

# Director's Report to the National Advisory Dental and Craniofacial Research Council

January 2017

## ACTIVITIES OF THE NIDCR DIRECTOR

Since the last meeting of the National Advisory Dental and Craniofacial Research Council in September 2016, NIDCR Director Martha J. Somerman, DDS, PhD, and Acting Deputy Director John Kusiak, PhD, maintained an active schedule of delivering presentations to stakeholders, meeting with working groups and other organizations, and attending research symposia.

During the last four months, Drs. Somerman and Kusiak engaged in a number of notable activities:

Drs. Somerman and Kusiak attended the NIDCR-led workshop on Gene-Environment Interaction in Orofacial Clefting on September 7 in Bethesda, MD. The workshop was co-hosted by NICHD, NIAAA, NIEHS, and NIDA.

Dr. Somerman presented a talk titled "NIDCR Opportunities in Periodontal Research" on September 11 as part of the Opening General Session at the American Academy of Periodontology (AAP) Annual Meeting in San Diego, CA.

Dr. Somerman and her NIAMS laboratory members participated in the NIH Research Festival on September 15, presenting a poster on "Determining the Factors Governing Increased Susceptibility to Periodontal Diseases". The team had a booth and made tooth sugar cookies, including some decorated with cavities!

Dr. Somerman presented a talk titled "NIDCR: Advancing Health Through Research and Innovation" on September 17-18 at the American Academy of Otolaryngology-Head and Neck Surgery Foundation (AAO-HNSF) 2016 Annual Meeting & OTO EXPO, in San Diego, CA.

Drs. Somerman and Kusiak provided an update on NIDCR activities on September 26 to the American Association of Dental Research (AADR) Government Affairs Committee, including the Friends of NIDCR Transition Team.

Drs. Somerman and Kusiak attended the Eighth Scientific Meeting of The TMJ Association on September 11-13 at FASEB in Bethesda, MD. Dr. Somerman addressed the attendees during the welcome and remarks on September 13.

Dr. Kusiak attended the National Dental Practice-Based Research Network (PBRN) face-to-face administrative meeting on September 14-16 in San Antonio, TX.

Dr. Kusiak welcomed dental students participating in the ADA Dental Students' Conference on Research on October 4 in Bethesda, MD. In addition to delivering opening remarks, Dr. Kusiak participated in a discussion panel.

Dr. Somerman participated in a National Academy of Sciences Forum on Regenerative Medicine on October 14 in Washington, DC.

Dr. Kusiak attended and presented a keynote lecture titled "Pain Research in the 21<sup>st</sup> Century: The View from the National Institutes of Health" during the University of Alabama Pain Symposium held October 14-15 in Birmingham, AL.

Dr. Somerman provided the keynote lecture titled "NIDCR: Enhancing Health through Research and Innovation" on October 25 at the University of Texas Health School of Dentistry Annual Student Research Showcase at the University of Texas Health Science Center in Houston, TX.

Dr. Somerman and Anna Nicholson, NIDCR Director of the Office of Clinical Trials Operations and Management participated on November 16-17 in a meeting, "Translating Clinical Trials Outcomes to Your Practice," hosted in Chicago, IL by the American Dental Association and Task Force. Their talk was titled "NIDCR: Overview of Clinical Trials Portfolio".

Dr. Somerman and several of the NIDCR Executive Staff hosted a visit and tour of the NIDCR dental clinic on November 18 for Rector (President) Dr. Haluk Ozen and Dr. Seza Ozen of Hacettepe University, Turkey.

Dr. Somerman participated in the IC Director's Leadership Forum on the NIH Campus on November 21-22.

Dr. Somerman was interviewed on November 30 by Lesley Earl, a reporter with the *NIH Catalyst*, for an article on the 2016 David E. Barmes Global Health Lecture by Dr. Paul Farmer. The annual lecture is co-hosted by NIDCR & Fogarty International Center.

Dr. Somerman, Dr. Kusiak and Dr. Lillian Shum, NIDCR Director of Extramural Research, on December 5, met with Dr. Herbert Rabin, Professor Emeritus, University of Maryland, College Park, MD and founding director of the Maryland Technology Enterprise Institute; and Dr. William Bentley, Robert E. Fischell Distinguished Chair of Engineering & Director of the Robert E. Fischell Institute for Biomedical Devices, University of Maryland, College Park, MD, to gain insights on the best strategies and approaches for establishing public private partnerships and to set some guidelines for developing these partnerships.

Drs. Kusiak and Shum, and Dr. Yolanda Vallejo, director of NIDCR's Orofacial Pain, Temporomandibular Joint Disorder & Neurobiology Program, attended the OPPERA-II External Advisory Committee annual meeting on December 6-9 at the University of North Carolina School of Dentistry in Chapel Hill, NC.

