

# 2009

# RESEARCH SUMMIT

*PRESENTED BY:*



National Institute of Dental \*  
and Craniofacial Research



***AT THE FOREFRONT OF INNOVATION***

***THURSDAY, MAY 7–FRIDAY, MAY 8, 2009***

***INTERCONTINENTAL HOTEL***

***ROSEMONT, IL***

\* The 2009 Research Summit is supported in part by Award Number R13DE019744 from the National Institute of Dental & Craniofacial Research. The content is solely the responsibility of the Summit presenters and organizers and does not necessarily represent the official views of the National Institute of Dental and Craniofacial Research or the National Institute of Health.

# 2009 Research Summit May 7-8, 2009



National Institute of Dental  
and Craniofacial Research



## THURSDAY, MAY 7

7:00 a.m.-8:00 a.m. CONTINENTAL BREAKFAST

8:00 a.m.-8:15 a.m. OPENING REMARKS

8:00 a.m.– 8:05 a.m.- *R. Lynn White, DDS, AAOMS President*

8:05 a.m.– 8:10 a.m.- *Larry W. Nissen, DDS, IAOMS President-Elect*

8:10 a.m.– 8:15 a.m.- *David E. Frost, DDS, MS, OMSF President*

### SESSION 1. SALIVARY PROTEOMICS AND BIOMARKERS

*Moderator: Deepak Kademani, DMD, MD, University of Minnesota*

8:15 a.m.-8:35 a.m. SALIVARY BIOMARKERS IN HEAD AND NECK CANCER

*Brian L. Schmidt, DDS, MD, PhD*

*Associate Professor*

*Department of Oral and Maxillofacial Surgery*

*University of California-San Francisco*

8:35 a.m.-8:45 a.m. Discussion/ Question & Answer

8:45 a.m.-9:05 a.m. BIOMARKERS FOR MONITORING PSYCHOLOGICAL SEQUELAE OF FACIAL INJURIES

*Vivek Shetty, DDS, Dr.Med.Dent*

*Professor of Oral and Maxillofacial Surgery*

*Facial Injury Research Center*

*University of California at Los Angeles*

9:05 a.m.-9:15 a.m. Discussion/ Question & Answer

### SESSION 2. CRANIOFACIAL NEUROPATHIC PAIN: MECHANISMS AND ADVANCED IMAGING

*Moderator: Larry L. Cunningham, DDS, MD, University of Kentucky*

9:15 a.m.-9:35 a.m. ROLE OF SIGNAL TRANSDUCTION MECHANISMS IN THE MECHANICAL,  
THERMAL AND CHEMICAL STIMULUS-INDUCED ACTIVATION OF SENSORY  
NEURONS

*Jon D. Levine, MD, PhD*

*Professor, Department of Oral & Maxillofacial Surgery*

*San Francisco, CA*

9:35 a.m.-9:45 a.m. Discussion/ Question & Answer

9:45 a.m.-10:05 a.m. FUNCTIONAL MRI OF THE BRAIN IN CHRONIC FACIAL PAIN PATIENTS

*Reny de Leeuw, DDS, PhD*

*Associate Professor, Chief, Division Orofacial Pain, College of Dentistry*

*University of Kentucky*

10:05 a.m.-10:15 a.m. Discussion/ Question & Answer

10:15 a.m.-10:35 a.m. FUNCTIONAL MRI ASSESSMENT OF OROFACIAL FUNCTIONS

*Kristine Marie Mosier, DMD, PhD*

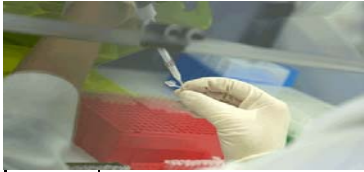
*Assistant Professor, Neuroradiology, Section of Imaging Sciences*

*Department of Radiology*

*Indiana University School of Medicine*

10:35 a.m.-10:45 a.m. Discussion/ Question & Answer

10:45 a.m.-11:00 a.m. BREAK



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**SESSION 3. ADVANCES IN SIMULATION TECHNOLOGY**

*Moderator: Gary Bouloux, DDS, MD, MDSc, Emory University*

- 11:00 a.m.-11:20 a.m. ROLE OF 3D VIRTUAL REALITY IN THE CRANIOFACIAL REGION**  
*Aaron Olikier, PhD*  
*Biodigital Systems*  
*New York, NY*
- 11:20 a.m.-11:30 a.m. Discussion/ Question & Answer**
- 11:30 a.m.-11:50 a.m. PRESENT AND EMERGING TRENDS OF VIRTUAL REALITY IN SURGICAL SIMULATION**  
*Alan Liu, PhD, MD*  
*Surgical Director, National Capitol Medical Simulation Center*  
*Bethesda, MD*
- 11:50 a.m.-12:00 p.m. Discussion/ Question & Answer**
- 12:00 p.m.-12:20 p.m. ROLE OF VIRTUAL REALITY IN MANAGING THE TRAUMA PATIENT**  
*Howard Champion, MD*  
*President, SimQuest, LLC*  
*Silver Springs, MD*
- 12:20 p.m.-12:30 p.m. Discussion/ Question & Answer**

