



THE 6TH  
**Penn Periodontal**  
CONFERENCE 2023

**July 24-28, 2023**

University of Pennsylvania  
School of Dental Medicine  
Philadelphia, Pennsylvania

[www.dental.upenn.edu/pennperio2023](http://www.dental.upenn.edu/pennperio2023)



**Penn**  
**Dental Medicine**  
UNIVERSITY of PENNSYLVANIA



# welcome

Welcome to The 6th Penn Periodontal Conference 2023, here on the University of Pennsylvania campus. Over these five days – July 24-28 – we anticipate that the conference will provide a forum to exchange the latest research on the breadth of clinical, translational, and basic sciences in periodontology.

Penn Dental Medicine launched the biennial Penn Periodontal Conference in 2013 to not only bring together leading researchers and educators in their respective fields of study, but also to encourage the development of junior researchers working with them — that dual focus continues to be a primary goal of the conference.

This year's program will include speakers in the areas of cellular and molecular mechanisms of periodontal disease pathogenesis, host-microbe interactions and inflammation, bioengineering and tissue regeneration, new treatment modalities, and the connection of periodontitis to systemic comorbidities.

We anticipate a wealth of knowledge will be shared as we bring together colleagues from around the world. The interactive atmosphere will offer many occasions to explore ideas and research collaborations.

Enjoy Philadelphia and the Penn campus.

**Dr. Dana Graves**

Vice Dean for Research & Scholarship, Professor, Dept. of Periodontics  
*The 6th Penn Periodontal Conference 2023 Co-Chair*

**Dr. George Hajishengallis**

Thomas W. Evans Centennial Professor, Dept. of Microbiology  
*The 6th Penn Periodontal Conference 2023 Co-Chair*

Penn Periodontal  
CONFERENCE 2023

# Monday, July 24, 2023

**LOCATION**      **ARTHUR E. CORBY AUDITORIUM**

8:30 AM

**WELCOME REMARKS**

Welcome to Philadelphia and the Penn Periodontal Conference

**AM SESSION 1: Microbiology**

**MODERATOR:** Jeff Ebersole

8:40 AM

**Application of Metabolomics to Periodontal Research**

Masae Kuboniwa

9:00 AM

**Full Throttle: The Adaptation of *P. gingivalis* to a Polymicrobial Microenvironment**

Richard Lamont

9:20 AM

**An Atypical Participant in Common Bacterial Communication: There is More to the Story**

Hansel Fletcher

9:40 AM

**The Complement-Targeted Inhibitor Mini-FH Protects Against Experimental Periodontitis Via Both C3-Dependent and C3-Independent Mechanisms**

Hui Wang

**Modeling and Modulating the Subgingival Microbiome-Implications for Periodontal Health**

Nezar Al-Hebshi

10:05 AM

**Coffee Break and Informal Discussions**

**AM SESSION 2: Systemic Disease**

**MODERATOR:** Shannon Wallet

11:00 AM

**Periodontitis and Multimorbidity: Challenges and Opportunity**

Francesco D'Aiuto

11:20 AM

**Diabetes Alters the Host Immune Response to Microbial Dysbiosis**

Dana Graves

11:40 AM

**Advances in Precision Oral Health**

Maria Ryan

12:00 PM

**Exploring the Link Between *Porphyromonas gingivalis* and Pancreatic Cancer**

Gabriel Nussbaum

12:20 PM

**Lunch (on your own) and Informal Discussions**

Monday, July 24, 2023

**LOCATION**      ARTHUR E. CORBY AUDITORIUM

**PM SESSION 1: Pathogenesis**

**MODERATOR:** Tom Van Dyke

- 2:00 PM      **Maladaptive Hematopoiesis and Periodontal Disease**  
George Hajishengallis
- 2:20 PM      **Progress in Population Genomics Studies of Periodontitis**  
Kimon Divaris
- 2:40 PM      **Taste Signaling Pathway Involvement in Periodontal Homeostasis**  
Marco Tizzano
- 3:00 PM      **Coffee Break and Informal Discussions**

**PM SESSION 2: Pathogenesis**

**MODERATOR:** Tom Van Dyke

- 3:40 PM      **Epigenetic Regulation of Alveolar Bone Aging**  
Cun-Yu Wang
- 4:00 PM      **High Fidelity Periodontal Tissue Engineering: Robust Acellular Cementum and Exquisite Sharpey's Fiber Apparatus through Epigenetic Means**  
Thomas Diekwisch
- 4:20 PM      **Age-related Metabolic Dysregulation of Monocytic-MDSCs in Osteoclastogenesis**  
Keith Kirkwood
- 4:40 PM      **Adjourn**