Dr. Somerman presented the keynote address titled "NIDCR: Leading Advances in Oral Health Research and Innovation" on December 13 in San Francisco, CA at the University of the Pacific Arthur A. Dugoni School of Dentistry Faculty Development Day.

During the 4th quarter of 2016, Dr. Somerman became a member of the following committees: The NIH All of Us<sup>SM</sup> Initiative; the Temporomandibular Joint Disorders Association (TMJA) Patient RoundTable Steering Committee; and a Member Alternate (with NIBIB) for NIH Blueprint for Neuroscience Research, Forum on Neuroscience and Nervous System Disorders at The National Academies of Sciences, Engineering, and Medicine.

**BUDGET UPDATE**

**FY 2016**

In FY2016, NIDCR had an operating budget of \$412.8M. See the table below for distribution by budget mechanism.

<b>National Institute of Dental and Craniofacial Research</b>		
<b>FY 2016 Actuals</b>		
<b>Research Grants</b>	<b>No.</b>	<b>Amt. (\$000)</b>
<b><u>Research Projects</u></b>		
Noncompeting	409	199,879
Competing	172	66,266
Subtotal	581	266,145
SBIR/STTR	26	10,911
Subtotal, RPGs	607	277,056
<b><u>Research Centers</u></b>	3	6,017
<b><u>Other Research</u></b>		
Research Careers	42	5,683
Minority Biomedical Research Support		247
Other	21	1,552
Subtotal, Other Research	63	7,482
<b>TOTAL Research Grants</b>	<b>673</b>	<b>290,555</b>
	<b>FTTPs</b>	

<b>Research Training</b>	<b>230</b>	<b>10,853</b>
<b>Research &amp; Development Contracts</b>	<b>18</b>	<b>19,245</b>
<b>SUBTOTAL, EXTRAMURAL</b>		<b>320,653</b>
<b>Intramural Research</b>		<b>65,879</b>
<b>Research Management and Support</b>		<b>26,256</b>
<b>Lapse</b>		<b>33</b>
<b>TOTAL NIDCR</b>		<b>412,821</b>

### **FY 2017**

For FY 2017, NIH is currently operating under a continuing resolution that extends through April 28, 2017.

### **HHS/NIH UPDATE**

#### **Matthew W. Gillman, MD, Appointed Director of Environmental Influences on Child Health Outcomes (ECHO) Program**

In December, Dr. Collins announced the appointment of Matthew W. Gillman, MD, as director of the Environmental Influences on Child Health Outcomes (ECHO) Program. ECHO is a seven-year NIH initiative to use large, existing study cohorts to conduct research on high-impact pediatric health outcomes. Dr. Gillman comes to NIH from Boston, where he is a professor of population medicine at Harvard Medical School and a professor of nutrition at Harvard School of Public Health. Dr. Gillman is recognized as an international leader in cohort studies throughout the lifespan, having served as principal investigator or co-investigator on several large, high-profile studies such as Project Viva, the Framingham Heart Study, and the National Children's Study. He is also a recipient of the prestigious NIH Method to Extend Research in Time (MERIT) award. He is a member of the U.S. Preventive Services Task Force. Dr. Gillman received his medical degree in 1981 from Duke University School of Medicine, interned and served his residency at North Carolina Memorial Hospital, Chapel Hill, and completed his clinical research fellowship in the Harvard General Internal Medicine and Faculty Development Fellowship Program.

### **Philip E. Bourne, PhD. Leaves Post as NIH Associate Director for Data Science**

On January 6, Dr. Collins announced the departure of Philip E. Bourne, PhD, who will be leaving his post as NIH's first associate director for Data Science to become the Stephenson Chair of Data Science, Director of the Data Science Institute, and Professor in the Department of Biomedical Engineering at the University of Virginia, Charlottesville. Dr. Bourne joined the NIH in 2014 to lead the Big Data to Knowledge (BD2K) program, an NIH-wide priority initiative to ensure NIH plays a major role in coordinating access to and analysis of many different biomedical research datasets, as well as providing resources for training and software development. Under Dr. Bourne's leadership, NIH developed the concept of The Commons, a shared virtual space where scientists could find, manage, share, use, and reuse data, software, metadata, and workflows; institutionalized FAIR, a set of guiding principles to make data findable, accessible, interoperable and re-usable; and established the NIH Data Science Workforce Development Center to advance data science education. Dr. Bourne will remain at NIH through April 30. NLM Director Patti Brennan, RN, PhD, will serve as Interim Associate Director for Data Science until a new appointment is made.

