

Day 1 - Monday, March 28

8:00-9:00 am Opening onsite registration-OCC Lobby

9:00-10:30 am Opening Session-OCC Auditorium

Ikhlas Khan, Director, NCNPR, University of Mississippi-[Welcome on behalf of the International Conference on the Science of Botanicals](#)

Donna West-Strum, Dean and Executive Director, School of Pharmacy, University of Mississippi -[Welcome on behalf of the University of Mississippi, School of Pharmacy](#)

Joseph Gladden, Vice Chancellor, Research & Sponsored Programs, University of Mississippi-[Welcome on behalf of the University of Mississippi](#)

Tierona LowDog, Integrative Medicine Concepts, LLC -[Key Note Address](#)

10:30-11:00 am Break

***Virtual Presentation**

Session 1	Tribute To Our Dear Friend And Colleague-Professor Hildebert Wagner	OCC Auditorium
11:00-11:50	<i>Chair: Ikhlas Khan, University of Mississippi</i> Mark Blumenthal , American Botanical Council *Geoffrey Cordell , Natural Products Inc. *Harry Fong , University of Illinois Chicago *Rudolf Bauer , University of Graz	
11:50-12:00	Conference Photography -Meet at OCC side Patio Across from Cedar Room Dining Hall	
12:00-1:00	Lunch	OCC Cedar Room
Session 2	Dietary Supplement Use In Sport: Challenges In The Trenches	OCC Auditorium
1:00-2:30	<i>Chair: John Travis, NSF International</i> Shannon Singletary , University of Mississippi Melinda Valliant , University of Mississippi Oliver Catlin , Banned Substances Control Group	
2:30-3:00	Break	
Session 3	Clinical and Mechanistic Insights into Herbal and Dietary Supplement Induced Liver Injury	OCC Auditorium
3:00-4:30	<i>Chair: Victor Navarro, Einstein Healthcare Network</i> Victor Navarro , Einstein Healthcare Network-DILIN Experience with Supplement Induced Liver Injury and Plan for the Future Herbert Bonkovsky , Wake Forest Baptist Health-Green Tea [GT], Garcinia, Polygonum species and the Liver—Strong Association with HLA-B* 35:01 Provides Evidence for Immune-Mediated Liver Injury in Genetically Susceptible Persons Andrew Stolz , Keck School of Medicine of USC-Appearance and Performance Enhancing Supplement Liver Injury: Clinical Feature and Possible Mechanisms David Ostrov , University of Florida College of Medicine-HLA Binding Sites and Liver Injury from Drugs and Dietary Supplements	
Session 4	1st Annual McChesney Lecture	
4:30-5:30	James McChesney , Cloaked Therapeutics, LLC- TumorSelectTechnology® Enhancing Safety and Efficacy of Cytotoxic Chemotherapeutics	
6:00-8:00	Reception/Mixer - Award Presentation: Outstanding Contribution in Natural Products:	OCC Cedar Room

Day 2 - Tuesday, March 29

Session 5: "Update and Future Perspectives from the FDA" -OCC Auditorium

Moderator and Session Chair: **Larry Walker**, University of Mississippi

8:30-10:15 am

***Cara Welch**, Food and Drug Administration, Center for Food Safety and Applied Nutrition-FDA's Dietary Supplement Program: Overview and Update

***Sara Handy**, Center for Food Safety & Applied Nutrition, Office of Regulatory Science, USDA-Using Genome-Scale Data to Ensure Authenticity and Safety of Botanicals

***Calvin Edwards**, Health Fraud Branch, FDA/ORA/OPOP/OSPOP/DE/HFB-Office of Regulatory Affairs Health Fraud Branch Program: Overview and Update

***Rahul Pawar**, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration-What analytical methods tell us about the authenticity of selected Ginkgo biloba supplements
10:15-10:30 am Break

