Global Engage

12TH MICROBIOME R&D & BUSINESS COLLABORATION FORUM: USA
9TH PROBIOTICS & PREBIOTICS CONGRESS: USA
6TH SKIN MICROBIOME & COSMECEUTICALS CONGRESS: USA

SAN DIEGO, USA
October 17-18 2024

#MicrobiomeForum

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WARM WELCOME

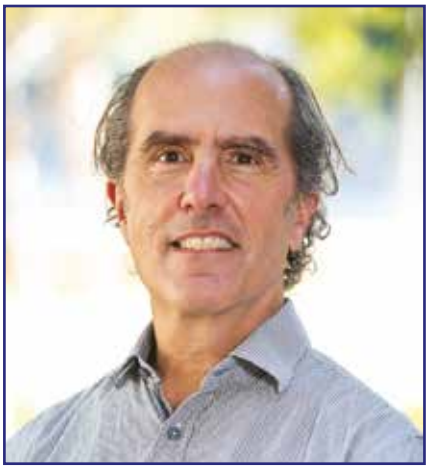
Global Engage

Global Engage is pleased to announce the **12th Microbiome, Probiotics & Prebiotics R&D and Business Collaboration Forum**, which is confirmed to be held on October 17-18 in San Diego at the La Jolla Marriott and co-located with the **6th Skin Microbiome & Cosmeceuticals Congress**.

This world-renowned event which regularly attracts over 250 industry, academic, and investment leaders last year, enables the discussion of the most scientific cutting-edge microbiome, probiotics and skin-based research; the challenges and opportunities in translating research towards commercialisation, and partnerships and collaborations that secure investment. With 3 conferences and 8 tracks focusing on the topics below, there is ample content to learn from top scientists, network and broaden your connections and should you wish showcase your work in the poster presentation sessions or get involved in the interactive panel and roundtable discussions.

	Microbiome & Probiotics R&D and Business Collaboration Forum			Skin & Cosmeceuticals Congress
	Room 1	**Room 2**	**Room 3**	**Room 4**
Day 1	Gut Microbiota for Health & Disease & Drug Development	Gut-Brain Axis	Infant Health, HMO & Nutrition	Skin Microbiome & Cosmeceuticals
Day 2	Investment, Regulations & Manufacture	Women's Health & Urobiome	Probiotics, Personalised Nutrition & Cardiometabolic Diseases	Skin Microbiome & Cosmeceuticals

- 75 strong senior level speaker faculty
- Expert-led roundtables and interactive panel sessions
- Two 50-minute start-up flash presentation sessions
- Unique academic and industry joint focus
- Over 7 hours of networking time
- A fantastic reputation as the number one microbiome scientific & networking event.



I am pleased to support the upcoming Microbiome R&D and Business Collaboration Congress in San Diego this October.

Advances in the last few years have provided a much deeper understanding of the complex and dynamic microbial communities that inhabit our bodies and impact our health. High-throughput sequencing and bioinformatics have facilitated more detailed and accurate analyses of microbial communities, revolutionizing our approach to microbiome research. We now know that the microbiome affects everything from mucosal and systemic immune function to mental health and chronic diseases.

Research has led to the creation of targeted live biotherapeutic products to optimize the vaginal microbiome to improve reproductive health outcomes. Yet completing the development process to receive FDA approval has proved challenging. However, clinical trials are taking place and are showing promise for the treatment of bacterial vaginosis and the prevention of preterm birth. In addition, clinical trials of live biotherapeutics have demonstrated efficacy to treat IBS, a range of skin conditions and improve infant health.

I'll be giving the opening keynote on the potential of live biotherapeutic products to improve vaginal health. Bacterial vaginosis is a common issue with high recurrence rates, but a live biotherapeutic, *Lactobacillus crispatus* (LACTIN-V), is showing promise in reducing BV and inflammation associated with HIV susceptibility.

The advances are exciting, but we must continue studying these treatments to ensure long-term benefits. I look forward to our discussions at the congress on how we can accelerate the advancement of live biotherapeutics to improve reproductive health!

Craig R. Cohen
Professor, Department of Obstetrics, Gynaecology & Reproductive Sciences, University of California, San Francisco

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MICROBIOME & PROBIOTIC SPEAKERS

DAVID A. MILLS
Distinguished Professor, Peter J. Shields Endowed Chair in Dairy Food Science, Department of Food Science and Technology, University of California-Davis

HAYDEH PAYAMI
Professor of Neurology and Genomics, Strain Endowed Chair in Parkinson's Disease, University of Alabama at Birmingham

SENIOR REPRESENTATIVE
Biose Industrie

AMIR ZARRINPAR
Chief Medical Officer and Co-Founder, Endure Biotherapeutics

BRADEN TIERNEY
Instructor, Weill Cornell Medical College / Harvard Medical School

ALEXANDRA CASTILLO-RUIZ
Assistant Professor, Michigan State University

ZAC LEWIS
Principal, Lewpine Consulting

XIN ZHOU
Research Scientist, Snyder Lab, Stanford

NOELLE PATNO
Chief Scientific Officer, Bened Life

JUN SUN
Professor/Associate Head, Department of Medicine, University of Illinois Chicago

GIULIO M PASINETTI
The Saunders Family Chair in Neurology, Professor in Neurology, Professor of Psychiatry, Professor of Geriatric and Adult Development Director, Icahn School of Medicine at Mount Sinai and JJ Peters Bronx VA Medical Center

CARLOTTA RONDA
Principal Investigator, Innovative Genomics Institute at UC Berkeley

JAMES MORTON
Consultant, Simons Foundation

DENISE KELLY
Investment Advisor, Seventure Partners

ALAN MURRAY
Chairman, Lactalogics

BHARAT DIXIT
Chief Technology Officer, Adiso Therapeutics

CRAIG R. COHEN
Professor, Department of Obstetrics, Gynaecology & Reproductive Sciences, University of California San Francisco

CASSANDRA ISLEY
Chief Executive Officer, Microbiome Alliance for Disease Prevention

KRYSTAL THOMAS-WHITE
Senior Scientist Evvy

REBECCA VONGSA
Technical Leader, Life Sciences, Kimberly Clark Corporation

PAUL CARLSON
Principal Investigator, Laboratory of Mucosal Pathogens and Cellular Immunology, CBER, FDA

LAURIE REY
Head of CDMO Business Development, Lallemand

RYAN GARRETT
Head of Process Development, Vedanta Biosciences

AMANDA L. LEWIS
Professor, Obstetrics, Gynecology, and Reproductive Sciences, UCSD

HANA JANEBDAR
Co-Founder & CEO, Juno Bio

OLIVER WORSLEY
CEO & Co-Founder, Sequential

LAURA SYCURO
Associate Profesor, University of Calgary

ALEX SAKATOS
Co-Founder & CEO, Ancilia Biosciences

CECILE VERNOCHET
Discovery Project Lead, Gates Medical Research Institute

KIMBERLEY SUKHUM
Head of Science, Tiny Health

SENIOR REPRESENTATIVE
Cryptobiotix

PEDRO J. TORRES
Principal Scientist, Computational Biology and Data Science, Persephone Biosciences

JESSICA O'CONNELL
Partner, Covington & Burling LLP

REN-HAU LAI
Director of Innovation and Product Development, Athletic Greens

STEPHANIE FRALEY
Associate Professor
Shu Chien-Gene Lay Dept of Bioengineering, UCSD

CHERYL SEW HOY
CEO & Founder, Tiny Health

LEILA STRIKLAND
CEO & Co-Founder, BIOMILQ

AMBER TEUFEL
Group Head/Microbiologist, Baby, Feminine, and Family Care R&D Life Sciences Division, Procter & Gamble