### **Surgeon General Reports Youth and Young Adult E-Cigarette Use Poses a Public Health Threat**

In December, U.S. Surgeon General Dr. Vivek H. Murthy, MD, released the first comprehensive federal review of the public health impact of e-cigarettes on U.S. youth and young adults. The report comes amid alarming rates of youth and young adult use of e-cigarettes; in 2015, about 1 in 6 high school students used an e-cigarette in the past month. The report finds that, while nicotine is a highly addictive drug at any age, youth and young adults are uniquely vulnerable to the long-term consequences of exposing the brain to nicotine, and concludes that youth use of nicotine in any form is unsafe. The report also finds that secondhand aerosol that is exhaled into the air by e-cigarette users can expose others to potentially harmful chemicals. The report was written and reviewed by more than 150 experts. In addition to documenting the evidence on the health risks of e-cigarettes among young people, the report describes industry influences on e-cigarette use and outlines potential actions to prevent youth and young adults from the harms of e-cigarette use. [View the Executive Summary of the report.](#)

### **President Obama Signs into Law H.R. 34 -- The 21st Century Cures Act**

The 21st Century Cures Act was signed into law on December 13, 2016. The legislation authorizes \$4.8 billion for the NIH over 10 years, establishing the Beau Biden Cancer Moonshot and NIH Innovation Account in the Treasury to carry out specific research initiatives. In addition, the legislation includes new and revised policies for the NIH, establishing new programs, revising some reports, providing measures to reduce administrative burden, and provisions for privacy, workforce, and inclusion. A working group led by Adrienne A. Hallett, associate director for Legislative Policy and Analysis at NIH, will facilitate the implementation of these new and revised policies. The funds for 21st Century Cures must be appropriated each year, are available until expended, and will not count against the budget caps. The funds for FY 2017 were appropriated by the current continuing resolution, H.R. 2028 Further Continuing and Security Assistance Appropriations Act, which includes \$300 million for the Cancer Moonshot, \$10 million for Brain Research through Advancing Innovative Neurotechnologies (BRAIN), \$40 million for the Precision Medicine Initiative, and \$2 million for regenerative medicine clinical research. [View an essay by Michael Lauer, MD, deputy director for Extramural Research at NIH, as he discusses the potential implications for NIH.](#)

## **NIDCR UPDATE**

### **Institute News**

#### **Physician and Medical Anthropologist Dr. Paul Farmer Delivers the 2016 David E. Barmes Global Health Lecture**

In November, Paul Farmer, MD, PhD, the founding director and chief strategist of the international nonprofit organization Partners In Health, delivered the 2016 David E. Barmes Global Health Lecture on the NIH campus in Bethesda, MD. The title of his talk was "Against Balkanization: Research + Training + Care = Global Health Equity." This annual event is co-sponsored by NIDCR and the NIH's Fogarty International Center. Dr. Farmer is known for his dedication to improving the health of the world's poorest people. Over the past 28 years, Partners In Health has expanded operations from the original site in Haiti to 10 other countries around the world. Dr. Farmer and his colleagues have pioneered novel community-based strategies to deliver high-quality health care in low-resource settings. Dr. Farmer is the Kolokotronis University Professor and the chair of the Department of Global Health and Social Medicine at Harvard Medical School, and chief of the Division of Global Health Equity at Brigham and Women's Hospital in Boston. He also is the United Nations Special Adviser to the Secretary-General on Community-based Medicine and Lessons from Haiti. Dr. Farmer earned an MD and PhD from Harvard University in 1990. The David E. Barmes Global Health Lecture series honors the late David Edward Barmes, special expert for international health at NIDCR. [View the videocast of Dr. Farmer's talk.](#)

#### **NIDCR and IADR Publish Paper Demonstrating Commitment to US Dental Institutions**

In collaboration with Dr. Christopher Fox, staff from the Office of Science Policy and Analysis (Drs. Chantelle Ferland-Beckham, Wendy Knosp and D. Jonathan Horsford) and the Office of the Director (Dr. Morgan O'Hayre) published a paper titled "The NIH's Funding to US Dental Institutions from 2005 to 2014". The authors showed that over the 10-year span, 56 US dental institutions received approximately \$2.2 billion from more than 20 Institutes, Centers, and Offices at the NIH. NIDCR is the largest NIH supporter of dental institutions, having invested 70% of the NIH total, about \$1.5 billion. NIDCR's investment over the past ten years has remained stable at about 50% of the extramural budget. NIDCR is also the primary supporter of research training and career development, investing \$177 million, which represents 92% of the total NIH investment of \$192 million. This publication is accompanied by a perspective piece titled "Impact of Funding by NIDCR for Research to Dental Schools" by Peter Polverini, University of Michigan, Ann Arbor, and Mark Lingen, University of Chicago, IL. [Read the publication](#) or [listen to the podcast](#).

