June 29, 2018

Martha Somerman, DDS, PhD
Director
National Institute of Dental and Craniofacial Research
31 Center Drive, Building 31
Room 2C 39
Bethesda, MD 20892

Re: Accelerating the Advancement of Digital Dentistry

Dear Dr. Somerman:

On behalf of the 3,400 individual and 103 institutional members of the American Association for Dental Research (AADR), we fully support NIDCR’s proposed initiative, “Accelerating the Advancement of Digital Dentistry” and are pleased to submit the following comments.

Digital imaging for diagnostic use, such as advanced imaging techniques to monitor for caries, tooth cracks, oral lesions, pocket depths, attachment loss, occlusion, wear, biting forces, plaque indices, salivary analyses, erosion, etc., is expected to be integral to dental practice in the future. This is especially true with paradigm shifts supporting more personalized care. One can imagine these tools, in conjunction with the use of specific biosensors, being integrated within electronic records, taking into account information from existing records, such as historical data on previous and current conditions, leading to enhanced treatment planning and improved management of numerous oral and perhaps systemic diseases. In addition, NIDCR could look at ways to use this newly captured information from the population as a whole for epidemiological and predictive purposes.

It is unimaginable that there will be a future in digital dentistry without 3D printing of restorative dental materials. This is still very much in its infancy, but there should be some emphasis on: 1) integrating 3D printing technologies with existing imaging tools, especially with respect to low cost desktop 3D printing machines that are very much a reality already, but do not really communicate with existing digital imaging tools available clinically; 2) developing, understanding and optimizing materials that have been used in dentistry for many years in a way that they can be printed and used chair-side; and 3) printing of multi-material parts that integrate polymers/metals/ceramics.

Lastly, in situ sensing technologies to analyze key aspects of the microbiome will provide options for personalized care related to oral diseases of a microbial origin.
Once again, we are grateful for the opportunity to comment on this important initiative. We stand ready to work with you and NIDCR as this initiative develops. Please do not hesitate to contact Dr. Seun Ajiboye, Director of Science Policy and Government Affairs, at sajiboye@iadr.org with questions or for additional information.

Sincerely,

Christopher H. Fox, DMD, DMSc
Chief Executive Officer

Maria Emanuel Ryan, DDS, PhD
President