Session 1

Tribute To Our Dear Friend And Colleague-Professor Hildebert Wagner
OCC Auditorium
Chair: Ikhlas Khan, University of Mississippi

11:00-11:50
*Geoffrey Cordell, Natural Products Inc.
*Harry Fong, University of Illinois Chicago
*Rudolf Bauer, University of Graz

Conference Photography-Meet at OCC side Patio Across from Cedar Room Dining Hall

11:50-12:00
Lunch
OCC Cedar Room

Session 2

Dietary Supplement Use In Sport: Challenges In The Trenches
OCC Auditorium
Chair: John Travis, NSF International

1:00-2:30
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
Chair: Victor Navarro, Einstein Healthcare Network
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 Statoz, 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
OCC Auditorium
James McChesney, Cloaked Therapeutics, LLC—TumorSelectTechnology® Enhancing Safety and Efficacy of Cytotoxic Chemotherapeutics

4:30-5:30

6:00-8:00
Reception/Mixer - Award Presentation: Outstanding Contribution in Natural Products: OCC Cedar Room
Session 6: How Should Cannabis Quality Be Defined?
Chair: Nandakumara Sarma, United States Pharmacopeia
10:30-12:00
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
12:00-1:00 Lunch

Session 7a: Changing Landscape For Cannabis Markets, Research And Regulation In The US
Chair: Rick Kingston, Safety Call

1:00-1:25
Lance Blundell, Cbdmd Inc-Regulatory Landscape for Hemp-Derived Products
1:25-1:50
Larry Walker, University of Mississippi-State Medical Cannabis Programs: Wants and Needs
1:50-2:15
Break

2:15-2:30 Break

Session 7b: Biological Evaluation Of Botanicals
Chair: Xing-Cong Li, University of Mississippi

2:30-2:45
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 Aphrodisiats For Women's Health
Yalda Shokohinia, Southwest College of Naturopathic Medicine & Health Sciences-Identification of ten compounds from Artemisia annua with antimalarial activity
Heesung Chae, University of Mississippi-PPARα and PPARγ agonistic effects and increase in glucose uptake by Aquilaria sinensis flower extract
2:45-3:00 Break

Session 8a: FDA Challenges & Opportunities: Hear From FDA Alumni On The Most Pressing Issues Before The Agency
Chair: Ikhlas Khan, University of Mississippi

2:30-3:10
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.
Wimper Perera, CAMAG Scientific-Accurancy and Quality Control of ‘espinheira-santa’ (Monteverdia ilicifolia) by Morpho-anatomy and High-Performance Thin-Layer Chromatography
3:10-3:30 Break

3:30-3:50
Sybil Swift, Cbdmd Inc-Regulatory landscape for hemp-derived products
Robert Durkin, Arnall Golden Gregory LLP-Adulteration and substitution of Traditional Chinese Medicine seeds and small fruits in the U.S. market
3:50-4:10 Break

Session 8b: Importance Of Reference Materials
Chair: Adam Kuszak, National Institutes of Health

4:10-4:25
Tara Lin Couch, EAS Consulting Group-Raw Material Specifications
Sarah Aljaz, Millipore Sigma-Development of certified reference materials for phytochemicals in ginger and kava
Wilmer Perera, CAMAG Scientific-Accurancy and Quality Control of ‘espinheira-santa’ (Monteverdia ilicifolia) 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
4:25-4:40 Break

5:30-8:00 POSTER SESSION
Chair: Amar Chittiboyina, University of Mississippi
5:30-8:00 POSTER SESSION
6:00-8:00 Dinner
### Session 10: Assessment Of The Quality, Safety, And Efficacy Of Essential Oils
**Chair:** Ryan Yates, University of Mississippi
**OCC Auditorium**

**10:30-10:50**
**Nicole Stevens,** doTerra - Overcoming instrumental limitations in adulteration detection of essential oils and discovery of synthetic markers

**10:50-11:10**
**Stefan Gafner,** American Botanical Council - Analysis of Volatile Constituents In Commercial "Lavender" Products Linked To Premature Thelarche And Prepubertal Gynecomastia

**11:10-11:30**
**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

**11:30-11:50**
**Kerry Hughes,** EthnoPharm - Biodiversity And Regenerative Agriculture

### Lunch
**OCC Cedar Room**

### Session 11a: Sustainability And Plant Conservation
**Chair:** Mark Blumenthal, American Botanical Council
**OCC Auditorium**

**1:00-1:20**
**Geoff Cordell,** Natural Products Inc. - Sustainability Considerations for Biologically Active Natural Products

**1:20-1:40**
**Kerry Hughes,** EthnoPharm - Biodiversity And Regenerative Agriculture

**1:40-2:00**
**Ed Fletcher,** Herbal Ingenuity - Sustainability And Plant Conservation

**3:30-5:00**
**ICSB Yard Games & Competition**

### Session 11b: Analytical Approaches
**Chair:** Narendra Meruva, Waters Corporation
**OCC Auditorium**

**1:00-1:20**
**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

**1:20-1:40**
**Emily Britton,** Waters Corporation - Analytical Approaches for Characterizing Cannabinoids for Quality, Safety, and Research Applications

**1:40-2:00**

**2:00-2:20**
**Cuiying Ma,** United States Pharmacopeia - Use of qNMR to determine HPLC relative response factors for botanical reference standards used in pharmacopeial monographs

### Day 3 - Wednesday, March 30
**Session 9: "Industry Perspective" - OCC Auditorium**
**Moderator and Session Chair:** Loren Israelsen, United Natural Products Alliance

**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**

**3/24/2022 4:04 PM**
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: Arthrosira 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

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Session 13: Botanical Safety Assessment: Updates From The BSC
OCC Auditorium
10:30-12:00

Chair: Dan Marsman, Procter & Gamble
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 Thorton, 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

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Session 14: Traditional Uses/Clinical Studies
OCC Auditorium
1:00-1:30

Chair: Larry Walker, University of Mississippi
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

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Session 15: The Contentious & Evolving Safety Story Of Piper Methysticum: The Kava Paradox Revisited, Again
OCC Auditorium
2:00-3:00

Chair: Bill Gurley, University of Mississippi

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)