplements"*
- 10:55-11:20 **Manjula Balasubramanian**, Chief of Clinical Pathology, Albert Einstein Medical Center, *"Pathology of Renal Injury Due to Botanicals"*
- 11:20-11:45 **Patricia Deuster**, Professor and Director, Consortium for Health and Military Performance, *"Operation Supplement Safety: A DOD Effort to Encourage Safe Supplement Use"*
- 11:45-12:10 **Robert Rountree**, Chief Medical Officer, Thorne Research, *"Corporate product stewardship and academic collaborations to address supplement safety"*

Lunch (OCC Cedar)

SESSION 6a: "Natural Products and Cosmetics"

(OCC Auditorium)

Moderator and Session Chair: Nakissa Sadrieh, Director Cosmetic Division, FDA

- 1:10-1:40 **Nakissa Sadrieh**, Director Cosmetic Division, FDA, *"FDA Perspective for The Regulation of Cosmetic Products"*
- 1:40-2:10 **Cindy Angerhofer**, Executive Director of Botanical Research, Aveda Corporation, *"Ayurvedic Herbs as Sources of Cosmetic Ingredients"*
- 2:10- 2:40 **Amar Chittiboyina**, Senior Research Scientist, University of Mississippi, *"Alternative Testing Methods for Estimating the Skin Sensitization Potential of Natural Products"*
- 2:40-3:10 **David Moyler**, Regulatory Consultant, IFRA, IOFI, RIFM and the British Essential Oils Association, *"NCS; Global UN-GHS regulations implementation, which seems to me to fit the brief"*

3:10-3:40 Break (OCC Cedar)

SESSION 6b: "Botanical Reference Material and Authentication"

(OCC Magnolia)

Moderator and Session Chair: Joseph Betz, Director of the ODS Analytical Methods and Reference Materials Program

- 1:10-1:40 **Rupa Das**, VP of Global Quality and Compliance, BI Nutraceuticals, *"Challenges and Management of the Botanical Supply Chain"*
- 1:40-2:10 **Wendy Applequist**, Associate Curator, Missouri Botanical Garden, *"Morphological Authentication of Species Defined by Morphology: Can One Speak of Validating Methods and How?"*
- 2:10 - 2:30 **Thomas Brendler**, PlantaPhile, *"What The Devil Got into Your Supplement? Devil's Claw (Harpagophyti radix) For Joint Health"*
- 2:30-2:50 **Hans Wohlmuth**, Integra Healthcare, *"Is DNA Barcoding Using Universal Barcodes a Useful Test for Botanical Raw Materials, Extracts and Products?"*
- 2:50-3:10 **James Traub**, Waters Corporation, *"Selection of The Most Appropriate Methods for Botanical Identification"*

3:10-3:40 Break (OCC Cedar)

- 3:40-4:10 **Catherine Rimmer**, Research Chemist, NIST, *"Identity Data for Standard Reference Materials"*
- 4:10-4:30 **Charlotte Simmler**, University of Illinois at Chicago, *"A Multi-Layered Approach to Botanical Authenticity Fosters Good Research Practices"*
- 4:30-4:50 **James Harnly**, USDA, *"Botanical Identification: A Chemometric Challenge"*



Joint Meeting of the 16th Annual International Conference on the Science of Botanicals (ICSB) & the 5th Interim American Society of Pharmacognosy (ASP)



DAY 2 (TUESDAY, APRIL 12) Cont.

4:50-5:10 **Paula Brown**, BC Institute of Technology, *"Use of Chemical Profiling with Chemometric Analyses for Authentication of Botanical Products"*

SESSION 6c: *"Safety Assessment of Botanicals: Herb-Drug Interactions"*

(OCC Auditorium)

Moderator and Session Chair: Shabana Khan, Principal Scientist, University of Mississippi

- 3:40-4:00 **Bill Gurley**, University of Arkansas for Medical Sciences, *"Multi-Ingredient, Caffeine-Containing Dietary Supplements: History, Efficacy and Safety"*
- 4:00-4:20 **Amy Roe**, Procter & Gamble, *"Assessing Potential Herb-Drug Interactions Using a Common Framework Approach: Schisandra spp. as A Case Study"*
- 4:20-4:40 **Vamshi Manda**, University of Mississippi, *"Botanicals as Potential Activators of PXR – Implications in Herb-Drug Interactions"*
- 4:40-5:00 **Mary Hardy**, George Washington Masters Program in Integrative Medicine, *"Descriptions of botanical interventions in clinical trials: How well are we doing?"*

5:30-8:00 **Poster Session Chair: Amar Chittiboyina, University of Mississippi (OCC Oak)**

7:00 – 8:00 **Dinner (OCC Cedar)**

DAY 3 (WEDNESDAY, APRIL 13)

SESSION 7: *"International Perspectives on Botanical Research"*

(OCC Auditorium)

Moderator and Session Chair: James McChesney, President, Ironstone Separations, Inc.