NOAH ZIMMERMAN
Chief Technology Officer, Verb Biotics

AMY SMITH
Director, Global Regulatory Affairs - Health, IFF

JASON BUSH
Chief Scientific Officer, Solnul

SE JIN SONG
Director of Research, Applications for Microbiome Innovation, UCSD

JOHANNA MAUKONEN
Global Director, Clinical Innovation & Translation, IFF

JONATHAN SCHEIMAN
Founder & CEO, FitBiomics

CRISTINA LLORENTE
Assistant Professor, Div. Gastroenterology, Dept. Medicine, UC San Diego

AUBREY LEVITT
CEO, Postbiotics Plus Research LLC

JUN DENG
Investment Partner, Joyance Partners

NOEL MUELLER
Associate Professor, University of Colorado Department of Pediatrics and Johns Hopkins Bloomberg School of Public Health

SATHYA JANARDHANAN
Vice President of Development & Manufacturing, Rise Therapeutics

ALEX MARTINEZ
CEO and Co-Founder, Intrinsic Medicine

ETHAN THAI
Microbiome Service Operation Manager, Zymo Research Corporation

SYLVIE BINDA
R&D Vice President, Lallemand Health Solutions

BRUNO BALEN
Co-founder, Ani Biome

SKIN MICROBIOME SPEAKERS

JULIA DURACK
VP of R&PD, Symbiome; Director, Holobiont Medical Research Foundation

CHERI ACKERMAN
Co-Founder & CEO, Concerto Biosciences

KERA NYEMB-DIOP
Lead Nutritionist, Fonterra

NATALISE ROBINSON
Co-Founder, Parallel Health

TIINA MEDER
CEO & Founder, Meder Beauty

BRADLEY RINGEISEN
Executive Director, Innovative Genomics Institute (IGI)

LADA RASOCHOVA
CEO, Dermala

BRENT RIDGE
Co-Founder, Beekman1802

ANDREA NARDELLI
Post-Doctoral Fellow McMaster University- Farncombe Family Digestive Health Research Institute

FERANMI ABODERIN
Scientist I, Arcaea

NICOLE SCOTT
Founder & CEO, Cybele

JOSH PARRIS
Senior Scientist, Life Sciences, Kimberly Clark Corporation

ERIC (CHUN MING) HUANG
Professor, Arizona State University, USA

ANGELA CHRISTIANO
Professor of Genetics & Development, Columbia University

PING HU
R&D Director, Principal Scientist, Research & Development, Procter & Gamble

ELSA JUNGMAN
Founder & CEO, HelloBiome

VENUE INFORMATION

SAN DIEGO MARRIOTT LA JOLLA

4240 La Jolla Village
La Jolla
CA 92037

www.marriott.com/en-us/hotels/sanlj-san-diego-marriott-la-jolla

La Jolla hotel's location is perfect, in San Diego's Golden Triangle. The hotel offers convienient access to the University of California at San Diego Scripps Research Institute and La Jolla Shores.

8:00-8:50 | La Jolla Ballroom ABCD | Registration & Refreshments

8:50-9:00 | Global Engage Welcome Address

La Jolla Ballroom – Salon E

MICROBIOME R&D & BUSINESS COLLABORATION FORUM

Chair: **Ren-Hau Lai**, Director of Innovation and Product Development, Athletic Greens

9:00-9:45

KEYNOTE ADDRESS:

DAVID A. MILLS

Distinguished Professor, Peter J. Shields Endowed Chair in Dairy Food Science, Department of Food Science and Technology, University of California-Davis

The milk-enriched infant gut microbiome drives functional capacity during both breast feeding and weaning

Milk directs the enrichment of the neonatal gut microbiome, an assembled "organ" with important consequences on host health. A prominent feature of human milk is an array of glycans that enrich a protective microbiota often dominated by bifidobacteria. This milk-enriched gut microbiome naturally transforms upon the consumption of solid foods resulting in a rearrangement of gut taxa and associated functions. Recently, we have identified how specific milk glycans induce expression of genes that promote growth on plant polysaccharides among select bifidobacteria, suggesting that milk also prepares gut taxa for the weaning transition. Moreover, advances in new glycomics tools and databases, including the Davis Food Glycopedia, are increasing our understanding of complex polysaccharides in weaning foods and their catabolism by the infant gut microbiota. Analysis of these natural process will shed light on dietary and probiotic tools to promote a protective gut microbiota for at-risk neonates from birth through weaning.

9:45-10:20

KEYNOTE ADDRESS:

HAYDEH PAYAMI

Professor of Neurology and Genomics, Strain Endowed Chair in Parkinson's Disease, University of Alabama at Birmingham

Changing the landscape of Parkinson's disease

90 disease-associated genes and numerous well-established environmental risk factors could not explain PD. First emerging in 2015, microbiome studies have since shed new lights on the PD landscape, unearthed new players in PD pathogenesis, and provided new targets for treatment.

10:20-10:50

SENIOR REPRESENTATIVE

Biose Indutrie

La Jolla Ballroom – Salon H

SKIN MIROBIOME & COSMECEUTICALS CONGRESS

Chair: **Andrea Nardelli**, Post-Doctoral Fellow McMaster University- Farncombe Family Digestive Health Research Institute

9:00-9:45

KEYNOTE ADDRESS:

ROBERT BRUCKER (Reserved)

Co-Founder and Chief Scientific Officer, Dermbiont

Skin Microbiome Case Study

9:45-10:20

JULIA DURACK

VP of R&PD, Symbiome; Director, Holobiont Medical Research Foundation

Expanding the population demographic in microbiome studies challenges our prevailing concepts of a healthy adult skin microbiome

- The importance of improving understanding of skin microbiomes from around the globe
- Lessons from broadening the population demographic in microbiome studies
- Applying these findings to facilitate product development.

10:20-10:50

30-Minute Solution Provider Presentation

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10:50-11:40 | La Jolla Ballroom ABCD | Morning Refreshments / One-to-One Partner Meetings / Poster Presentations

La Jolla Ballroom – Salon E

GUT MICROBIOTA FOR HEALTH & DISEASE

Chair: **Ren-Hau Lai**, Director of Innovation and Product Development, Athletic Greens

11:40-12:05

AMIR ZARRINPAR

Associate Professor, Division of Gastroenterology, University of California, San Diego

The Therapeutic Potential of Engineered Native Bacteria

We present pioneering research focusing on functional manipulation of the gut microbiome with engineered native bacteria. This innovative approach is licensed by Endure Biotherapeutics. By engineering bacteria native to the luminal

La Jolla Ballroom – Salon F

GUT-BRAIN AXIS

Chair: **Jun Sun**, Professor/Associate Head, Department of Medicine, University of Illinois Chicago

11:40-12:05

GIULIO M PASINETTI

The Saunders Family Chair in Neurology, Professor in Neurology, Professor of Psychiatry, Professor of Geriatric and Adult Development Director, Icahn School of Medicine at Mount Sinai and JJ Peters Bronx VA Medical Center

Role of the Immune T Regulatory Cells in Mood Disorders and Alzheimer's Disease Phenotype as a therapeutic target in Altered Gut-brain Axis cross-talking

La Jolla Ballroom – Salon G

INFANT HEALTH, HMO & NUTRITION

Chair: **Noel Mueller**, Associate Professor of Epidemiology, Johns Hopkins Bloomberg School of Public Health

11:40-12:05

CECILE VERNOCHET

Discovery Project Lead, Gates Medical Research Institute

***Bifidobacterium longum ssp infantis* to Support Weight Gain in Underweight Infants in the LMIC Setting**

Undernutrition claims over 3 million children annually, with 45% of under-5 deaths attributed to it, mostly in LMICs (WHO, 2021). Gut microbiome changes are linked to childhood malnutrition

La Jolla Ballroom – Salon H

SKIN MICROBIOME & COSMECEUTICALS

Chair: **Andrea Nardelli**, Post-Doctoral Fellow McMaster University- Farncombe Family Digestive Health Research Institute

11:40-12:05

CHERI ACKERMAN

Co-Founder & CEO, Concerto Biosciences

Advances in a microbial ensemble for atopic dermatitis

- Concerto used its proprietary kChip technology to map the skin microbe interactome and identify Ensemble No.2 (ENS-002), a microbial ensemble that prevents the bacterium S. aureus from overgrowing and secreting toxins, an underlying cause of atopic dermatitis.