Session 6	How Should Cannabis Quality Be Defined? Chair: Nandakumara Sarma , United States Pharmacopeia Holly Johnson , American Herbal Products Association Mahmoud A. ElSohly , University of Mississippi David Vaillencourt , The GMP Collective * Cassandra Taylor , Office of Pharmaceutical Quality/CDER, FDA	OCC Auditorium			
10:30-12:00					
12:00-1:00	Lunch	OCC Cedar Room			
Session 7a	Changing Landscape For Cannabis Markets, Research And Regulation In The US Chair: Rick Kingston , Safety Call * Cassandra Taylor , Office of Pharmaceutical Quality/CDER, FDA-Cannabis and Cannabis-Derived Compounds: Quality Considerations for Clinical Research FDA Draft Guidance for Industry Lance Blundell , Cbdmd Inc-Regulatory Landscape for Hemp-Derived Products Larry Walker , University of Mississippi- State Medical Cannabis Programs: Wants and Needs	OCC Auditorium	Session 7b	Biological Evaluation Of Botanicals Chair: Xing-Cong Li , University of Mississippi Mohamed Ibrahim , University of Mississippi-Identification of an Orally Bioavailable, Brain-Penetrant Compound with Selectivity for the Cannabinoid Type 2 Receptor Hayley Prescott , University of Mississippi-Botanical Aphrodisiacs For Women's Health Yalda Shokoohinia , Southwest College of Naturopathic Medicine & Health Sciences-Isolation of tens of compounds from <i>Achillea wilhemsii</i> including new sesquiterpenoids with metabolic syndrome management activities Heesung Chae , University of Mississippi-PPAR α and PPAR γ agonistic effects and increase in glucose uptake by <i>Aquilaria sinensis</i> flower extract	OCC Magnolia
1:00-1:25			1:00-1:20		
1:25-1:50			1:20-1:40		
1:50-2:15			1:40-2:00		
2:15-2:30	Break		2:00-2:20		
2:30-2:45	Update on the Office of Dietary Supplements Joe Betz , National Institutes of Health	OCC Auditorium	Session 8b	Importance Of Reference Materials Chair: Adam Kuszak , National Institutes of Health Tara Lin Couch , EAS Consulting Group-Raw Material Specifications The best way to ensure safety in dietary supplement products Sarah Aijaz , Millipore Sigma-Development of certified reference materials for phytochemicals in ginger and kava Kiel Henderson , Chromadex-Reference Standards and Considerations with Research and Development Projects. Wilmer Perera , CAMAG Scientific-Authentication and Quality Control of 'espinheira-santa' (<i>Monteverdia ilicifolia</i>) by Morpho-anatomy and High-Performance Thin-Layer Chromatography Wendy Applequist , Missouri Botanical Gardens-Substitution and adulteration of Traditional Chinese Medicine seeds and small fruits in the U.S. market	OCC Magnolia
2:30-2:50			2:30-2:50		
Session 8a	FDA Challenges & Opportunities: Hear From FDA Alumni On The Most Pressing Issues Before The Agency Chair: Ikhlas Khan , University of Mississippi Dan Fabricant , Natural Products Association National Sybil Swift , Cbdmd Inc Robert Durkin , Arnall Golden Gregory LLP	OCC Auditorium	2:50-3:10		
2:45-3:45			3:10-3:30		
			3:30-3:50		
			3:50-4:10		
5:30-8:00	POSTER SESSION Chair: Amar Chittiboyina , University of Mississippi	OCC Cedar Room	5:30-8:00	POSTER SESSION	OCC Cedar Room
6:00-8:00	Dinner	OCC Cedar Room	6:00-8:00	Dinner	OCC Cedar Room

Day 3 - Wednesday, March 30

Session 9: "Industry Perspective" -OCC Auditorium

Moderator and Session Chair: **Loren Israelsen**, United Natural Products Alliance

8:30-10:00 am

Russ Osguthorpe, doTerra-The Need for Purity, Consistency and Scientific Validation in the Essential Oil Marketplace
Katie Banaszewski, NOW Foods-Holding the line: Dietary Supplements Quality Control and the Regulatory Challenges
Amit Chandra, Amway-Significance Of Fit For Purpose Test Methods To Ensure Integrity Of Botanicals In Dietary Supplements
 10:00-10:30 am Break