Tuesday, July 25, 2023

**LOCATION** ARTHUR E. CORBY AUDITORIUM

8:30 AM

**KEYNOTE SPEAKER**

**Regulation of Innate Immunity by the Transcription Factor RUNX1**

Nancy Speck, PhD

**AM SESSION 1: Microbiology**

**MODERATOR:** Jeff Ebersole

9:30 AM

**Diversity, Episymbiosis, and Disease Association of Ultrasmall Saccharibacteria**

Batbileg Bor

9:50 AM

**Evaluating Drivers of Dysbiosis in an In-vitro Community Model of the Subgingival Microbiome**

Patricia Diaz

10:10 AM

**Metabolic Modulation of Virulence in the Oral Pathosymbiont *Fusobacterium nucleatum***

Hung Ton-That

10:30 AM

**Developing Chemically Modified Host-Derived Small RNAs to Target Oral Pathobionts**

Jiahe Li

10:50 AM

**Coffee Break and Informal Discussions**

**AM SESSION 2: Microbiology**

**MODERATOR:** Shannon Walle

11:30 AM

**Commensal Microbiota, a Dynamic Regulator of Alveolar Bone Metabolism**

Chad Novince

11:50 PM

**A Temporal Model of Periodontitis Progression**

Jorge Frias-Lopez

12:10 PM

**Spatial Structure and Interspecies Interactions Modulate Biofilm Virulence In situ**

Hyun Koo

12:30 PM

**Veillonellae and the Accessory Pathogen Hypothesis in Peri-implant Dysbiosis**

George Kotsakis

12:50 PM

**Topical Vitamin D Prevents Gingival Inflammation and Bone Loss in Mice**

Gill Diamond

**Oral *Treponema* Diversity and Outer Membrane Protein Variation in Periodontitis**

Michelle Visser

1:15 PM

**Lunch (on your own) and Afternoon Free**



Wednesday, July 26, 2023

LOCATION ARTHUR E. CORBY AUDITORIUM

8:30 AM

**KEYNOTE SPEAKER**

Relevance of the Gut Microbiome to Human Health and Disease

Gary Wu, MD

**AM SESSION 1: Microbiology**

MODERATOR: Shannon Wallet

9:30 AM

Diabetes and the Oral Microbiome

Ann Griffen

9:50 AM

Microbial Interactions in the Dynamic Oral Environment

Gina Lewin

10:10 AM

Uncovering the Roles of Phages in the Ecology of *Porphyromonas gingivalis*

Kathryn Kauffman

10:30 AM

The Yin and Yang of Miropin, the Potential Virulence Factor of *Tannerella forsythia*

Jan Potempa

10:50 AM

Coffee Break and Informal Discussions

**AM SESSION 2: Regeneration**

MODERATOR: Tom Van Dyke

11:30 AM

Beyond Growth Factors: Magnesium as a Driver of Bone Regeneration and Periodontal Therapy

Charles Sfeir

11:50 AM

Dementia Exacerbates Periodontal Bone Loss in Females

Alexandru Movila

Single-Cell-Transcriptomics of Aged and Diabetic Wounds Reveal Unique Stromal-Immune Dysregulation

Leticia Rojas

12:15 PM

A Dual Role of Immunomodulatory Oral Fibroblasts in Regenerative Mucosal Healing and Inflammatory Diseases

Kang Ko

12:35 PM

Lunch (on your own) and Informal Discussions

**PM SESSION: Regeneration**

MODERATOR: Jeff Ebersole

2:00 PM

Mandibular Condyle Contains a Unique Chondrocyte Progenitor Population to Maintain Mandibular Bone Homeostasis

Chider Chen

2:20 PM

Precision Periodontology: Are We There Yet?