11:40-12:05

environment, we developed a technique to introduce specific functions into the gut, effectively changing physiology in conventional hosts and ameliorating chronic diseases with a single intervention in preclinical models. We present studies where we have used this intervention on preventing colorectal cancer in a mouse model of familial adenomatous polyposis, treating severe colitis in an animal model of inflammatory bowel disease, improving glucose homeostasis in a type 2 diabetes model, and improving health span in aged mice. This research promises significant therapeutic potential, offering new strategies for disease prevention and treatment.

11:40-12:05

The role of the gut-brain axis in the onset and progression of degenerative conditions, including Alzheimer's disease, will be discussed. In particular, the implication of the causative role of T-regulatory cells mediated influence on adaptive immunity in the gut-brain axis communication. Discussion of strategies to intervene in the brain degenerative progression by targeting selected T-regulatory mediated mechanisms to mitigate abnormal brain permeability and disease progression in response to stress-induced mood/ psychological impairment associated with the onset of Alzheimer's disease phenotype. Discussion of novel strategies to move from preclinical observations to the clinical setting.

11:40-12:05

and intestinal inflammation risk (Kane 2015). A healthy infant gut, rich in Lactobacillus and Bifidobacterium, supports vital functions like immune system development and resistance to pathogens. Gates MRI is conducting clinical trials investigating the potential of Bifidobacterium longum ssp infantis probiotic products to support weight gain in infants being treated for severe acute malnutrition. In addition, we are comparing mechanism of action and efficacy in preclinical models of commercial B.infantis probiotic strains.

11:40-12:05

- Learn about the kChip discovery technology that reveals the ecological underpinnings of the microbiome, thereby enabling the design of defined microbe-based interventions to benefit human health.
- Hear the latest update on ENS-002's manufacturing and first-in-human dose escalation trial.

12:05-12:30

BRADEN TIERNEY
Instructor, Weill Cornell Medical College /Harvard Medical School
Leveraging multi-omic data science to build the next-generation of microbial-based therapies

The next generation of microbial therapeutics (e.g., probiotics) will look nothing like what we see on shelves now. Generally, the organisms used in therapy development have been limited to a tiny window of the tree of life, comprising easily cultured and well-characterized species, with limited consideration for strain-level variation. The perhaps "best" strains for treating a given phenotype were either not known or not practical from a productization cost standpoint. However, three simultaneous advances will in the next decade flip this paradigm, allowing for the creation of functionally-driven, strain-specific microbial therapeutics. These are 1) multi-omic data science (e.g., DNA sequencing and metabolomics at massive scale), 2) high-throughput, high-volume culturomics, and 3) increasingly large human clinical cohorts with paired microbiome sequencing information. The union of these tools will enable the commercialization of microbial therapies that are directly built based on their relationship to specific human diseases and subpopulations. Here, I will discuss where to look for bellwethers in academic research signaling these advances, both in my work and the broader field, with an emphasis on the complex interplay between diet and gut microbiome interactions.

12:05-12:30

ALEXANDRA CASTILLO-RUIZ
Assistant Professor, Michigan State University
The maternal microbiota programs brain development in mice: a potential role for bacterial metabolites

Mammals experience a massive colonization by microorganisms at birth. We previously reported that germ-free (GF) newborn mice have altered brain development, including increased cell death in the hypothalamus. To test whether these effects are due to postnatal microbial exposure, or programmed in utero by the maternal microbiota, we cross-fostered GF newborns immediately after birth to conventionally colonized (CC) mothers, and collected their brains a week later. Interestingly, the GF brain phenotype largely persisted despite a normal microbiota, suggesting programing effects of the maternal microbiota. To probe for mechanism, we treated pregnant CC mice with bacterial metabolites and collected offspring during the first three days postnatal. We found that treatment reduced cell death in the hypothalamus. Thus, maternal bacterial metabolites may be important neurodevelopmental agents.

12:05-12:30

KIMBERLEY SUKHUM
Head of Science, Tiny Health
Tracking probiotic strains across the infant and child gut microbiome

- The first 1,000 days of life are critical for immune training. Infants with gut microbiome imbalances are at elevated risk of atopic disease including eczema and food allergies. Early action can shift microbiome composition and lower disease risk. The Tiny Health gut microbiome test empowers parents to take those early actions through personalized recommendations.
- The new Tiny Health Strain Tracker can track probiotic strain colonization and efficacy in remodeling the infant gut, characterize strain transfer from mother to infant, identify strain sharing between family members, and validate probiotic formulations at the strain level.
- This tool has enabled us to characterize probiotic strain presence across a width breadth of samples including unique disease conditions, diet, and other variables. We envision a future in which personalized gut microbiome care is the clinical standard.

12:05-12:30

KERA NYEMB-DIOP
Lead Nutritionist, Fonterra
Skin Microbiome Case Study

12:30-1:00

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12:30-1:30

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12:30-12:45

SENIOR REPRESENTATIVE
Cryptobiotix

12:30-12:45

ETHAN THAI
Microbiome Service Operation Manager,
Zymo Research Corporation
What 100 Femtograms of DNA Can Reveal with Shotgun Metagenomics Sequencing

Zymo Research's recent breakthroughs in shotgun metagenomics have enabled researchers to gain comprehensive insights into microbiomes with DNA inputs as low as 100 femtograms. This capability allows for enhanced taxonomic resolution and functional pathway analysis, providing a more detailed understanding of

12:30-1:00 — Continued

12:30-1:30 — Continued

12:30-12:45 — Continued

12:30-12:45 — microbial communities. By reducing the amount of DNA required, we can explore diverse environments and conditions, such as extreme habitats and clinical settings, where sample availability is limited. This advancement facilitates unbiased profiling and deeper exploration of microbial interactions and dynamics, leading to significant implications for health, agriculture, and environmental science. In this talk, we will examine how these developments open new avenues for microbiome research, enabling us to address complex biological questions and drive innovation

12:45-1:00 — **15-Minute Solution Provider Presentation**
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12:45-13:00 — **15-Minute Solution Provider Presentation**
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1:00-2:00 — La Jolla Ballroom ABCD — Lunch / One-to-One Partner Meetings

La Jolla Ballroom – Salon E

GUT MICROBIOTA FOR HEALTH & DISEASE

Chair: Jan Claesen, Assistant Professor, Department of Cardiovascular and Metabolic Sciences, Cleveland Clinic Lerner College of Medicine

2:00-2:30 — **30-Minute Solution Provider Presentation**
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2:30-2:55

XIN ZHOU
Research Scientist, Snyder Lab, Stanford
Longitudinal profiling of the microbiome at four body sites reveals core stability and individualized dynamics during health and disease

- Human microbiomes from different body sites are highly individualized and stable over time.
- Coordinated microbial dynamics between body sites are observed in response to disease
- Besides Gut microbiome, Skin microbial composition and stability are also altered with insulin resistance

La Jolla Ballroom – Salon F

GUT-BRAIN AXIS

Chair: Sylvie Binda, Vice-President R&D, Lallemand

2:00-2:30 — **30-Minute Solution Provider Presentation**
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2:30-2:55

NOELLE PATNO
Chief Scientific Officer, Bened Life
Trials To Testimonials: A Probiotic for Autism

Multiple trials have demonstrated that probiotic PS128 benefits Autistic children, but what about Autistic adults? Through three randomized, double-blind, placebo-controlled trials and one real world study, Lactiplantibacillus plantarum PS128 addressed anxiety and other behaviors in autistic children, enrolling people younger than 20. This talk will review the evidence of how PS128 provides benefits in autism and show lessons learned from the field through analysis of customers' satisfaction with the product containing PS128.