#### **NIDCR Hosts Workshop on Gene-Environment Interaction in Orofacial Clefting**

NIDCR convened a workshop on Gene-Environment Interaction in Orofacial Clefting, which was held September 6-7 in Bethesda, MD. Staff from several NIH Institutes and the CDC participated in the workshop planning. The workshop was led by Emily Harris, PhD, and co-organized by Steven Scholnick, PhD, and Katherine Stein, PhD of NIDCR's Translational Genomics Research Branch in the Division of Extramural Research. A number of NIDCR and other NIH staff attended as well. A detailed report of the workshop is in progress.

#### **NIDCR Contributes to National Dental Practice-Based Research Network (NDPBRN) Annual Steering Committee Meeting**

On September 15-16, Dena Fischer, DDS, MSD, MS, and Jane Atkinson, DDS, PhD, of NIDCR's Center for Clinical Research in the Division of Extramural Research, attended the annual face-to-face administrative Steering Committee meeting of the National Dental Practice-Based Research Network. The Steering Committee reviewed progress with the network's ongoing and planned studies, discussed network and study operations, and began planning for upcoming annual regional meetings.

## **NIDCR Co-Sponsors Workshop to Better Understand Gaps in Knowledge About How ZIKV Exposure and Infection Affect Child Development**

Several NIH Institutes, including NIDCR, coordinate to support Zika virus (ZIKV) research. On September 22-23, the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the Office of Research on Women's Health (ORWH) co-sponsored a workshop called Bridging Knowledge Gaps to Understand How ZIKV Exposure and Infection Affect Child Development. Dr. Lillian Shum, director of the Division of Extramural Research, moderated a session, "Impact on Child," which included presentations and discussion on screening and monitoring for auditory, ophthalmologic, musculoskeletal, cardiac, gastrointestinal, and endocrine abnormalities in children affected by ZIKV infection in utero.

## **NIDCR Hosts Retreat for Researchers in the Oral Health Sub-Study of the Pediatric HIV/AIDS Cohort Study (PHACS)**

Dr. Gallya Gannot, director and coordinator for HIV/AIDS and Oral Health Research of the Center for Clinical Research in the Division of Extramural Research, served as host and moderator for a retreat on September 26 for researchers involved in the oral health sub-study of the Pediatric HIV/AIDS Cohort Study (PHACS). The PHACS is a longitudinal cohort study investigating the long-term effects of HIV infection and antiretroviral (ARV) medications in children and young adults who were born with HIV or born exposed to HIV. The retreat included presentations by the PHACS oral health researchers and evaluation of the study by 16 external experts. The purpose of the retreat was to consider data from the current study and to help establish future directions for research.

## **Director of NIDCR Molecular and Cellular Neuroscience Program Co-Chairs TMJ Association Annual Meeting**

Yolanda Vallejo-Estrada, PhD, co-chaired the Nervous System and Immune/Inflammatory Interactions Session at the Eighth Scientific Meeting of the TMJ Association: "How can Precision Medicine Be Applied to Temporomandibular Disorders and its Comorbidities?" held September 11-13 in Bethesda, MD. The meeting explored how precision medicine strategies can inform the treatment of TMD and comorbid pain conditions.

## **NIDCR Clinical Center Unit Leads International Team to Cure Young Patient with Rare Tumor**

Tumor-induced osteomalacia (TIO) is caused by a rare endocrine tumor that secretes FGF23. In high levels, FGF23 causes low blood phosphate levels that lead to muscle weakness, bone pain and fractures. There are only a few places in the world with expertise in diagnosing and treating TIO. One of those experts is Michael Collins, MD, chief of the MNIDCR Skeletal Clinical Studies Unit in the NIH Clinical Center. In November 2015, after a medical collaboration among NIH researchers and others around the world, a young woman from Palestine was cured and is able to walk again. [You can read the inspiring story on page 6 of the NIH Clinical Center Newsletter.](#)

## **Personnel Update**

### **Preethi Chander, PhD, Appointed Program Director of the Salivary Biology and Immunology Program**

In January, Preethi Chander, PhD, took on the role of directing the Salivary Biology and Immunology Program in the Integrative Biology and Infectious Diseases Branch in the Division of Extramural Research. Dr. Chander first joined NIDCR in March 2015 as a Health Specialist. Prior to NIDCR, she served as a Program Analyst at the National Eye Institute (NEI) and The Common Fund's Nanomedicine Program, where she participated in many high-visibility NEI and trans-NIH projects. Dr. Chander obtained her PhD from Purdue University, where she majored in Structural Biology, and conducted her

postdoctoral research in the Intramural division of NEI investigating the biology of retinal pigment epithelium and visual cycle proteins in blinding disorders.