**12:30 P.M. - 2:30 P.M. LUNCH AND LEARNS/POSTER SESSIONS**



## **SESSION 4: BIOMATERIALS IN TISSUE ENGINEERING**

*Moderator: Janice S. Lee, DDS, MD, MS*

*University of California at San Francisco*

**2:30 p.m. –2:50 p.m. ROLE OF BIOMATERIALS IN REGENERATIVE MEDICINE**

*John Jansen, DDS, PhD*

*College of Dental Science, Department of Biomaterials,*

*University Medical Centre Nijmegen*

*Nijmegen, Netherlands*

**2:50 p.m. –3:00 p.m. Discussion/ Question & Answer**

**3:00 p.m. –3:20 p.m. ROLE OF NANOTECHNOLOGY IN DEVELOPMENT OF INTERACTIVE BIOMATERIALS FOR BONE**

*Tony Tomsia, PhD*

*Materials Sciences Division*

*Lawrence Berkeley National Laboratory*

*Berkeley, CA*

**3:20 p.m. –3:30 p.m. Discussion/ Question & Answer**

**3:30 p.m. –3:45 p.m. BREAK**

**3:45 p.m. –4:05 p.m. DEVELOPMENT OF BIOLOGICALLY INSPIRED STRATEGIES TO DEVELOP NEW BIOMATERIALS FOR THE REPAIR, REPLACEMENT, OR AUGMENTATION OF HUMAN TISSUE**

*Phillip Messersmith, PhD*

*Department of Biomedical Engineering,*

*Northwestern University*

**4:05 p.m. –4:15 p.m. Discussion/ Question & Answer**

**4:15 p.m. –4:30 p.m. SPATIAL CONTROL OF CELL SIGNALING FACTORS FROM BIOMATERIALS FOR CRANIOFACIAL REGENERATION**

*Paul Krebsbach, DDS, PhD*

*Professor, Department of Biologic and Materials Sciences*

*University of Michigan*

**4:30 p.m. –4:40 p.m. Discussion/ Question & Answer**

**5:00 PM– 7:00 PM RECEPTION**



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**FRIDAY, MAY 8**

**7:30 a.m.–8:30 a.m. BREAKFAST**

**SESSION 5: DEVELOPMENTAL BIOLOGY AND STEM CELLS  
IN TISSUE ENGINEERING**

*Moderator: Stephen E. Feinberg, DDS, PhD, University of Michigan*

**8:30 a.m.-8:50 a.m. THE ROLE OF GENETIC AND DEVELOPMENTAL INFORMATION WITH TISSUE  
ENGINEERING AND STEM CELL APPROACHES TO GENERATE NEW ORGAN  
TISSUES**

***Richard Maas, PhD***

*Department of Medicine (Division of Genetics)*

*Brigham and Women's Hospital Harvard Medical School*

*Boston, MA*

**8:50 a.m.-9:00 a.m. Discussion/ Question & Answer**

**9:00 a.m.-9:20 a.m. EXTRACELLULAR MATRIX DYNAMICS IN DEVELOPMENT AND REGENERATIVE  
MEDICINE**

***Melinda Larsen, PhD***

*Assistant Professor, Department of Biological Sciences, University at Albany*

*Albany, NY*

**9:20 a.m.-9:30 a.m. Discussion/ Question & Answer**

**9:30 a.m.-9:50 a.m. THE STEM CELL NICHE AND CELL DIFFERENTIATION POTENTIAL**

***Rocky Tuan, PhD***

*Cartilage Biology and Orthopaedics Branch*

*National Institute of Arthritis and Musculoskeletal and Skin Diseases*

*National Institutes of Health*

*Bethesda, MD*

**9:50 a.m.-10:00 a.m. Discussion/ Question & Answer**

**10:00 a.m.-10:15 a.m. BREAK**

**10:15 a.m.-10:35 a.m. ROLE OF DENTAL STEM CELLS IN TISSUE REGENERATION**

***Pamela Yelick, PhD***

*Director, Division of Craniofacial and Molecular Genetics*

*Associate Professor, Department of Oral and Maxillofacial Pathology*

*Tufts University School of Dental Medicine*

*Boston, MA*

**10:35 a.m. -10:45 a.m. Discussion/ Question & Answer**

**10:45 a.m. -11:05 a.m. USE OF GROWTH FACTORS FOR BONE REGENERATION AND WOUND HEALING**

***William V. Giannobile, DDS, MS, DMSc***

*Professor of Dentistry and Director Michigan Center for Oral Health Research*

*University of Michigan Clinical Center*

*Ann Arbor, MI*

**11:05 a.m. -11:15 a.m. Discussion/ Question & Answer**

**11:15 A.M. – 1:15 P.M. LUNCH AND LEARNS/POSTER SESSIONS**



**1:15 P.M. - 3:15 P.M. BREAKOUT SESSIONS**

The objective of the breakout sessions will be to focus on the development of areas of research that will be of interest to the Oral & Maxillofacial Surgery community and will culminate in the submission of recommendations to NIDCR/NIH for future program announcements.

<b>SESSION 1</b>	<b>SALIVARY PROTEOMICS AND BIOMARKERS</b>
<b>SESSION 2</b>	<b>CRANIOFACIAL NEUROPATHIC PAIN: MECHANISMS AND ADVANCED IMAGING</b>
<b>SESSION 3</b>	<b>ADVANCES IN SIMULATION TECHNOLOGY</b>
<b>SESSIONS 4 AND 5</b>	<b>BIOMATERIALS, DEVELOPMENTAL BIOLOGY, AND STEM CELLS IN TISSUE ENGINEERING</b>
<b>3:15 P.M.– 4:45 P.M.</b>	<b>SUMMATION OF RESEARCH, APPLICATIONS TO OMS SPECIALTY, AND FUTURE DIRECTIONS</b>
<b>END OF CONFERENCE</b>	