La Jolla Ballroom – Salon G

INFANT HEALTH, HMO & NUTRITION

Chair: Stephanie Fraley, Associate Professor, Shu Chien-Gene Lay Dept of Bioengineering, UCSD

2:00-2:30 — **30-Minute Solution Provider Presentation**
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2:30-2:55

PEDRO J. TORRES
Principal Scientist, Computational Biology and Data Science, Persephone Biosciences
My Baby Biome Study: A Data-Driven Approach to Infant Probiotic Development

The infant microbiome plays a crucial role in establishing a healthy host-microbiome relationship. Recent research has identified a critical window in early-life (the first 3 months) where gut microbial dysbiosis has the most impact on human immune development. Existing infant microbiome datasets lack comprehensive multi-omics analysis and sufficient racial and ethnic diversity for population-wide biomarker discovery. Persephone Biosciences addressed this gap through the My Baby Biome (MBB) study, enrolled ~700 infants up to the age of 3 months across the U.S, representative of US birth and feeding modes Using shotgun metagenomic sequencing and metabolomics, we identified three microbiome compositional clusters. A healthy cluster was distinguished by high Bifidobacterium levels and association with specific anti-inflammatory metabolites. Further exploration of MBB isolated strains and

La Jolla Ballroom – Salon H

SKIN MICROBIOME & COSMECEUTICALS

2:00-2:30 — **30-Minute Solution Provider Presentation**
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2:30-2:55 — No Track Talk

2:30-2:55

Continued

2:55-3:45

POSTER PRESENTATION FLASH PRESENTATIONS & START-UP SHOWCASE PRESENTATIONS

Poster presenters and start-up companies will be provided with the opportunity to give a flash 3-minute overview of their work

Full list of talks shown at the end of day 1.

2:30-2:55

Continued

2:55-3:20

JUN SUN
Professor/Associate Head, Department of Medicine, University of Illinois Chicago
Microbiome and metabolite regulate the progression of ALS through the gut-brain axis

Amyotrophic lateral sclerosis is a neurodegenerative disorder. Despite extensive studies, it remains challenging to treat ALS. Recent ALS studies have shown dysbiosis is correlated with intestinal inflammation and change of intestinal integrity in ALS. The novel concepts and the roles of microbiome and microbial metabolites through the gut-microbiome-neuron axis in ALS pathogenesis have been slowly recognized by the neurology research field. Here, we will discuss our new data and understanding of microbial metabolites in reducing TDP43 aggregation and inflammation in ALS. We propose that the mechanistic and translational studies that shift from suspension of disbelief to cogent ingenuity, and from bench study to bed-side application, should allow new strategies of diagnosis and treatment for ALS.

3:20-3:45

ALEX MARTINEZ
CEO and Co-Founder, Intrinsic Medicine
A Prebiotic Approach to Treat Gut Immune Microbiome Brain Axis Disorders (GIMBADs)

Mounting evidence implicates the complex interaction between the gut microbes, immune system, and central nervous system in a number of severe and chronic conditions including Parkinson's disease, Autism Spectrum Disorders (ASD) and Alzheimer's disease suggesting they be evaluated as Gut-Immune-Microbiome-Brain-Axis Disorders (GIMBADs). Prebiotics are key in modulating this axis; among these, Human Milk Oligosaccharides (HMOs) stand out for their unique ability to selectively nourish beneficial gut bacteria, inhibit pathogenic bacteria, and modulate the immune and nervous systems. These non-digestible carbohydrates have a proven safety profile, and have been shown to impact neuroinflammation and neurotransmitter production both critical in the pathology of disorders such as Parkinson's disease. By focusing on the therapeutic potential of HMOs, we can leverage compounds fundamental to human development to address neurodegenerative diseases, as well as other GIMBADs.

2:30-2:55

commercial strains in ex-vivo gut environments revealed their impact on microbial composition and function. These findings provide a data-driven approach to infant probiotic development.

2:55-3:45

CROSS-EVENT ROUNDTABLES - SESSION ONE

Roundtables are informal, small-group interactive discussions on key topics in the field. Discussion leaders will introduce sub-topics/questions for discussion and roundtable attendees are encouraged to participate actively in the session.

Roundtable 1:
JESSICA O'CONNELL
Partner, Covington & Burling LLP
Probiotics Claims and IP

Roundtable 2:
REN-HAU LAI
Director of Innovation and Product Development, Athletic Greens
The challenge of probiotic product development and the future

Roundtable 3:
STEPHANIE FRALEY
Associate Professor, Shu Chien-Gene Lay Dept of Bioengineering, UCSD
Antibiotics and Infant health

Roundtable 4:
CHERYL SEW HOY
CEO & Founder, Tiny Health
New discoveries leveraging at-home microbiome profiling and probiotic strain tracking via shotgun metagenomics

Full details shown on page 17

2:30-2:55

Continued

2:55-3:45

PANEL DISCUSSION

Paving the way to clinical validity and improving health outcomes in the microbiome industry

NATALISE ROBINSON (Chair)
Co-Founder, Parallel Health

TIINA MEDER
CEO & Founder, Meder Beauty

BRADLEY RINGEISEN
Executive Director, Innovative Genomics Institute (IGI)

LADA RASOCHOVA
CEO, Dermala

3:45-4:35 | La Jolla Ballroom ABCD | Afternoon Refreshments / One-to-One Partner Meetings / Odd Numbered Poster Presentations

4:35-5:05

30-Minute Solution Provider Presentation
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5:05-5:30

CARLOTTA RONDA
Principal Investigator, Innovative Genomics Institute at UC Berkeley
Targeted microbiome engineering

- In vivo Microbiome Engineering
- Human-Microbiome interactions
- Microbiome-based Therapeutics

5:30-6:20

PANEL DISCUSSION
The Shifting Winds of Microbiome Investment

MALCOLM KENDALL (Chair)
Co-Founder & CEO, Microbiome Insights, Inc., Canada

DENISE KELLY
Investment Advisor, Seventure Partners

ALAN MURRAY
Chairman, Lactalogics

JUN DENG
Investment Partner, Joyance Partners

4:35-5:05

30-Minute Solution Provider Presentation
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5:05-5:30

JAMES MORTON
Consultant, Simons Foundation
Multi-level analysis of the gut–brain axis shows autism spectrum disorder-associated molecular and microbial profiles

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by heterogeneous cognitive, behavioral and communication impairments. Disruption of the gut–brain axis (GBA) has been implicated in ASD although with limited reproducibility across studies. Here, we developed a Bayesian differential ranking algorithm to identify ASD-associated molecular and taxa profiles across 10 cross-sectional microbiome datasets and 15 other datasets, including dietary patterns, metabolomics, cytokine profiles and human brain gene expression profiles. We found a functional architecture along the GBA that correlates with heterogeneity of ASD phenotypes, and it is characterized by ASD-associated amino acid, carbohydrate and lipid profiles predominantly encoded by multiple microbial species and correlates with brain gene expression changes, restrictive dietary patterns and pro-inflammatory cytokine profiles. We also show a strong association between temporal changes in microbiome composition and ASD phenotypes in the context of a fecal matter transplant.

5:30-5:55

BHARAT DIXIT
Chief Technology Officer, Adiso Therapeutics
Development of a SS-LBP, ADS024, for the treatment of PD

Over the years, evidence for a close link between the gut and brain (gut-brain axis) has been mounting, leading to a paradigm shift in the understanding of diseases involving the nervous system, including Parkinson disease (PD) and multiple sclerosis (MS), to name a few. It has been recognized that some microbes in the gut modulate the production of several metabolites that have neuromodulatory functions and signal via the vagus nerve and the circulation. ADS024 is a single-strain live biotherapeutic (SS-LBP) that can impact the nervous system via its unique properties and is currently being studied for the treatment of Parkinson disease.