### **Darien J. Weatherspoon, DDS, MPH, Joins NIDCR as Program Director of the Oral Health Disparities Research Program**

In December, Darien J. Weatherspoon, DDS, MPH, became Program Director of the Oral Health Disparities Research Program in NIDCR's Division of Extramural Research in the Center for Clinical Research. Dr. Weatherspoon comes to NIDCR after serving as an Assistant Professor in the Division of Prevention and Public Health Sciences, Department of Pediatric Dentistry at the University of Illinois at Chicago College of Dentistry. Dr. Weatherspoon completed his Dental Public Health Residency at NIDCR in 2013-2014. He holds a DDS from the University of Maryland, Baltimore College of Dental Surgery, and an MPH from the University of Michigan, School of Public Health.

### **Mary Scott Ramnitz, MD, Receives ASBMR Young Investigator Award at Annual Meeting**

Mary Scott Ramnitz, MD, a Staff Clinician in NIDCR's Craniofacial & Skeletal Diseases Branch, accepted the ASBMR Young Investigator Award for her abstract presentation "Autoimmune Hyperphosphatemic Tumoral Calcinosis" at the American Society for Bone and Mineral Research's (ASBMR) annual meeting in Atlanta, GA in September. The ASBMR Young Investigator Award recognizes young investigators who submit top-ranking abstracts to an ASBMR Meeting. ASBMR is a professional, scientific, and medical society established to bring together clinical and experimental scientists who are involved in the study of bone and mineral metabolism.

## **Meetings and Conferences**

### **Staff Presentations**

At multiple conferences, workshops, and meetings, Division of Extramural staff served as panel moderators and panelists, and delivered poster and oral presentations.

- Gallya Gannot, DMD, PhD, in NIDCR's Center for Clinical Research served as an executive committee member at the fall 2016 network meeting for the Pediatric HIV/AIDS Cohort Study (PHACS) held in Bethesda, MD on September 19.  
  
Dena Fischer, DDS, MSD, MS, gave a presentation about research opportunities in the National Dental Practice-Based Research Networks at the American Dental Association Dental Student Conference on Research in October in Bethesda, MD.
- Nadya Lumelsky, PhD, director of the Tissue Engineering and Regenerative Medicine Research Program, chaired a scientific session titled "Genetics and Epigenetics of Stem Cells" at the 3rd International Conference on Dental and Craniofacial Stem Cells held October 26-28 in Paris, France.
- Dr. Lumelsky also presented a lecture titled, "Tissue Engineering and Regenerative Medicine Program at the NIDCR Division of Extramural Research" at a workshop organized by the Federal Multi-Agency Tissue Engineering Science (MATES) Working Group at the annual meeting of the Tissue Engineering and Regenerative Medicine International Society (TERMIS) held December 11-14 in San Diego, CA.
- Jason Wan, PhD, director of the Mineralized Tissue Physiology Program, presented a poster and gave a talk on "Priorities and Funding Opportunities at NIDCR" at the Enamel 9 Conference held October 30- November 3, in Harrogate, England.



Capt. Bruce Dye, DDS, MPH, an oral epidemiologist in NIDCR's Office of Science Policy and Analysis, and director of the Dental Public Health Residency Program, gave a presentation titled "The Oral Epidemiology of Key Dental Diseases & Conditions in the United States," at the AMSUS: The Society of Federal Health Professionals annual conference on December 1 in National Harbor, MD.

Drs. Jonathan Horsford, Bruce Dye and Timothy Iafolla led a planning conference regarding the National Health and Nutrition Examination Survey (NHANES) oral health component on November 10 in Bethesda, MD. Staff and managers from the National Center for Health Statistics (NCHS), the Centers for Disease Control and Prevention Division of Oral Health (CDC/DOH), and NIDCR met to discuss the release of current NHANES oral health data and plans for future NHANES data cycles.