- 8:30-9:00 **Geoffrey Cordell**, Professor Emeritus, University of Illinois, President, Natural Products Inc *"Alice, Benzene, and Coffee: The ABC's of Ecopharmacognosy"*
- 9:00-9:30 **Lesley Braun**, Director, Blackmores Institute, *"Complementary Medicine Use and Regulation – An Australian Perspective"*
- 9:30-10:00 **Rosario Rojas**, Universidad Peruana Cayetano Heredia, *"An overview of Applied research on Peruvian Natural Products"*

10:00-10:30 **Break (OCC Cedar)**

SESSION 8a: *"Botanical Development and Regulation"*

(OCC Auditorium)

Moderator and Session Chair: Mark Blumenthal, Founder & Executive Director, American Botanical Council

- 10:30-11:00 **Shen Ji**, Director, Institute for Food and Drug Control, *"Quality Assurance of Ginkgo Products"*
- 11:00-11:30 **Stefan Gafner**, Chief Science Officer, American Botanical Council, *"Botanical Ingredient Adulteration: Efforts by The ABC-AHP-NCNPR Botanical Adulterants Program to Raise Awareness of Current Issues and Provide Solutions to The Problem"*
- 11:30-12:00 **Loren Israelsen**, President, UNPA, *"A Report On Industry Initiatives to Enhance Botanical GMPs and Supplier Quality"*

SESSION 8b: *"Natural Product Discovery and Regulation"*

(OCC Magnolia)

Moderator and Session Chair: Jinhui Dou, Botanical Review Team (BRT), Food and Drug Administration

- 10:30--11:00 **Edward Kennelly**, Professor, Lehman College, CUNY, *"Observations of Modern Traditional Chinese Medicine as Practiced in Hong Kong"*



Joint Meeting of the 16th Annual International Conference on the Science of Botanicals (ICSB) & the 5th Interim American Society of Pharmacognosy (ASP)



DAY 3 (WEDNESDAY, APRIL 13) Cont.

11:00--11:30 **Guillermo Schmeda-Hirschmann**, Professor, University of Talca, "*Bioactive Phenolics in Chilean Native Fruits*"

11:30--12:00 **Gerhard Franz**, Professor, University of Regensburg, "*European Pharmacopoeia: An Optimal Guarantee for The Quality of Herbals*"

Lunch (OCC Cedar)

2:00-3:00 **Natural Products Training Laboratory Dedication a partnership with Waters Corporation**

3:00-9:00 **ICSB Picnic - Oxford Conference Center Lawn. Food, Fun, Music and Outdoor Games**

DAY 4, (THURSDAY, APRIL 14)

(OCC Auditorium)

SESSION 9: "*International Efforts on the Development of Traditional Chinese Medicines*"

Moderator and Session Chair: Kate Yu, Senior Manager, Waters Corporation

8:30-9:00 **De-an Guo**, Professor, Shanghai Institute of Materia Medica, "*Phytochemical Analysis of Chinese Herbal Medicines by New Analytical Tools*"

9:00-9:30 **Yi He**, Director, Tasy Academy, Tianjin, China "*Consideration and Practice on the CMC Quality Control Aspects of TCM Application*"

9:30-10:00 **Wei Wang**, Professor, Hunan University of Chinese Medicine, "*Development of Ethnic Medicine in China*"

10:00-10:30 **Break (OCC Cedar)**

SESSION 10a: "*International Efforts on the Development of Herbal Medicine*"

(OCC Auditorium)

Moderator and Session Chair: Wei-Dong Zhang, Professor, Second Military Medical University

10:30-11:00 **Ibrahim Jantan**, Professor, National University of Malaysia, "*Cardiovascular Protective Effects of Standardized Extracts and Isolated Compounds of Selected Medicinal Plants from The Tropical Rainforest*"