4:35-5:05

30-Minute Solution Provider Presentation
For sponsorship opportunities contact
Gavin Hambrook
gavin@globalengage.co.uk

5:05-5:30

LEILA STRIKLAND
CEO & Co-Founder, BIOMILQ
BIOMILQ on expanding the possibilities for HMOs with mammary-based biomanufacturing

Of the ~200 known HMO structures, less than 10% can be produced commercially today. BIOMILQ is building a novel, patented process to unlock the other 90% by leveraging the unique capability of human mammary epithelial cells (hMECs). Due to the complex enzymatic pathways involved in HMO production – a challenge that has held the field back for over a decade – hMECs may be the only feasible platform to produce structurally complex HMOs. BIOMILQ is at the forefront of building a system to produce a complex mixture of HMOs that support infant gut, immune, and brain health, in addition to other applications for improving health across the lifespan.

5:30-5:55

NOEL MUELLER
Associate Professor of Epidemiology, Johns
Infant Health, HMO & Nutrition Case Study

Determinants, health consequences, and restoration of key features of the infant gut microbiome

- Mother-infant sharing of vaginal and gut microbes, including B. infantis and other bifidobacteria
- Factors that impact mother-infant sharing of microbes
- Associations of infant microbiota features with cardiometabolic health and the modifying role of breastfeeding
- Restoration of the infant microbiota by vaginal seeding and its effects on cardiometabolic outcomes

4:35-5:05

30-Minute Solution Provider Presentation
For sponsorship opportunities contact
Gavin Hambrook
gavin@globalengage.co.uk

5:05-5:30

TIINA ORASMÄE-MEDER
CEO and founder ,
Meder by Dr Tiina Meder
Sensitive skin microbiome: latest findings and clinical cases.

- The relationship between skin microbiome and sensitivity remains unclear, but a new consensus suggests a balanced interplay between skin cells and bacterial populations maintains healthy skin barrier integrity.
- Recent findings indicate a unique sensitive skin microbiome has lower diversity and reduced S. epidermidis compared to non-sensitive skin. This can be particularly relevant for individuals with compromised skin barriers, such as those with sensitive, reactive skin, or those suffering from allergies or dermatosis such as acne, rosacea.
- Cosmeceutical ingredients that increase an amount of free water in the Stratum Corneum, along with prebiotics promoting S. epidermidis growth and suppressing C. acnes or P. ovale, show therapeutic potential. Clinical cases using skincare with prebiotics and symbiotic ingredients in sensitive skin demonstrate efficacy, offering insights for dermatologists and public recommendations.

5:30-5:55

BRENT RIDGE
Co-Founder, Beekman1802
The Science of Kindness

Beekman 1802 is a skin health company with two key ingredients: goat milk and Kindness and is one of the fastest growing beauty companies in America. Learn their approach to product development and consumer education around the microbiome. An insightful discussion of how the research you are conducting now gets into the hands of the consumer of the future.

5:30-6:20

Continued

5:55-6:20

BRUNO BALEN
Co-founder, Ani Biome
Decoding the Longevity Algorithm: AI-Driven Modulation of the Gut-Immune-Brain Axis

- AI-Driven Insights: Development of advanced machine learning algorithms to decode complex interactions within the gut-immune-brain axis, facilitating predictive modeling and biomarker discovery
- Personalized Therapies: Utilization of AI for creating clinically validated, personalized compounds (AgeBiotics) as adjunct therapies, tailored through longitudinal multispectral diagnostics
- Gut-Brain Modulation: Elucidation of the direct dialog between gut microbiota and brain function, impacting cognitive capacity, emotional flexibility, and immune system health
- Longevity Algorithm: Introduction of the concept that future longevity interventions may not be single molecules, but algorithms integrating multiple stimuli, including medicine and nutraceuticals

5:55-6:20

AMBER TEUFEL
Group Head/Microbiologist, Baby, Feminine, and Family Care R&D Life Sciences Division, Procter & Gamble
What's bugging your baby's skin?: insights from healthy and diaper dermatitis skin

It has been recognized for nearly a century that human beings are inhabited by a remarkably dense and diverse microbial ecosystem, yet we are only just beginning to understand and appreciate the many roles that these microbes play in human health and development. Previous studies on infant skin health has focused on Candida species but little is known on the full microbial composition across different areas and even less is known on how these communities change during disease/inflammatory states. This clinical trial revealed to us distinct communities that exist across 4 different regions of the diapered area as well as demonstrated trends in how the populations change from healthy skin to disease state. We will discuss these microbial communities and what the indications are for understanding the roles it plays in disease states like diaper dermatitis (DD).

5:55-6:20

ANDREA NARDELLI
Post-Doctoral Fellow McMaster University- Farncombe Family Digestive Health Research Institute
Skin dysbiosis as a complication of biologics and immunosuppressant agents use: challenges and future directions

Description of Skin lesions in patients treated with immunosuppressant and other biological agents, such as atopic dermatitis, sensitive skin, psoriasiform eczema, and acneiform dermatitis; presentation of complex clinical pictures. The consideration arises whether skin dysbiosis contributes to the pathophysiology of these manifestations as complications of immunosuppressant agent use. The potential impact of therapeutic manipulation of skin microbial communities, including the use of pre- and probiotics, emerges as an intriguing avenue to explore in efforts to maintain skin health.

6:20 Drinks Reception / End of Day 1

8:00-8:55 | La Jolla Ballroom ABCD | Registration & Refreshments

8:55-9:00 | Global Engage Welcome Address

La Jolla Ballroom – Salon E

MICROBIOME R&D & BUSINESS COLLABORATION FORUM

Chair: Xin Zhou, Research Scientist, Snyder Lab, Stanford University of Medicine

9:00-9:45

KEYNOTE ADDRESS:
CRAIG R. COHEN
Professor, Department of Obstetrics, Gynaecology & Reproductive Sciences, University of California San Francisco
The Potential of Live Biotherapeutic Products to Optimize the Vaginal Microbiome to Improve Reproductive Health
Bacterial vaginosis (BV), a proinflammatory genital condition marked by high bacterial diversity and diminished Lactobacillus species, is linked with increased HIV transmission risks and preterm birth. BV is highly prevalent, with greater risk among African American and Hispanic women in the U.S. and in Africa. Antibiotic treatment of BV, though standard, faces high recurrence rates, possibly due to the inability to promote Lactobacillus growth. An innovative treatment strategy employing a live biotherapeutic Lactobacillus crispatus (LACTIN-V) has shown promise optimizing the vaginal microbiome, reducing recurrent BV, and mitigating the genital tract's inflammatory milieu, thus decreasing HIV susceptibility. Future studies are imperative to evaluate long-term BV treatments with live biotherapeutics that encourage colonization with H2O2-producing vaginal lactobacilli.

9:45-10:20

KEYNOTE ADDRESS:
CASSANDRA ISLEY
Chief Executive Officer, Microbiome Alliance for Disease Prevention
Microbiome Medicine: Combating Chronic Inflammatory Disease States
The gut microbiome's influence on the immune system is profound and far-reaching. The gut microbiota can modulate our immune responses, both in the gut and throughout the body. Incorporating the critical components of immune health, metabolic health, and the health of the microbiome is essential in preventing and combating chronic inflammatory disease states. The future of medicine is strongly related to the quality of our gut microbiome and has profound implications for disease prevention.