### **Staff Attendance**

Division of Extramural Research staff attended conferences, workshops, and meetings to offer their expertise to investigators and trainees involved in NIDCR-supported research:

- Annual Meeting of the International Society for Stem Cell Research held June 22-25 in San Francisco, CA.
- American Head and Neck Society Annual Meeting, July 16-20, 2016, in Seattle, WA.
- Annual meeting of the Society for Craniofacial Genetics & Developmental Biology, August 3-4, in Boston, MA.
- TMJ Association 8th Scientific meeting held September 11-13, in Bethesda, MD.
- American Society for Bone and Mineral Research, September 15-19, in Atlanta, GA.
- DARPA-NIH Micro Physiological Systems 9th Joint Review Meeting, Sep 29-30, in Ballston, VA.
- Academy of Dental Materials (ADM) meeting held October 12-15, in Chicago, IL.
- IOM Forum on Regenerative Medicine, Workshop on State of Science and Forum members' Meeting on Oct 13-14, in Washington, DC.
- Expanding the Scope of Research in Global Health, held October 14, in Bethesda, MD.
- HIV Research for Prevention meeting held October 17-20, in Chicago, IL.
- Annual meeting of the American Dental Association held October 20-24, in Denver, CO.
- Annual Interagency Pain Research Coordinating Committee (IPRCC) meeting held October 31, in Bethesda, MD.
- Health Policy Orientation, Shaping Health Policy in the United States: An Insider's Guide. October 24-26, in Washington, DC.
- Annual Big Data 2 Knowledge All Hands meeting held November 29-30 in Bethesda, MD.
- Healthy Futures: Engaging the Oral Health Community in Childhood Obesity Prevention National Conference. November 3-4, in Washington, DC.
- 18<sup>th</sup> Annual HHS SBIR/STTR Conference held November 15-17, in Orlando, FL.
- NIH Pain Consortium Symposium Planning Meeting held November 21 in Bethesda, MD.
- Annual Society for Neuroscience meeting held November 12-16, in San Diego, CA.
- American College of Rheumatology annual meeting held November 13-16 in Washington, DC.
- Annual American College of Rheumatology Conference 2016, Nov 11-16 in Washington, DC.
- EORTC-NCI-AACR Molecular Targets and Cancer Therapeutics Symposium held Nov 29-Dec 2 in Munich, Germany.
- NIH Developmental Biology workshop on December 1 in Bethesda, MD.
- 2016 High-Risk, High-Reward Research Symposium, December 5-7 in Bethesda, MD.

Margo Adesanya, DDS, MPH, chief of the Science Policy and Planning Branch, attended the NIH Tribal Consultation Advisory Committee meeting held December 15-16 in Bethesda, MD. The Committee serves

as an advisory body to NIH, helping to ensure that Tribes and American Indian/Alaska Native people have meaningful and timely input in the development of relevant NIH policies, programs, and priorities.

### **Training and Career Development News**

#### **Outreach**

The NIDCR Office of Education in the Division of Intramural Research participated in many activities to recruit students and researchers at all levels. These activities are highlighted below:

- On September 7, Deborah Philp, PhD, director of the NIDCR Office of Education, gave an informational seminar to undergraduate students as a part of the Biology Department/STEM Accelerator Program at George Mason University. Dr. Philp's presentation focused on available training opportunities at NIDCR.
- On September 28, Dr. Philp represented NIDCR at an undergraduate training recruitment session held at Howard University. Dr. Philp met with students and postdoctoral trainees to discuss opportunities available at NIH.
- October 12-15, Dr. Philp attended the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) Annual Conference in Long Beach, CA, where she met with students, professors and researchers interested in research opportunities at NIDCR.
- November 9-12, Dr. Philp attended the Annual Biomedical Research Conference for Minority Students (ABRCMS) in Tampa, FL, where she met with students, professors and researchers interested in research opportunities at NIDCR.

The NIDCR Research Training and Career Development Branch (RTCDB) in the Division of Extramural Activities reaches out to the community through conferences, meetings and workshops to develop research training programs and to encourage predoctoral students, postdoctoral fellows, and junior investigators to apply for NIDCR research training and career development awards. These activities are listed below:

- Dr. Leslie Frieden, PhD, RTCDB extramural training officer, attended the American Society for Bone and Mineral Research Annual meeting September 15-19 in Atlanta, GA. At this meeting, Dr. Frieden served as a mentor for the ASBMR Networking Breakfast, and met with prospective applicants in the NIH booth.
- Dr. Frieden presented a seminar on NIDCR Research Career Pathways at the AADR/NIDCR videocast to dental residents at Lutheran Medical Centers, September 27.
- Dr. Frieden presented a talk to participants in Howard University Dental School's Research Day on November 9 in Washington, DC.
- Dr. Lynn King, PhD, chief of the RTCDB, participated in the 22<sup>nd</sup> Hinman Student Research Symposium on October 28-30 in Memphis, TN. Dr. King attended the poster sessions, met with dental students, and presented in the oral session on NIDCR Research Training Opportunities for dentists.
- Dr. King participated as a panel member discussing NIDCR research opportunities for dental student participants during the ADA Dental Student Conference on Research visit to NIDCR on October 4 in Bethesda, MD.

