Table 2. Participating Faculty Members

Name/Degree(s)	Rank	Primary (& Secondary) Appointment(s)	Role in Program	Research Interest
Amendt, Brad, PhD, MS, BS	Professor	Anatomy & Cell Biology; Dows Institute-Research	Mentor	Molecular and biochemical mechanisms of the PITX2 homeobox protein during development, role of homeodomain genes in heart, pituitary and tooth development.
Banas, Jeff, PhD, BS*	Professor	Dows Institute-Research; Pediatric Dentistry	Mentor	The understanding of the pathogenic mechanisms of bacteria, the microbiology of dental caries, has extensively studied how the glucan-binding proteins (GBPs) synthesized by Streptococcus mutans contribute to the development of the plaque biofilm and ultimately dental caries.
Brennan, Tim, MD, PhD, BS*	Professor	Anesthesia	Mentor	Neural mechanisms for post-operative pain.
Brogden, Kim, PhD, MS, BS*	Professor	Dows Institute-Research; Periodontics	Mentor; Member, Faculty Leadership Team	The basic parameters of defensin-induced adaptive immunity in the oronasal cavity, identifying the defensins involved, assessing the defensin- induced response to Porphyromonas gingivalis HagB, fimbriae, and capsular polysaccharide, and elucidating the basic mechanism through defensin-stimulated dendritic cells.
Cavanaugh, Joe, PhD, MS, BS, BS	Professor	Biostatistics	Mentor	Biostatistics, model selection, time-series analysis, state-space models, linear models, mixed models, modeling diagnostics, discrimination and classification, and computational statistics.
Damiano, Peter, DDS, MPH, BS*	Professor	Public Policy Center; Preventive & Community Dentistry	Mentor	Access to primary dental and medical care, especially regarding maternal and child health issues; quality of care; public and private health insurance programs; and health policy.
Dawson, Deborah, PhD, ScM, BA*	Professor	Dows Institute-Research; Pediatric Dentistry	Mentor; Member, Program Advisory Committee	Statistical genetic modeling of human disorders, particularly in the areas of oral disorders.
Denry, Isabelle, DDS, PhD, MS	Professor	Dows Institute-Research; Prosthodontics	Mentor; Member, Faculty Leadership Team	Ceramics for biomedical applications.
Domann, Rick, PhD, BS*	Professor	Radiation Research Lab; Radiation Oncology	Mentor; Member, Program Advisory Committee	The transcriptional regulation of cancer-related genes including oncogenes and tumor suppressor genes, the molecular mechanisms by which aberrant cytosine methylation of CpG dinucleotides affects gene expression during the development of cancer.
Drake, David, PhD, MS*	Professor	Dows Institute-Research; Endodontics	Mentor	Transmission of specific genotypes of Streptococcus mutans (SM) from mother to child in different populations. His current R01 study is looking at acquisition of SM in American Indian children from birth to three years of age. Currently conducting this study in partnership with the Oglala Sioux Tribe in Pine Ridge, South Dakota.
Haynes, William, MD, MRCP, MBChB, BSc*	Professor	Internal Medicine; Endocrinology	Mentor	Vascular medicine and the prevention and regression of atherosclerosis through management of cardiovascular risk factors including hyperlipidemia, hypertension and high homocysteine.
Horswill, Alex, PhD, BS*	Associate Professor	Microbiology	Mentor	Peptide quorum sensing system of Staphylococcus aureus: expression of the virulence response, including down-regulating the expression of surface proteins, such as adhesins and antigens.
Houtman, Jon, PhD, BA*	Associate Professor	Microbiology	Mentor	Molecular mechanisms for the activation and function of the adaptor protein LAT and to characterize the molecular mechanism for the crosstalk between TCR- and costimulatory receptor-induced signaling pathways. Collectively, these studies will help to better understand the normal immune response to pathogens, and to help us develop novel treatments for debilitating diseases linked to costimulatory receptor function, including autoimmune disorders, human cancers and transplant rejection.
Jessop, Julie, PhD, BS*	Associate Professor	Chemical & Biochemical Engineering	Mentor	Spectroscopic characterization of polymer reactions; dental composites; hybrid photopolymer resins; cationic ring-opening photopolymerizations; polymers from renewable resources; chemically amplified photoresists.

