The Department of Biomedical Sciences serves as a hub for basic and translational research at the College of Dentistry, located in Dallas. Additional interdisciplinary and translational research opportunities are provided by research faculty located in the clinical departments or specialty areas of Advanced Education in General Dentistry, Comprehensive Dentistry, Dental Public Health, Diagnostic Sciences, Endodontics, Oral and Maxillofacial Pathology, Oral and Maxillofacial Radiology, Oral and Maxillofacial Surgery, Periodontics, Prosthodontics, and Public Health Sciences. Faculty participating in the graduate programs have research interests that range widely within a central focus area of craniofacial biology. These research interests include:

Bioengineering and Regeneration
This focus area offers a wide range of research projects using bioengineering scaffolds and delivery vehicles needed for tissue regeneration, plus biomechanics of dental tissues (particularly dentin and bone, with the application of this data to the design of new dental materials).

Craniofacial Development and Genetics
New discoveries in genetic epidemiology and the functional genomics of commonly inherited disorders have opened up avenues for early diagnosis and intervention.

Mineralized Tissue Biology
This area of study includes a broad spectrum of topics covering cell-cell and cell-matrix interactions during organogenesis and structural biology.

Translational Research
A highly interdisciplinary field aimed at developing a new cadre of biomedical researchers trained formally in translational and clinical research.

Neuroscience, Pain, and Sleep Apnea
This area explores craniofacial pain pathways using TMJ dysfunction as a model along with sleep disordered breathing.

Microbiology and Immunology
Molecular mechanisms of host-microbe interactions of homeostasis and dysbiosis for oral systemic health.

In addition to many well-equipped individual laboratories, the College provides access to core facilities and analytical instruments, including advanced microscopes (confocal, laser capture, multiphoton, slide scanning, and scanning electron microscope), real-time PCR, and microCT.

Expert faculty provide basic science instruction to students in dental, dental hygiene, and graduate clinical specialty programs, as well as those in pursuit of an MS in Oral Biology (OBIO) or PhD in Oral and Craniofacial Biomedical Sciences (OCSB). These graduate programs are administered by a graduate program committee, with members from basic science and clinical backgrounds.

Faculty
Gould, Douglas, Clinical Professor
Biomedical Sciences
PHD, Wayne State University, 1997

Honeyman, Allen L, Instructional Associate Professor
Biomedical Sciences
PHD, University of Kansas, 1988

Kramer, Phillip R, Professor
Biomedical Sciences
PHD, Texas A&M University, 1996

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Biomedical Sciences
MD, Henan Medical University, 2000
PHD, Zhengzhou University, China, 2014

Logan, Shaun M, Instructional Associate Professor
Biomedical Sciences
PHD, University of North Texas Health Science Center, 2009

Lu, Yongbo, Professor
Biomedical Sciences
MD, Qingdao University Medical College, 1994
PHD, University of Missouri at Kansas City, 2007

Newman, Joseph T, Instructional Associate Professor
Biomedical Sciences
MD, University of Texas Medical School at San Antonio, 1973

Opperman, Lynne A, Regents Professor
Biomedical Sciences
PHD, University of the Witwatersrand, South Africa, 1985

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PHD, Okayama University, Japan, 1998
DDS, Harbin Medical University, China, 1983

Reuben, Jayne S, Instructional Associate Professor
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PHARMD, Florida A&M University, 2001

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PHD, McGill University, Montreal, Canada, 2002

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PHD, University of Michigan at Ann Arbor, 1985

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PHD, University of Nebraska Medical Center, 1982

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MD, Wannan Medical College, People’s Republic of China, 1986

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PHD, Baylor University, 2006
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PHD, Chinese Academy of Sciences, 1998

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BDS, Fourth Military Medical University, China, 1995
PHD, Fourth Military Medical University, China, 2003

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PHD, University of Pittsburgh, 2020

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MD, Qingdao Medical College, China, 1994
PHD, University of Missouri at Kansas City, 2010