## Highlights of Trainee Scientific Achievements

### Trainees Who Have Achieved Subsequent NIH Grants

#### *First R01/U01s*

- Mae St. John, MD, PhD, former NIDCR K23 awardee, associate professor in residence, Department of Surgery, University of California/ Los Angeles, (NCI), R01, “Intraoperative Parathyroid Localization Using DOCI”

#### *Pathway to Independence Awards (K99/R00)*

The following investigator transitioned to a tenure track research faculty position (R00 phase)

- Marcos Simoes-Costa, PhD, assistant professor, Department of Molecular Biology and Genetics, Cornell University, R00: “Integrating signaling and transcriptional control in neural crest specification.”

#### *Transitions from Institutional Training Grant Support to Individual Awards*

NIDCR strongly encourages trainees supported on institutional training grants to apply for and achieve individual fellowships or career development awards.

- Kevin Byrd, DDS, University of North Carolina Chapel Hill, NIDCR Career Development Award (K08), “Mechanisms of Oral Epithelial Differentiation.”
- Jessica Scoffield, PhD, University of Alabama at Birmingham, NIDCR Pathway to Independence Award (K99/R00), “Inhibition of Streptococcus Mutans By Oral Commensal Streptococci and Nitrite-Mediated Activity.”

### Recent Publications from Trainees

#### *F Fellows*

**Brackley AD**, Gomez R, Akopian AN, Henry MA, Jeske NA. [GRK2 Constitutively Governs Peripheral Delta Opioid Receptor Activity](#). Cell Rep. 2016 Sep 6;16(10):2686-98.

**Chang I**, Wang CY. [Inhibition of HDAC6 Protein Enhances Bortezomib-induced Apoptosis in Head and Neck Squamous Cell Carcinoma \(HNSCC\) by Reducing Autophagy](#). J Biol Chem. 2016 Aug 26;291(35):18199-209.

**Facompre ND**, Harmeyer KM, Sole X, Kabraji S, Belden Z, Sahu V, Whelan K, Tanaka K, Weinstein GS, Montone KT, Roesch A, Gimotty PA, Herlyn M, Rustgi AK, Nakagawa H, Ramaswamy S, Basu D. [JARID1B Enables Transit between Distinct States of the Stem-like Cell Population in Oral Cancers](#). Cancer Res. 2016 Sep 15;76(18):5538-49.

**Loomans HA**, Arnold SA, Quast LL, Andl CD. [Esophageal squamous cell carcinoma invasion is inhibited by Activin A in ACVR1B-positive cells](#). BMC Cancer. 2016 Nov 9;16(1):873.

#### *K Awardees*

Cuevas J, **Chi DL**. [SBIRT-Based Interventions to Improve Pediatric Oral Health Behaviors and Outcomes: Considerations for Future Behavioral SBIRT Interventions in Dentistry](#). Curr Oral Health Rep. 2016 Sep;3(3):187-192. J Endod. 2016 Oct;42(10):1490-5.

Gowans LJ, Adeyemo WL, Eshete M, Mossey PA, Busch T, Aregbesola B, Donkor P, Arthur FK, Bello SA, Martinez A, Li M, Augustine-Akpan EA, Deressa W, Twumasi P, Olutayo J, Deribew M, Agbenorku P, Oti AA, Braimah R, Plange-Rhule G, Gesses M, Obiri-Yeboah S, Oseni GO, Olaitan PB, Abdur-Rahman L, Abate F, Hailu T, Gravem P, Ogunlewe MO, **Buxó CJ**, Marazita ML, Adeyemo AA, Murray JC, **Butali A**. [Association Studies and Direct DNA Sequencing Implicate Genetic Susceptibility Loci in the Etiology of Nonsyndromic Orofacial Clefts in Sub-Saharan African Populations](#). *J Dent Res*. 2016 Oct;95(11):1245-56.

Mandal R, Şenbabaoğlu Y, Desrichard A, Havel JJ, Dalin MG, Riaz N, Lee KW, Ganly I, Hakimi AA, Chan TA, **Morris LG**. [The head and neck cancer immune landscape and its immunotherapeutic implications](#). *JCI Insight*. 2016 Oct 20;1(17):e89829.

Münchow EA, Pankajakshan D, Albuquerque MT, Kamocki K, Piva E, Gregory RL, **Bottino MC**. [Synthesis and characterization of CaO-loaded electrospun matrices for bone tissue engineering](#). *Clin Oral Investig*. 2016 Nov;20(8):1921-1933.

