FACULTY of DENTISTRY
UNIVERSITY of the WESTERN CAPE

1 August 2022

Report: UMSAEP funded to School of Dentistry, Missouri-Dr Razia Adam

My trip was planned to occur in 2020 and due to the pandemic was postponed. I finally managed to

In the meantime I shadowed some of the researchers in Professor Wang's laboratory:

1. **Viviane Hass-** DDS, MSc, PhDPostdoctoral fellow at University of Missouri - Kansas City
   She has an interest in dentine bonding agents, use of polyphenols. A summer research scholar was working on her project.This project was focused on evaluating the effects of synthetic crosslinker methacrylate-functionalized proanthocyanidins (MAPAs) included in two commercial adhesives on dentin bonding after 1-year storage; specifically, the bonding properties such as micro-tensile bond strength, hybridization ability, nanoleakage, and the biomolecular analysis of the endogenous collagenases activity within the hybrid layer which will be assessed.
   As part of this research, Dr Hass showed us how to test using the Confocal Fluorescence Microscope.

2. **Rong Wang-** Research Assistant Professor (Oral and Craniofacial Sciences)
   Her research area involves using the Fourier transform infrared (FTIR) imaging technique was used in a transmission model for the evaluation of twelve oral hyperkeratosis (HK), eleven oral epithelial dysplasia (OED), and eleven oral squamous cell carcinoma (OSCC) biopsy samples in the fingerprint region of 1800–950 cm−1.

   In addition there were also two additional summer research scholars who worked on the following projects:

- Benign,Premalignant and malignant oral biopsy tissue evaluation using vibrational spectroscopic imaging.
- Longevity of digital restorations performed in a predoctoral clinical curriculum.

Meetings were also had with other staff members in the Dental school:

1. Jean-Marc Retrouvey-

I spent a few sessions with Professor Retrouvey learning about his digital workflow and the incorporation into the residency programme.

2. Melanie Simmer Beck- Professor, Chair of Dental Public Health and Behavioral Science and Director of the STAHR Program

   She holds joint appointments in the departments of Dental Public Health and Behavioral Science and Oral and Craniofacial Sciences. Dr. Simmer-Beck uses her interdisciplinary background in Oral and Craniofacial Sciences, Public Affairs & Administration, and Dental Hygiene to teach courses in Ethics & Professionalism and Clinical Decision Making, in addition to directing the dental pipeline program, STAHR Scholars Dentistry. Her research focuses on implementation science, program evaluation, access to oral health care, oral health disparities, dental workforce models and policy, and ergonomics. She has been the recipient of federal funds to move forward her research agenda. Dr. Simmer-Beck's research has been presented at national and international professional meetings and published in peer-reviewed journals.

3. Meghan Wenland-Assistant Professor , Department of Dental Public Health

   Dr. Wendland teaches public health, behavioral sciences, and ethics and professionalism courses within the pre-doctoral dental program and coordinates the Interprofessional Education (IPE) curriculum for the School of Dentistry. Dr. Wendland's research focuses on disparities in health and health care and improving health outcomes in diverse populations. Her interests include medical-dental integration, person-centered care, and oral health care delivery reform.

4. Timothy Cox - Endowed Professor in Dental & Musculoskeletal Tissue Research

   Dr Cox's research interests are in both basic and translation sciences, including in understanding genetic and epigenetic contributions to craniofacial development and influencing susceptibility to, and presentation of, common craniofacial conditions, such as cleft lip, midface hypoplasia and craniofacial microsomia. Dr Cox's research uses both the mouse and chick as model systems and quantitative high-resolution 3D tomographic imaging to qualitatively and quantitatively assess the impact of genetic mutations and maternal diet on early facial morphogenesis and its postnatal consequences. Part of his lab is also focused on providing new insight into the genetic basis of the aforementioned human conditions by employing the latest genomic sequencing tools on relevant patient cohorts in partnership with local, national and international collaborators.

   In addition, meetings with Ar (i)-3.6 (n)0lid(an)9(bc)6.1 (o)3.4 7(w)3.2 (i).9(s)-8.1 (in)8.Ttidi hud i.3 (o)-0.7(g