		OCC Auditorium	
Session 10	Assessment Of The Quality, Safety, And Efficacy Of Essential Oils Chair: Ryan Yates , University of Mississippi Prabodh Satyal , Aromatic Plant Research Center-Overcoming instrumental limitations in adulteration detection of essential oils and discovery of synthetic markers		
10:30-10:50			
10:50-11:10	Nicole Stevens , doTerra-Antidiabetic Potential of Volatile Cinnamon Oil: A Review and Exploration of Mechanisms Using In Silico Molecular Docking Simulations		
11:10-11:30	Stefan Gafner , American Botanical Council-Analysis Of Volatile Constituents In Commercial "Lavender" Products Linked To Premature Thelarche And Prepubertal Gynecomastia		
11:30-11:50	Bill Gurley , University of Mississippi-"So, you think you know the NCNPR": An update on facilities, research, and programs at the National Center for Natural Products Research		
12:00-1:00	Lunch	OCC Cedar Room	
Session 11a	Sustainability And Plant Conservation Chair: Mark Blumenthal , American Botanical Council	OCC Auditorium	Session 11b
1:00-1:25	*Geoff Cordell , Natural Products Inc. -Sustainability Considerations for Biologically Active Natural Products		Analytical Approaches Chair: Narendra Meruva , Waters Corporation Hui Zhao , Agilent Technologies-Detection and Accurate Quantitation of 14 Water Soluble Vitamins and 14 Fat Soluble Vitamins in Supplement by LC-MS/MS Triple-Quadrupole Emily Britton , Waters Corporation-Analytical Approaches for Characterizing Cannabinoids for Quality, Safety, and Research Applications Adam Gilmore -Rapid, Horiba Instruments Inc., -Accurate Quantification of Capsaicinoids in Various Chili Pepper Extracts with Absorbance-Transmittance fluorescence Excitation-Emission (A-TEEM) Spectroscopy. Cuiying Ma , United States Pharmacopeia-Use of qNMR to determine HPLC relative response factors for botanical reference standards used in pharmacopeial monographs
1:25-1:50	Kerry Hughes , EthnoPharm-Biodiversity And Regenerative Agriculture		1:00-1:20
1:50-2:15	Ed Fletcher , Herbal Ingenuity-Sustainability and Plant Conservation		1:20-1:40
			1:40-2:00
			2:00-2:20
3:30-5:00			
6:00-9:00			ICSB Yard Games & Competition

Day 4 - Thursday, March 31

Session 12: "Botanical Research And Development" - OCC Auditorium

Moderator and Session Chair: **Joe Betz**, National Institutes of Health

8:30-10:00 am

***Giulio Pasinetti**, Icahn School of Medicine at Mount Sinai-**Microbiota metabolites modulate the T helper 17 to regulatory T cell (Th17/ Treg) imbalance promoting resilience to stress-induced anxiety- and depressive- like behaviors**

Nirmal Pugh, University of Mississippi, - **Botanical Dietary Supplements Research Center: Arthrospira as a supplement for enhancing the host antiviral immune response.**

John Cort, Pacific Northwest National Laboratory-NP-MRD: **The Natural Products Magnetic Resonance Database**

10:00-10:30 am Break

Session 13 **Botanical Safety Assessment: Updates From The BSC** OCC Auditorium

Chair: **Dan Marsman**, Procter & Gamble

10:30-12:00 **Holly Johnson**, American Herbal Products Association-**Introduction to the Botanical Safety Consortium**

Alkemist Lab-**HPTLC Comparisons for Ashwagandha Root Extract**

Richard Van Breemen, Oregon State University-**Constituent**

Identification and Quantification talk

Cammi Thornton, University of Mississippi-**Method talk on Zebrafish embryos**

Amy Roe, The Procter & Gamble Company-**ADME modeling and hepatotoxicity**

Hellen Oketch-Rabah, United States Pharmacopeia & **Stefan Gafner**,

American Botanical Council-**HESI Botanical Safety Consortium &**

Kamuzu University of Health Sciences Initiatives

12:00-1:00 Lunch OCC Cedar Room

Session 14 **Traditional Uses/Clinical Studies** OCC Auditorium

Chair: **Larry Walker**, University of Mississippi

1:00-1:30 **Jon Wardle**, Southern Cross University, **Traditional Claims For Herbal Medicines**

1:30-2:00 **Gailen Marshall**, University of Mississippi Medical Center-**Pragmatic Clinical Trials for Natural Products – Principles, Pitfalls and Potentials**

Session 15 **The Contentious & Evolving Safety Story Of Piper Methysticum: The Kava Paradox Revisited, Again** OCC Auditorium

Chair: **Bill Gurley**, University of Mississippi

2:00-3:00 **Holly Johnson**, American Herbal Products Association

Tyler Daniels, Thorne

Bill Gurley, University of Mississippi

Rick Kingston, SafetyCall

Chengguo Xing, University of Florida Health

6:30 PM Closing Ceremony & Banquet (OCC Cedar Room)