**Nichols JT**, Blanco-Sánchez B, Brooks EP, Parthasarathy R, Dowd J, Subramanian A, Nachtrab G, Poss KD, Schilling TF, Kimmel CB. [Ligament versus bone cell identity in the zebrafish hyoid skeleton is regulated by mef2ca](#). *Development*. 2016 Dec 1;143(23):4430-4440.

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## PUBLICATIONS

### Selected Extramurally Funded Science Advances

#### High Impact Findings from Seasoned Investigators

During the last four months, 354 extramurally funded studies were published in the scientific literature. Below is a list of the most important papers published from each program area.

#### Behavioral and Social Science Research

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#### Center Clinical Research

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#### Translational Genomics Research Branch

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## **Division of Extramural Research Staff Publications**

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## **Selected Division of Intramural Research Publications**

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**Joo EE, Lombaert IM, Yamada KM.** [Hyperacetylation of Microtubules in Mesenchymal Cells Increases Cytokeratin 14-Positive Epithelial Progenitors in Developing Salivary Glands](#). J Dent Res. 2016 Dec;95(13):1518-1527.

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## Review Articles

Abusleme L and Moutsopoulos N.M. 2016. [IL-17: Overview and role in oral immunity and microbiome](#). *Oral Diseases*. 2016 Oct 20. doi: 10.1111/odi.12598. [Epub Ahead of Print].

Burke AB, Collins MT, Boyce AM., [Fibrous dysplasia of bone: craniofacial and dental implications](#)., *Oral Dis*. 2016 Aug 5. doi: 10.1111/odi.12563. [Epub ahead of print] PMID: 27493082

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## Office of Science Policy and Analysis Staff Publications

Ferland CL, O'Hayre M., Knosp WM, Fox CH, Horsford DJ. [The NIH's Funding to US Dental Institutions from 2005 to 2014](#). *J Dent Res*. 2017 Jan; 96(1):10-16.

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## FUNDING UPDATE

### Program Announcements

Microphysiological Systems (MPS) for Disease Modeling and Efficacy testing (UG3/UH3)

Biosensors in the Oral Cavity (R01/R21)

Administrative Supplements for Research on Sexual and Gender Minority (SGM) Populations (Admin Supp)

Addressing the Etiology of Health Disparities and Health Advantages Among Immigrant Populations (R01)

Addressing the Etiology of Health Disparities and Health Advantages Among Immigrant Populations (R21)

In-Depth Phenotyping and Research Using IMPC-Generated Knockout Mouse Strains Exhibiting Embryonic or Perinatal Lethality or Subviability (R01)

Emerging Global Leader Award (K43)

### **Requests for Applications**

NIDCR Award for Sustaining Outstanding Achievement in Research (SOAR) (R35)

NIH Health Care Systems Research Collaboratory - Demonstration Projects for Pragmatic Clinical Trials (UG3/UH3)

Data and Resource Generation Centers for Illuminating the Druggable Genome (U24)

NIH Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) Award (F99/K00)

Implementation Science Research to Improve Dental, Oral and Craniofacial Health (U01)

Stimulating Peripheral Activity to Relieve Conditions (SPARC): Pre-clinical Development of Existing Market-approved Devices to Support New Market Indications (U18)

Microphysiological Systems (MPS) for Disease Modeling and Efficacy Testing (UG3/UH3)

BD2K Support for Meetings of Data Science Related Organizations (U13)

### **Notices**

Revision: Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PAR-15-280 "Multidisciplinary Studies of HIV/AIDS and Aging (R01)"

Notice of Reissuance of PAR-16-106 and Change in Due Dates for R21 Applications on the Assessment of Zika Virus (ZIKV) Complications

Notice of Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PA-15-105 "Novel Biomarkers for the Development of HIV Incidence Assays with Improved Specificity (R01)"

Notice of Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PA-15-106 "Novel Biomarkers for the Development of HIV Incidence Assays with Improved Specificity (R21)"

Notice of Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PAR-15-350 "Emerging Directions for Addressing Health Disparities in Alzheimer's Disease (R03)"

Notice of Correction to PAR-16-156 "NIDCR Dual Degree Dentist Scientist Pathway Independence Award (K99/R00)"

Notice of Intent to Publish a Funding Opportunity Announcement for Zika Virus (ZIKV) Complications (R21)

Notice of Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PAR-15-282 "Multidisciplinary Studies of HIV/AIDS and Aging (R21)"

Notice of Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PAR-15-280 "Multidisciplinary Studies of HIV/AIDS and Aging (R01)"

Notice of Participation of the National Institute of Dental and Craniofacial Research (NIDCR) in PAR-15-349 "Health Disparities and Alzheimer's Disease (R01)"