10:20-10:50

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

La Jolla Ballroom – Salon H

SKIN MICROBIOME & COSMECEUTICALS CONGRESS

Chair: Oliver Worsley, CEO, Sequential Skin

9:00-9:30

SENIOR REPRESENTATIVE (Reserved)
Invitation Out
Skin Microbiome Case Study

9:30-9:55

FERANMI ABODERIN
Scientist I, Arcaea
Microbiome Modulation for Effective Odor Control
Traditionally, deodorants have used chemistry-based methods to prevent malodor, often ignoring underlying biological factors and sometimes causing side effects like irritation, itch, and inflammation. Our research introduces a novel biology-first approach to personal care, aiming to control axillary odor through skin microbiome modulation. By harnessing bioinformatics, machine learning, and high-throughput screening, we developed ingredients designed to produce desired microbiome shifts. These ingredients were benchmarked in vitro for efficacy using metabolic assays and next-generation sequencing, and further validated in volunteer in-vivo trials, confirming microbial shifts and malodor prevention. This approach demonstrates the effectiveness of microbiome modulation in managing axillary malodor.

9:55-10:20

NICOLE SCOTT
Founder & CEO, Cybele
Skin Microbiome Case Study

10:20-10:50

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

10:50-11:40 | La Jolla Ballroom ABCD | Morning Refreshments / One-to-One Partner Meetings / Poster Presentations

La Jolla Ballroom – Salon E

REGULATION AND MANUFACTURE

Chair: Xin Zhou, Research Scientist, Snyder Lab, Stanford University

11:40-12:10

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

La Jolla Ballroom – Salon F

UROLOGY & WOMEN'S HEALTH

11:40-12:10

SYLVIE BINDA
Vice-President R&D, Lallemand
Understanding the Microbiome and the Influence of Probiotics in Women's Health Throughout Their Lives
Probiotic-supported modulation of the gut and

La Jolla Ballroom – Salon G

PROBIOTICS, PERSONALIZED NUTRITION & CARDIOMETABOLIC DISEASES

Chair: Michael Hartman, Vice President of Research and Development, Plexus Worldwide

11:40-12:10

30-Minute Solution Provider Presentation
For sponsorship opportunities contact Gavin Hambrook
gavin@globalengage.co.uk

La Jolla Ballroom – Salon H

SKIN MICROBIOME & COSMECEUTICALS

11:40-12:10

PANEL DISCUSSION:

ELSA JUNGMAN (Chair)
Founder & CEO, HelloBiome
AI and the Microbiome

11:40-12:10

Continued

12:10-1:00

POSTER PRESENTATION FLASH PRESENTATIONS & START-UP SHOWCASE PRESENTATIONS

Poster presenters and start-up companies will be provided with the opportunity to give a flash 3-minute overview of their work.

Full list of talks shown at the end of day 1.

11:40-12:10

vaginal microbiomes, two dynamic environments with significant impacts on women's health status, shows encouraging results to support women's health throughout their lives. A recent study showed that probiotics could preserve gastrointestinal function and alleviate some menstrual symptoms during this uncomfortable and stressful period. In other studies, we showed that the perinatal use of probiotics in pregnant women, who are more susceptible to infections, could reduce infections and regulate microbiome fluctuations, respectively. Moreover, due to the early exposure to beneficial microbes through vertical transfer during delivery and via breastfeeding, perinatal probiotic use by the mother exerted positive effects on the newborn. Overall, our recent studies confirmed the promising effects of probiotics in the management of gastrointestinal symptoms during menstruations, the maintenance of a healthy pregnancy as well as beneficial effects on the infant gut microbiome establishment.

12:10-12:35

KRYSTAL THOMAS-WHITE
Senior Scientist Evvy
The Vaginal Microbiome & DTC Women's Health

The vaginal microbiome is a critical component of female health. More than 30% of people with vaginas suffer from imbalances in the microbiome (e.g. bacterial vaginosis, yeast infections, and recurrent UTIs) that drastically affect our quality of life. Additionally, research has uncovered groundbreaking links between the vaginal microbiome and infertility, HIV risk, preterm birth, gynecologic cancers, and more. Evvy's longitudinal, metagenomic testing is unlocking personalized definitions of health and disease in the vagina and providing women with education and insights about their vaginal health along the way. This talk will highlight how Evvy is leveraging the vaginal microbiome to positively impact women's health outcomes.

12:35-1:00

REBECCA VONGSA
Technical Leader, Life Sciences, Kimberly Clark Corporation
Factors Influencing the Vulva skin Microbiome and its Impact on Feminine Wellness

A healthy vulvar microbiome is important part of feminine health. Disruption of the microbiome balance in the vulva can contribute to infection, discomfort, and irritation. Age, genetics, and health conditions can alter the vulvar microbiome. Herein, the effect of age, body mass index, and urinary incontinence have on the vulvar microbiome will be discussed. Furthermore, principles to support a healthy vulvar microbiome and importance of science informed guidelines for vulvar hygiene will be presented.

11:40-12:10

Continued

12:10-12:35

NOAH ZIMMERMAN
Chief Technology Officer, Verb Biotics
Tailoring the microbiota to the diet for targeted metabolite production

The diet provides a treasure trove of material for the production of bioactive metabolites. Many of these metabolites are generated by members of the microbiome. However, a lack of either the right diet or the right microbiome members can have a significant impact on the availability of health promoting metabolites in the body. Supplementation of probiotics that work synergistically with the diet to produce targeted metabolites through biotransformation, open up the opportunity to enrich the nutritional and health benefits of the diet.

12:35-1:00

AMY SMITH
Director, Global Regulatory Affairs - Health, IFF
Regulatory Strategy for Next Generation Probiotics

Novel and next generation probiotics require "extra" regulatory know-how, concerning safety, categorization and strategic marketing.

11:40-12:10

Continued

12:10-1:00

CROSS-EVENT ROUNDTABLES - SESSION TWO

Roundtables are informal, small-group interactive discussions on key topics in the field. Discussion leaders will introduce sub-topics/questions for discussion and roundtable attendees are encouraged to participate actively in the session.

Roundtable 1:
TIINA ORASMÄE-MEDER
CEO and founder , Meder by Dr Tiina Meder
How to speak about a microbiome: educational challenge in skincare industry

Roundtable 2:
SATHYA JANARDHANAN
VP, Manufacturing, Rise Therapeutics
LBP Manufacturing TBC

Roundtable 3:
CRISTINA LLORENTE
Assistant Professor, Div. Gastroenterology, Dept. Medicine, UC San Diego
The Gut Microbiome's Impact on Liver Disease: Exploring Novel Therapies

Roundtable 4:
AUBREY LEVITT
CEO, Postbiotics Plus Research LLC
Bioactive compounds and the gut microbiome

Full details shown on page 17

1:00-2:00 | La Jolla Ballroom ABCD | Lunch / One-to-One Partner Meetings

La Jolla Ballroom – Salon E

GUT MICROBIOTA FOR HEALTH & DISEASE

Chair: **Bharat Dixit**, Chief Technology Officer, Adiso Therapeutics

2:00-2:50

50 MINUTE PANEL DISCUSSION

Current Challenges and Future Opportunities in LBP Manufacturing

- Identify and discuss the current major hurdles in LBP manufacturing, key pain points
- New analytical tools to support LBP characterization, release and stability
- Weigh the pros and cons of internal versus external manufacturing (single strain vs consortia, strict vs facultative aerobe, aerobes)

Key questions

- What are the current major hurdles in LBP manufacturing? Are we still struggling with capacity and/or expertise
- What are the latest developments and most important advances in manufacturing of typical vs highly sensitive strains?
  - How can we leverage prior knowledge developing difficult to grow/scale strains
- Global regulatory convergence, What is the status of the Regulatory framework (US vs EU) for production and registration of LBPs?
- The potency of the product and it's effect, are we still relying of CFU or something better?
- What are the main considerations regarding internal vs external manufacturing?