Klingelhutz, Al, PhD, BS	Associate Professor	Microbiology	Mentor	How epithelial cells overcome senescence and become immortal following infection with human papillomavirus (HPV), both telomere-dependent and telomere-independent mechanisms of senescence, so-called "premature senescence" that occurs when epithelial cells are cultured in vitro, cyctic fibrosis-related programs attempting to generate conditionally-transformed airway epithelial cell lines that retain normal phenotypes.
Kuthy, Ray, DDS, MPH, BS*	Professor	Preventive & Community Dentistry; Public Policy Center	Mentor	Dentist workforce and practice location sites; effect of extramural dental school programs on willingness to treat underserved populations; oral health needs assessment for local and state level policy development; impact of oral health safety net programs on the oral health of children; and dental student career decision making.
Levy, Steven, DDS, MPH, AB*	Professor	Preventive & Community Dentistry; Epidemiology	Mentor; Associate Director; Member, Faculty Leadership Team	Various aspects of oral epidemiology, research with an extensive team of collaborators on the Iowa Fluoride Study (IFS) is investigating the epidemiology of fluoride intake and dental fluorosis; fluoride intake, dietary patterns, genetics, and dental caries; esthetic perceptions of dental fluorosis and other conditions; the relationship between infants' and young children's feeding and sucking patterns and dental growth as well as development and malocclusion; genetic aspects studied concerning dental fluorosis and caries; childhood/adolescent bone development, fluoride, and other factors.
Manak, John, PhD, MS, BS	Assistant Professor	Biology	Mentor	Genomics and genetics of human disease, fly models of human disease, genomics technology development.
Murray, Jeff, MD*	Professor	Neonatology; Pediatric Dentistry	Mentor; Member, Faculty Leadership Team	Human molecular genetics incorporating basic science, clinical, and epidemiologic approaches to the identification of genes and environmental factors involved in birth defects; included identification of a transforming growth factor alpha with cleft lip and palate, the initial linkage identification of a range of human genetic disorders, the gene cloning for a new homeobox gene family resulting in the Rieger syndrome and dental anomalies, the cloning of the HMX gene homeobox family and its characterization.
Nopoulos, Peggy, MD, BS*	Professor	Psychiatry	Mentor	Anemia of prematurity, behavioral neuroscience, brain development, brain imaging, cleft lip/palate, craniofacial, huntington's disease, MRI, prematurity, sex differences.
Parker, Edith, DrPH, MPH, BA	Professor	Community & Behavioral Health	Mentor	The development, implementation, and evaluation of community-based participatory interventions to improve health status.
Quelle, Dawn, PhD, BS	Associate	Pharmacology	Mentor	ARF, breast cancer, Mdm2, p53, pancreatic cancer, tumor suppression.
Salem, Aliasger, PhD, BSc	Associate	Pharmaceutics	Mentor	Developing polymeric particles for cancer vaccines.
Schlievert, Pat, PhD, BA	Professor	Microbiology; internal medicine	Mentor	Studies of superantigen and cytolysin exotoxins produced by Staphylococcus aureus and group A streptococci as immune system modulators.
Snetselaar, Linda, PhD, MS, BS	Professor	Epidemiology	Mentor	Nutrition and diet, lipids, cancer or carcinogenesis, cardiovascular diseases, clinical trials, diabetes, environmental health, epidemiology, gastroenterology, hyptertension, nephrology, nutrition education, behavior.
Spitz, Douglas, PhD, BA	Professor	Radiation Oncology; Free Radical & Radiation Laboratory	Mentor	Oxidative stress in cancer biology and toxicology; role of $O_2^{\bullet-}$ and H_2O_2 in inducing genomic instability and gene amplification.
Squier, Christopher, PhD, DSc, FRCPath*	Professor	Dows Institute-Research; Oral Pathology, Radiology, & Medicine	Mentor; Director: Member, Faculty Leadership Team	Nature of the interactions between alcohol and tobacco components in the development of oral cancer and the mechanisms by which Staphylococcae and their toxins are involved in the vaginal pathogenesis of toxic shock syndrome; the role of oral health professionals in tobacco cessation.
Stanford, Clark, DDS, PhD, BS*	Associate Dean; Professor	Dows Institute-Research; Prosthodontics	Mentor;Member, Faculty Leadership Team	Implants, implant biomaterials and dental materials, bone biology including: biologically-mediated bone mineralization (implants), bone metabolism, osteoblasts, isolating and characterizing human osteogenic cells.
Strack, Stefan, PhD, MSc*	Professor	Pharmacology	Mentor	Mitochondria, neurodegenerative disease, protein kinase, protein phosphatase, signal transduction.
Torner, James, PhD, MS, BS	Professor	Epidemiology	Mentor	Stroke and cerebrovacular disorders, musculoskeletal disorders, neurological disorders, bone development, clinical trial methods, epidemiology methods, traumatic brain injury, injury and trauma systems evaluation, devices and pharmaceutical evaluation, disease registries, translational research.
Weber-Gasparoni, Karin, DDS, PhD, MS*	Associate Professor	Pediatric Dentistry	Mentor: Member, Committee on Recruitment and Diversity	Dental care for patients with special health care needs and infants, toddlers, and children of low-income, high risk populations, dental interventions, early childhood caries, psychological theories of motivation, and public health issues affecting the health of pediatric dental patients.

Wefel, James, PhD, BS*	Professor	Dows Institute-Research; Pediatric Dentistry	Mentor; Member, Faculty Leadership Team	The research areas include early caries detection, mechanisms of action of fluoride, topical fluorides, remineralization, kinetics of calcium phosphate crystal growth, laser and tooth interactions, secondary caries, oral fluoride kinetics, antimicrobials, and F-releasing materials. Specific research involves early caries detection, root surface caries, laser prevention of tooth demineralization, and F-releasing biomaterials and secondary caries.
Wehby, George, PhD, MPH, BS	Associate Professor	Health Management & Policy	Mentor	Cleft lip and palate, health economics, applied econometrics, health services research, health policy, cost-effectiveness and utility, medical effectiveness, maternal and child health, birth defects, child disability, clinical trials, quality of life studies, household economics, using human genetic information in health economics studies, healthcare effectiveness.
Welsh, Mike, MD, BS	Professor	Internal Medicine	Mentor	The biology and pathogenesis of cystic fibrosis and on developing new treatments; investigate the physiology and cell biology of airway epithelia, including the cilia that cover their surface; the biology of acid sensing ion channels in the centrral and peripheral nervous systems with an emphasis on their rol in fear and neurological diseases.
Wertz, Phil, PhD, AB*	Professor	Dows Institute-Research,Oral Pathology, Radiology, & Medicine	Mentor	The structures, functions, and metabolism of the lipids of skin and oral epithelium. He has examined the mechanisms by which lipids contribute to the barrier function of skin and oral mucosa, and the relationship of skin and oral mucosa barrier function to transcutaneous delivery of medication.

*Indicates program faculty in the current T32 award