Will Giannobile

2:40 PM

Collagen Matrices for Periodontal Hard and Soft Tissue Regeneration

Anton Sculean

3:00 PM

Beer and Pretzels



Wednesday, July 26, 2023

LOCATION

ARTHUR E. CORBY AUDITORIUM

**Junior Investigator Presentations**

- MODERATOR:** Eduardo de Souza Oliveira
- 3:45 PM **Mechanical Regulation of Oral Epithelial Barrier Function**  
Stella Alimperti
- 3:55 PM **O-linked N-acetylglucosamine-transferase (OGT) Inhibition Disrupts Osteoclastogenesis: Insights into Metabolic Reprogramming**  
Erivan Schnaider Ramos-Junior
- 4:05 PM **NR4A1 Activation Potentiates Patrolling Monocytes and Mitigates Periodontal Bone Loss**  
Amanda Ferreira
- MODERATOR:** Crystal Marruganti
- 4:15 PM **Piezol-Expressed on Osteoclasts Down-Regulates RANKL-Induced Bone Resorption in Periodontitis**  
Satoru Shindo
- 4:25 PM **Fibroblasts Participate in Mucosal Pathology in Periodontitis**  
Tomoko Ikeuchi
- MODERATOR:** Fata Moradali
- 4:35 PM **Local Sustained Mg<sup>2+</sup> Delivery for the Immunomodulatory Treatment of Periodontitis**  
Nursima Lacin
- 4:45 PM **Mitochondrial Biogenesis Drives Adenosine Control of Inflammation-Associated Gingival Fibroblast State**  
Ana Carolina Morandini
- 4:55 PM **The “Periodontal” CD4<sup>+</sup> Memory-T Cell Compartment in Human and Mice**  
Carla Alvarez Rivas
- MODERATOR:** Balazs Feher
- 5:05 PM **Regeneration of Critical-Sized Mandibular Defects Using SPM-Releasing Scaffold and 3D Printing Technology: A Pilot Study**  
Nika Mehrnia
- 5:15 PM **Nrf2 Deficiency in Mice Impairs Bone Regeneration After Tooth Extraction**  
Alexandra Stähli
- MODERATOR:** Ranya El Sayed
- 5:25 PM **Role of Bacterial Metabolite: Methylglyoxal in Periodontal Inflammation**  
Rajendra Prasad Settem
- 5:35 PM **Ethanolamine Utilization Modulates the Virulence of Fusobacterium nucleatum**  
Yi-Wei Chen
- 5:45 PM **Microbial Beta-Glucuronidase Activity is Associated with Periodontitis Severity**  
Adam Lietzan
- 6:00 PM **ADJOURN**

# Thursday, July 27, 2023

**LOCATION** ARTHUR E. CORBY AUDITORIUM

## AM SESSION 1: Pathogenesis

**MODERATOR:** Tom Van Dyke

- |          |  |
|----------|--|
| 8:30 AM  | <b>Multi-omic Atlas of Human Periodontitis</b><br>Drake Williams                                       |
| 8:50 AM  | <b>Cellular Senescence and Senotherapy: A Novel Path to Periodontal Health</b><br>Esra Sahingur        |
| 9:10 AM  | <b>Succinate Signaling Makes a Causal Link Between Periodontitis and Neuroinflammation</b><br>Xin Li   |
| 9:30 AM  | <b>Regulation of Osteoclast Precursors in Periodontal Disease</b><br>Ping Zhang                        |
| 9:50 AM  | <b>Mapping Human Oral Mucosa Tissue Architecture Using Large-scale Spatial Genomics</b><br>Ana Caetano |
| 10:10 AM | <b>Coffee Break and Informal Discussions</b>   |

## AM SESSION 2: Inflammation

**MODERATOR:** Shannon Wallet

- |          |  |
|----------|--|
| 11:00 AM | <b>Modulation of Immune Response in Local and Systemic Inflammation</b><br>Hatice Hasturk                                |
| 11:20 PM | <b>Tunable Hydrogels Investigate the Mechanical Regulation of Monocytes in Fibrotic Niches</b><br>Kyle Vining            |
| 11:40 AM | <b>Exploring Clinical and Molecular Changes During Periodontitis Progression</b><br>Flavia Teles                         |
| 12:00 PM | <b>Analgesic and Anti-inflammatory Effects of Naproxen and Acetaminophen After Implant Placement</b><br>Katherine Theken |
| 12:20 PM | <b>Lunch (on your own) and Informal Discussions</b>  |

## AFTERNOON/EVENING

- |                |                                      |
|----------------|--------------------------------------|
| 2:00 PM        | <b>Poster Session</b>                |
| 4:00 PM        | <b>Tours of Penn Dental Medicine</b> |
| 4:30 – 7:00 PM | <b>Gala Reception and Dinner</b>     |

## FRIDAY, JULY 28, 2023

**Departure**



Thank you to our event  
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