BHARAT DIXIT (Chair)
Chief Technology Officer, Adiso Therapeutics

PAUL CARLSON
Principal Investigator, Laboratory of Mucosal Pathogens and Cellular Immunology, CBER, FDA

SATHYA JANARDHANAN
VP, Manufacturing, Rise Therapeutics

LAURIE REY
Head of CDMO Business Development, Lallemand

SENIOR REPRESENTATIVE
Biose

RYAN GARRETT
Head of Process Development, Vedanta Biosciences

La Jolla Ballroom – Salon F

UROLOGY AND WOMEN'S HEALTH

AMANDA L. LEWIS
Professor, Obstetrics, Gynecology, and Reproductive Sciences, UCSD

2:00-2:25

Preclinical models for validation and quality control of electrospun fibers and 3D bio-printed scaffolds as vaginal therapeutic delivery platforms

Current treatments for BV to restore a balanced vaginal microbiome rely on frequent user administration. There is a pressing need to quickly and more stably colonize the vagina with lactobacilli to avoid BV recurrence. Here, we validated a potential probiotic delivery device in our mouse model. L. crispatus-loaded fibers were placed into mouse vaginas with the goal of achieving colonization by L. crispatus without eliciting inflammation or injury. Our experiments show that vaginal colonization by L. crispatus can be achieved by incorporating polymers that sustain the release of live probiotics in the mouse vagina.

HANA JANEBDAR
Co-Founder & CEO, Juno Bio

2:25-2:50

Vaginal Microbiome Testing: Challenges and Opportunities

As the role of vaginal microbiome testing in radically improving patient outcomes is increasingly recognized, we map the trajectory, challenges, and opportunities in this evolving field. Key challenges from clinical integration to variability of data for R&D are weighed against the vast potential for personalized medicine and preventative care with real-world examples from Juno Bio's pioneering lab and customer base.

La Jolla Ballroom – Salon G

INFANT HEALTH, HMO & NUTRITION

Chair: **Ren-Hau Lai**, Director of Innovation and Product Development, Athletic Greens

JASON BUSH
Chief Scientific Officer, Solnul

2:00-2:25

Metabolomic and microbiome investigations in a prebiotic resistant starch clinical trial reveal novel pathways influencing lipid metabolism

Resistant starch (RS) has long been appreciated for metabolic benefits at high doses (+30g/day). We conducted the first low dose (3.5g/day) RS study and applied serum metabolomic analysis to evaluate system effects due to the consumption of this prebiotic. RS consumption led to a significant and clinically meaningful reduction in a non-glucose marker of insulin sensitivity. The application of metabolomic analysis in clinical trials, including study design, interpretation, and dietary supplement structure/function claims substantiation, will be discussed.

SE JIN SONG
Director of Research Programs, Center for Microbiome Innovation, UC San Diego

2:25-2:50

From gradients to bins: taking steps towards personalized nutrition

For both the gut microbiome and diet, the variation across people on the globe is vast and exists in a gradient. Both are multi-dimensional and are affected by and linked to numerous other factors. All of these features make it difficult to achieve truly personalized nutrition. However, we can work towards this goal in steps by binning individuals into more and more defined groups based on patterns in their microbiomes and diet.

La Jolla Ballroom – Salon H

SKIN MICROBIOME & COSMECEUTICALS

Chair: **Larry Weiss**, Founder & CEO, Symbiome

JOSH PARRIS
Senior Scientist, Life Sciences, Kimberly Clark Corporation

2:00-2:25

The skin microbiome of preterm infants and impact of diaper change frequency

Development of the cutaneous microbiome is important to overall health during the neonatal period and this may be especially true in preterm infants who are more susceptible to infection by opportunistic skin colonizers. In this study, we describe diversity and composition and evaluate the impact of diaper change frequency, clinical characteristics, and skin health metrics on the preterm infant skin microbiome. For diapered skin, diaper change frequency, diet, antibiotic exposure, and delivery mode were all associated with variation in microbiome composition. Microbiome diversity was inversely correlated with skin pH but not TEWL. Results presented here provide important insights into the drivers of microbiome development for preterm infants.

ERIC (CHUN MING) HUANG
Professor, Arizona State University, USA

2:25-2:50

Redox (Electrogenic) Bacteria as Biotherapeutics Against Oxidative Stress

Reactive oxygen species (ROS), a subset of free radicals, have been implicated in many human diseases. Our results have demonstrated that carotenoid-carried skin and gut bacteria are electrogenic and can yield electricity to rescue the redox imbalance caused by oxidative stress. Taking skin electrogenic bacteria for instance, we found that topical application of S. epidermidis plus glycerol on dorsal skin of ICR mice significantly attenuated ultraviolet (UV)-elevated liable ferrous ions as well as 4-hydroxy-2-nonenal (4-HNE), a free radical marker derived from lipid peroxidation. Incubation of carotenoids enhances electricity production of S. epidermidis. Electrogenic bacteria hold great potential as new biotherapeutics for treatments of free radical associated human diseases.

2:50-3:15

PAUL CARLSON
Principal Investigator, CBER, FDA
Regulatory Considerations for Microbiome Based Therapeutics

- An overview of CMC requirements for Live Biotherapeutic Products
- Discussion of assays for product characterization and release
- Presentation of proof of principle study assessing the use of MALDI-TOF for single strain enumeration from multi-strain mixtures

2:50-3:15

OLIVER WORSLEY
CEO & Co-Founder, Sequential
Leveraging Microbiome Samples from US, UK and Singapore to characterise Female Health

- Introduction to the vaginal microbiome and techniques used to study it
- 5,000 subject study on vaginal microbiome and differences between geographic regions, and ethnicities, from US to Europe to Asia
- The development of Sequential Smart Probes to quantify the vaginal microbiome at strain level to further characterise the diversity in health and infection

2:50-3:15

JOHANNA MAUKONEN
Global Director, Clinical Innovation & Translation, IFF
Novel *Akkermasia sp.* for metabolic health

In her presentation Dr. Maukonen will have a deeper dive on a discovery program of a novel Akkermansia sp. DSM33459 which showed significant differences in fatty acid profile and carbon utilization as compared to the type strain. It also showed agmatine production, suggesting a potential novel mechanism for supporting metabolic and cognitive health and was able to degrade extracellular ATP, suggesting a role in modulating inflammation in the gut.

- An observational clinical study was performed to collect fecal samples for microbiome and metabolomic assessment. Strains of health-related bacterial species were isolated based on the obtained data.
- Preclinical obesity model showed significant improvement in body weight, total fat weight, resistin, and insulin levels.
- Based on phenotypic features and phylogenetic position, it is proposed that this isolate is a promising candidate for the management of metabolic heath

2:50-3:15

JESSICA O'CONNELL
Partner, Covington & Burling LLP
Skin Microbiome Case Study - IP & regulations

3:15-3:40

SATHYA JANARDHANAN
VP, Manufacturing, Rise Therapeutics
Anaerobic development and manufacturing: available tools for early-stage companies, product development risks and mitigation strategies

- What are some of the key challenges encountered in the development of anaerobic lines?
- What are some key product development risks that should be assessed, addressed and developed early in the life cycle of the program
- What strategies are available for early-stage companies looking to embark on the
- launch of a microbiome product that involves an anaerobic organism

3:15-3:40

LAURA SYCURO
Associate Profesor, University of Calgary
Proteolytic Activity of the Vaginal Microbiome: A Novel Therapeutic Target?

In reproductive age women, a healthy vaginal microbiome is dominated by Lactobacillus species that protect the niche through the production of lactic acid. However, 10–30% of women exhibit anaerobic dysbiosis that can cause uncomfortable symptoms and result in a clinical diagnosis of bacterial vaginosis (BV). Proteolytic activity is elevated during BV, which in turn, is linked with poor outcomes such as preterm birth and HIV acquisition. Although this proteolytic activity has been attributed to host proteases, we have shown certain prevalent species of vaginal bacteria secrete potent host-targeting proteases. These bacterial proteases mimic the activity of human matrix metalloproteases (MMPs) and degrade cervical barrier proteins to promote bacterial translocation. Therapeutically targeting these unique enzymes could help prevent BV and promote sexual and reproductive health.