11:00-11:30 **Tung-Ying Wu**, Professor, China Medical University, "*Experimental Design for the Characterization and Quantitation of Antrodia cinnamomea Triterpenoids: A Tough Case to Crack*"

11:30-12:00 **Seikwan Oh**, Professor, School of Medicine, Ewha Woman's University, "*Evaluation of 3,4,5-Trimethoxycinnamic Acid Derivatives as Potential Antinarcotic and Anxiolytic Agents*"

SESSION 10b: "*DNA Authentications*"

(OCC Magnolia)

Moderator and Session Chair: Wendy Applequist, Associate Curator, Missouri Botanical Garden

10:30-11:00 **Carmen Tartera**, ORISE Fellow, FDA "*Genomic Profiling and Database Development of Marketed Probiotics: In Support of New Dietary Ingredient Safety*"

11:00-11:30 **Sara Handy**, Research Biologist, CFSAN, FDA, "*Development of Sequence Libraries for Generation of DNA-Based ID Methods*"

11:30-12:00 **Natascha Techen**, Research Scientist, University of Mississippi, "*Detection of Plant DNA in Dietary Supplements*"

12:00-1:00 **Lunch (OCC Cedar)**

SESSION 11a: "*Quality Assessment of Natural Products*"

(OCC Auditorium)

Moderator and Session Chair: De-an Guo, Professor, Shanghai Institute of Materia Medica

1:00-1:30 **Andrea Raab**, Assistant Professor, University of Aberdeen, "*Essential and Non-Essential Trace Elements in Nutraceuticals*"



Joint Meeting of the 16th Annual International Conference on the Science of Botanicals (ICSB) & the 5th Interim American Society of Pharmacognosy (ASP)



DAY 4, (THURSDAY, APRIL 14) Cont.

- 1:30-2:00** **Giorgis Isaac**, Principal Scientist, Waters Corporation, *"Metabolomics Based UHPLC-QToF-MS Approach for the Authentication of Various Botanicals and Dietary Supplements"*
- 2:00-2:30** **Philip Wylie**, Agilent Technologies, *"Analysis of Pinot Noir Wines by HS-SPME GC/Q-TOF: Correlating Geographical Origin with Volatile Aroma Profiles"*
- 2:30-3:00** **Jerry Zweigenbaum**, Agilent Technologies, *"Characterization and Quantitation of Yohimbine and Analogues in Botanicals and Dietary Supplements by LC/MS"*
- 3:00-3:30** **Hellen Oketch**, Senior Scientific Liaison, Dietary Supplements, United States Pharmacopeia, *"USP Botanical Standards"*

SESSION 11b: *"Safety and Efficacy"*

(OCC Magnolia)

Moderator and Session Chair: Edward Kennelly, Professor, Lehman College, CUNY

- 1:00-1:20** **Michael Tims**, Maryland University of Integrative Health, *"A Little Biology Goes a Long Way: Botanical Standard Reference Material Development Can Provide Guidance in Making Effective Herbal Extracts"*
- 1:20-1:40** **Temitope Lawal**, University of Illinois at Chicago, *"Ginger (Zingiber officinale Roscoe, Zingiberaceae) Extract and 10- Gingerol Enhance the Activity of Clarithromycin Against Resistant Helicobacter Strains"*
- 1:40-2:00** **Jeevan Prasain**, University of Alabama at Birmingham, *"Cellular Metabolism of Quercetin and Its Analogs in Bladder Cancer Cells"*
- 2:00-2:20** **Cassandra Quave**, Emory University, *"Answering the Call to Arms: Tools for Assessing the Anti-infective Potential of Natural Products in a Time of Rising Antibiotic Resistance"*

2:20-2:50 **Break (OCC Cedar)**

- 2:50-3:10** **Rasika Phansalkar**, University of Illinois at Chicago, *"Grape Seed Proanthocyanidins: A Novel Source of Dental Biomaterials and Unique Phytochemistry"*
- 3:10-3:30** **Mohammad Kamil**, Zayed Herbal Complex *"Ferula asafetida-A Gastro Prokinetic Agent"*
- 3:30-3:50** **Uma Chandur**, Andhra University College of Pharmaceutical Sciences, *"Effect of Selected Herbal Extracts on MCF-7 (Breast Cancer) Cell Line"*

Afternoon tour of NCNPR facilities or Medicinal Plant Garden

6:30 **Closing Ceremony and Banquet (OCC Cedar)**

Registration is required and is available online and onsite