June 1, 2018

Melinda Kelley, Ph.D.
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National Institute on Aging
Building 31, Room 5C27
31 Center Drive, MSC 2292
Bethesda, MD 20892

Re: Inviting Scientific Interest in Geroscience Summit III (NOT-AG-18-011)

Via: geroscience3@mail.nih.gov

Dear Dr. Kelley:

On behalf of the 3,400 individual and 103 institutional members of the American Association for Dental Research (AADR), we are pleased to respond to the request for information NOT-AG-18-011, “Inviting Scientific Interest in Geroscience Summit III”. According to the U.S. Census Bureau, “America’s 65-and-over population is projected to nearly double over the next three decades, from 48 million to 88 million by 2050.”¹ Novel methods will be needed to more effectively prevent, diagnose and treat age-related conditions.

A healthy dental, oral and craniofacial complex is essential to total health and to maintaining independence, longevity and a high quality of life. The FDI World Dental Federation defines oral health as “the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex”.² Therefore, AADR strongly recommends the inclusion of at least one oral health session in Geroscience Summit III to address age-related oral health conditions.

We have provided responses below to the specific input requested by conference organizers.

1) Recommendations for specific age-related chronic diseases/conditions that should be considered in the planning for a third NIH Geroscience Summit.

Oral-systemic connection A session exploring the oral-systemic connection would emphasize the importance of oral health to total health. Such a session would have a dental, oral and craniofacial condition as the central topic with a discussion of research on how oral conditions can exacerbate or complicate chronic systemic conditions and vice versa. The session should also explore opportunities for interdisciplinary research. Furthermore, such a session would draw attention to the need for interprofessional collaboration among health professionals to maintain the health of the oral cavity, as recently highlighted by Drs. Martha Somerman and Janice Lee of the National Institute of Dental and Craniofacial Research (NIDCR) in the Journal of the American Medical Association.³
Examples of conditions in which oral and chronic systemic conditions interact include diabetes, pain and the opioid crisis, HIV/AIDS, cancer and Sjögrens syndrome. Some of these conditions are described in detail below.

**Chronic orofacial pain and overlapping pain conditions** For over a decade, AADR members have been engaged in the Orofacial Pain: Prospective Evaluation and Risk Assessment (OPPERA) study on the risk factors for developing temporomandibular joint disorder (TMJD). One of the study’s findings is that comorbidity of other health conditions is a strong predictor for development of TMJD. Another chronic pain condition, trigeminal neuralgia, was found by one systemic review to most commonly affect the mandibular and maxillary branches of the trigeminal nerve. Finally, the risk of shingles increases with age. One complication of shingles is postherpetic neuralgia, which is characterized as a burning pain that persists long after the shingles rash has resolved. Chronic pain, including neuropathic pain, and the prevalence of comorbidities in the occurrence of these conditions are important issues.

**Edentulism** As of 2016, a quarter of adults 75 and older was edentulous. In 2017, AADR advocated that the NIH include research on the impact of nutrition on the loss of teeth in older adults in the NIH Nutrition Research Strategic Plan. Specifically, AADR recommended research that 1) monitors the nursing home population for dietary intake of edentulous patients without prostheses, with conventional prostheses, and with implant prostheses and 2) elucidates the impact of diet and nutritional status on the development and progression of periodontal disease, especially in older adults. A session at Geroscience Summit III could also explore the social, behavioral and biological risk factors for edentulism.

**Caries and periodontal disease** Untreated caries is high among all age groups. Among adults 65 and older, over 20% had untreated caries between 2011 and 2014. In 2012, over half of adults aged 50-64 and 68% of adults over the age of 65 had periodontal disease. Both of these diseases can result in tooth loss, pain and decreased oral function and may affect nutritional intake, which has implications for frailty.

**Oral and pharynx cancer** The median age of oral and pharynx cancer diagnosis is 63, and the median age at death is 67. Over half of all new cases and deaths occur in adults between the ages of 55 and 74.

**Xerostomia (dry mouth)** Xerostomia is insufficient salivary production. According to NIDCR, “hundreds of medicines” can cause dry mouth. These include medications common to older adults such as those that treat blood pressure. Dry mouth can affect negatively affect speaking, chewing and swallowing and increase the risk for dental caries and fungal infections of the mouth.

**Bisphosphonate-related osteonecrosis of the jaw (BRONJ)** Bisphosphonates are used to treat age-related diseases such as osteoporosis and cancer. Dental services can trigger necrosis of the jaw, or necrosis can develop spontaneously after bisphosphonate use. BRONJ can cause pain, bone or soft tissue infection and fracture.