3:15-4:05

50 MINUTE PANEL DISCUSSION
Food vs. pharma paths to market for probiotics

Deciding how to bring new innovative probiotics to market is complicated. It involves analyzing the many trade offs between being a food or a drug from each of several different angles. This panel will discuss the impacts of the following considerations on creating a business plan:

- Regulatory constraints
- Supply chain set up
- Path to ROI
- Market/consumer demands

ZAC LEWIS (Chair)
Principal, Lewpine Consulting

NOAH ZIMMERMAN
Chief Technology Officer, Verb Biotics

AMY SMITH
Director, Global Regulatory Strategy Lead, IFF

DENISE KELLY
Investment Advisor, Seventure Partners

3:15-3:40

ANGELA CHRISTIANO
Professor of Dermatology and Genetics & Development, Columbia University
The Gut Microbiome-Hair Follicle Connection in Alopecia Areata

The gut microbiome has emerged as an important environmental contribution factor in many autoimmune diseases. Our work in alopecia areata points to the gut microbiome as a potential trigger for the immune response against the hair follicle. Recent evidence linking gut microbiome dysbiosis to alopecia areata opens a new avenue of investigation into restoration of the gut microbiome to homeostasis as a potential therapeutic approach for this and other autoimmune diseases.

3:40-4:05

RYAN GARRETT
Head of Process Development, Vedanta Biosciences
Critical Considerations of a Successful Live Biotherapeutic Product

Despite an abundance of academic research demonstrating the significance of the human microbiome on health, well being, and disease, converting this research into safe and efficacious FDA approved drugs has proved challenging. Over the past ten years, Vedanta has been a pioneer in applied science and CMC aspects of LBPs with internal development and manufacturing capabilities culminating in 32 strains produced for five clinical programs including late phase clinical trials. This internal development along with learnings from other companies in the field have revealed key attributes of LBPs that are necessary to maximize the chance of clinical success.

3:40-4:05

ALEX SAKATOS
Co-Founder & CEO, Ancilia Biosciences
Deciphering and targeting the virome

3:15-4:05

JONATHAN SCHEIMAN
Founder & CEO, FitBiomics

3:40-4:05

PING HU
R&D Director, Principal Scientist, Research & Development, Procter & Gamble
Exploring the Dynamics of the Scalp and Skin Microbiomes and Applications for Consumer Product Innovation

In recent years, the study of the human microbiome has emerged as a fascinating and promising field of research. The intricate relationship between microorganisms and human health has opened new avenues for therapeutic interventions and innovative consumer product development. This presentation will cover a few cases of how P&G using multi-omics approach to examine scalp and skin microbiomes under different conditions to understand the mechanism of actions, select biomarkers and credential a technical story for consumer product innovation.

4:05 Conference Close

2:55-3:45 ROUNDTABLE SESSION ONE

Roundtable 1:
JESSICA O'CONNELL
Partner, Covington & Burling LLP
Probiotics Claims and IP

Roundtable 2:
REN-HAU LAI
Director of Innovation and Product Development, Athletic Greens
The challenge of probiotic product development and the future

Roundtable 3:
STEPHANIE FRALEY
Associate Professor, Shu Chien-Gene Lay Dept of Bioengineering, UCSD
Antibiotics and Infant health

Roundtable 4:
CHERYL SEW HOY
CEO & Founder, Tiny Health
New discoveries leveraging at-home microbiome profiling and probiotic strain tracking via shotgun metagenomics

Probiotic companies often have formulations that combine multiple strains and while some individual strains are clinically backed, companies often have challenges generating robust clinical data at the formulation level to support product health claims. Shotgun sequencing presents a more accessible and reliable way for end consumers, nutrition companies and researchers to detect potential colonization and functional effects from these probiotic supplements. These effects are much more pronounced in the infant probiotic space where the infant gut is more uniquely adapted to colonize bifidobacterium probiotics. We will discuss how these approaches can help the industry advance forward with better observational and clinical evidence

12:10-1:00 ROUNDTABLE SESSION TWO

Roundtable 1:
TIINA ORASMÄE-MEDER
CEO and founder , Meder by Dr Tiina Meder
How to speak about a microbiome: educational challenge in skincare industry

The concept of the skin microbiome is relatively new, but the beauty industry has been quick to develop products that interact with it. Communicating the benefits of these products to skin practitioners and consumers, however, has been a challenge due to the complexity of the concept and varying levels of scientific knowledge among target audiences. Brands need to tailor their messaging to local culture, professional education levels, and press coverage. Providing clear explanations of microbiome-friendly products and addressing frequently asked questions is crucial. Ongoing education and training for skin therapists is essential to ensure they can confidently promote these innovative skincare products.

Roundtable 2:
SATHYA JANARDHANAN
VP, Manufacturing, Rise Therapeutics
Specialty Probiotics and Live Biotherapeutic Products: gaps in the supply chain in the current climate and strategies to secure clinical and commercial supply

- In the current climate, where are some of the key gaps in LBP and Probiotic supply chains?
- What tools or resources are available to LBP/probiotic companies facing a supply cliff in the light of a changing production capacity landscape
- Does the cost of goods in the LBP space match expectations for companies that are yet to scale? What tools are available to navigate expensive development & manufacturing leading up to commercial viability?

Roundtable 3:
CRISTINA LLORENTE
Assistant Professor, Div. Gastroenterology, Dept. Medicine, UC San Diego
The Gut Microbiome's Impact on Liver Disease: Exploring Novel Therapies

- The role of prebiotics and probiotics in modulating gut-liver axis interactions.
- Applications of fecal microbiome transplantation (FMT) in liver disease management.
- Novel preclinical studies utilizing bacteriophages as targeted therapies against microbial dysbiosis in the context of liver health.

Roundtable 4:
AUBREY LEVITT
CEO, Postbiotics Plus Research LLC
Bioactive compounds and the gut microbiome

- The role postbiotics and bioactive compounds in gut health
- How to measure efficacy
- How to market and communicate the benefits of new product categories

POSTER PRESENTATIONS

FREE POSTER PRESENTATIONS AND FLASH TALKS

Whether looking for funding, employment opportunities or simply wanting to share your work with a like-minded and focused group, these are an excellent way to join the heart of this congress. In order to present a poster at the forum, you need to be registered as a delegate. Please note that there is limited space available and poster space is assigned on a first-come-first-served basis (subject to checks and successful registration).

Poster presentations are actively encouraged at this event and as such registered academic and industry delegates are invited to present 1 poster each for free.

- Posters are displayed for the full two days of the event.
- We have reserved two 50 minute sessions in track 1 for non-vendor authors to present a flash presentation of their poster in order to showcase their work.
- We also issue a poster eBook to all attendees containing your full abstract, and you can share your poster as a PDF after the meeting if you desire (optional).

MAKING A POSTER PRESENTATION

We will require the form Downloadable **Here** to be submitted by 27th September 2024.

SUSTAINABILITY GOALS

SUSTAINABILITY

Venues with Sustainability Goals

We are committed to selecting venues with more sustainable practices. These will cover energy supply, food & waste, water use, recycling and plastics. The Marriott La Jolla is **Tripadvisor GreenLeaders Certified**. The hotel website shows a carbon footprint of 11.6 kgs per room night. The hotel footprint calculator **Greenview** reveals that the US average is 17.6 kgs per night (higher for 4 & 5* hotels.)

Catering

You will have some great food choices while you are with us. We have worked with the caterer to increase the proportion of plant-based items. We have also built a plan with the venue to avoid waste through how they serve meals and how any leftovers are processed. Our aim is that you have some great meals, whilst with us, but with less environmental impact by the time you leave.

Travel

An international meeting does involve travel but where it is practical, please consider more sustainable alternatives to flying. The app will also have a discussion space to arrange ride shares.