AADR also supports the recommendations of the Special Care Dentistry Association to consider addressing the oral health needs of aging adults with special needs.
2) Feedback on whether individual organizations may be interested in contributing input to the planning of such a Summit, and areas of interest for participation.

AADR would appreciate the opportunity to contribute input to the planning of the Geroscience Summit III. AADR’s 3,400 members are engaged in research on the many factors that affect oral health and aging. AADR members are organized into scientific groups and networks, which facilitate research coordination as well as communication of novel research findings. AADR’s scientific groups and networks are responsible for producing the scientific content of the meetings of AADR and its parent organization, the International Association for Dental Research. The following is a description of some of the groups that may have the most immediate link to oral health and aging:

**Geriatric Oral Research Group** Group members share interests in research on aging; allied fields (such as nutrition, oral physiology, prosthodontics, and conservative dentistry); oral diseases and conditions that impact the overall wellbeing of older people; and policies on the education and clinical practice of dental geriatrics reflecting the most current evidence.

**Behavioral, Epidemiologic and Health Services Research Group** Scientific areas of concentration include research on the epidemiology of oral diseases and their prevention, social inequalities, behavioral dentistry, health professions and public education, evidence-based policy interventions, population-based observational and interventional studies, and community-based participatory action research.

**Nutrition Research Group** Members share an interest and expertise in research on nutrition and diet and their interrelationships to oral health, health promotion behaviors, and systemic health.

**Prosthodontics Research Group** The research topics covered in this Group are, but not limited to: prosthodontic-related materials, cariology, implant dentistry, tissue engineering, and quality of life.

**Cariology Research Group** Members promote research on the etiology, epidemiology, risk assessment, pathogenesis, diagnosis, prevention and management of dental caries. Furthermore, the CRG supports and provides a forum for research on dental erosion and abrasion, fluorosis, microbiological and genetic aspects of caries, dental public health and fluoride- and calcium-containing oral care products.

**International Network for Orofacial Pain and Related Disorders Methodology (INfORM)** INfORM’s specific goal is to maintain and continue to add to a working consortium of multi-national clinical centers having the capability to conduct interdisciplinary basic, translational and clinical research on an international and collaborative level into the etiology, diagnosis, prevention and management of TMD, orofacial pain conditions, and related disorders. One of INfORM’s key objectives is to continue to develop comparable evidence-based diagnostic criteria through research collaboration into all acute and chronic dental and orofacial pain conditions.
The full list and descriptions of AADR’s scientific groups and networks can be found at [http://www.iadr.org/IADR/Join-Renew/Groups-Networks/Group-Network-Descriptions](http://www.iadr.org/IADR/Join-Renew/Groups-Networks/Group-Network-Descriptions).

3) Feedback on whether individual organizations may be interested in participating in a summit session that would encompass scientific presentations by public and private stakeholders about the links between specific chronic diseases and geroscience, as well as suggested subtopics for such a session.

AADR would welcome the opportunity to participate in a session on the links between specific chronic diseases and geroscience and recommends any of the conditions described above as potential subtopics. AADR members routinely present their research at scientific conferences similar to the Geroscience Summit. If the organizers of this conference are interested in including oral health as a subtopic in this session, AADR would be pleased to recommend and help facilitate the participation of our members in this important meeting.

4) Input on the potential impact of this type of session on future scientific needs and progress in regard to specific diseases affected by aging.

The oral health cavity is often overlooked, but maintaining a healthy oral cavity and craniofacial complex throughout the lifespan is important to longevity and a high quality of life. Our hope is that by including a session on aging and oral health and focusing such a session on the importance of oral health to total health, researchers from other disciplines will incorporate the oral cavity into their research as well as the effect of novel therapies on the oral cavity. Older adults are often afflicted with comorbidities, so it will take interdisciplinary teams of scientists, interdisciplinary ways of thinking and interprofessional collaboration to address the health needs of older adults.

The members of AADR stand ready to work with the organizers of the Geroscience Summit III as the planning process progresses. We look forward to the conference in Spring 2019. If you have any additional questions, please do not hesitate to reach out to Director of Science Policy and Government Affairs, Dr. Seun Ajiboye, at [sajiboye@iadr.org](mailto:sajiboye@iadr.org) or 703-299-8099.

Sincerely,

Christopher H. Fox, DMD, DMSc
Chief Executive Officer

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References


