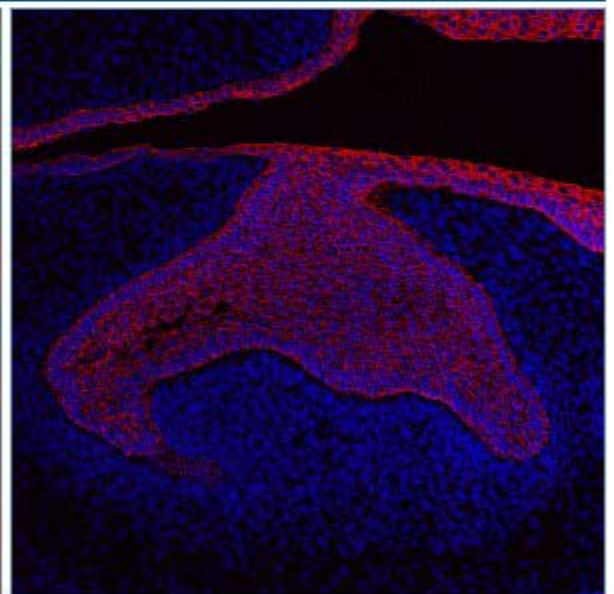
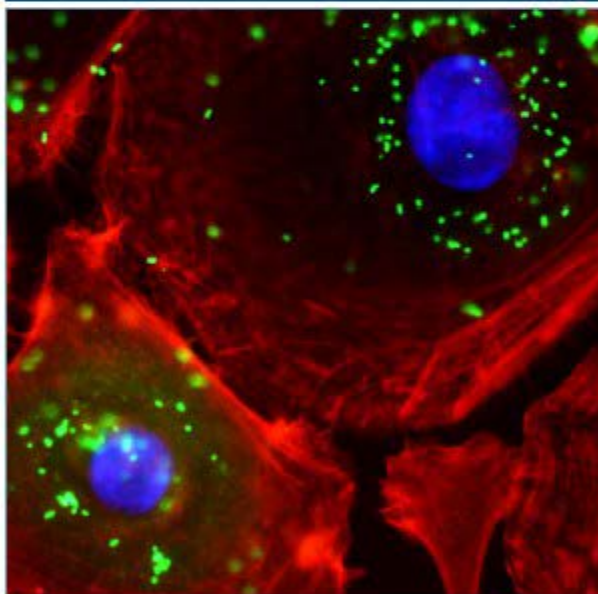


TCOHR

Training in Craniofacial and
Oral Health Research



JAMES B. EDWARDS
COLLEGE OF DENTAL MEDICINE



Changing What's Possible

TCOHR | Training in Craniofacial and Oral Health Research

The overarching objective of T-COHR is to foster the development of clinician scientists and scientists focused on oral, dental and craniofacial research. T-COHR provides strong curriculum and thematic research experiences in an integrative framework that emphasizes mentoring, scientific advancement, academic career development, grantsmanship and productivity.

PRE-DOCTORAL TRAINING

DENTAL SCIENTIST TRAINING PROGRAM (DSTP)

Program Directors: Hai Yao, PhD (yaoh@musc.edu) and Michael J. Kern, PhD (kernmj@musc.edu)

The dual degree (DMD/PhD) MUSC Dental Scientist Training Program (DSTP) begins with 1 year of dental school, followed by approximately 4 years of research training, and then the final 3 years of the dental school curriculum. This paradigm helps students concentrate on their research and/or clinical work for better retention and offers a more satisfactory blend of academic and patient experiences.

PhD IN BIOMEDICAL SCIENCES

Program Director: Caroline Westwater, PhD (westwatc@musc.edu)

The Oral Health Sciences track within the College of Graduate Studies Molecular and Cellular Biology and Pathobiology (MCBP) Program is a diverse and multidisciplinary program created to foster the development of graduate students interested in oral health-related sciences. The goal of this program is to train outstanding students to become the next generation of leaders in oral health-related research. Through a multidisciplinary approach, students will obtain a thorough understanding of the expanding research needs in the oral health field. The program offers an interactive research experience in conjunction with a foundation for advancing basic, clinical, and translational research.

PhD IN BIOENGINEERING

Program Director: Hai Yao, PhD (yaoh@musc.edu)

The Clemson University-MUSC Bioengineering Program allows bioengineering students at Clemson University to take classes and conduct their graduate research at MUSC, and enables MUSC students to access Clemson's nationally-recognized bioengineering resources. This partnership is an exciting and productive program that bridges the physical and life sciences to provide comprehensive translational research and educational opportunities for Clemson bioengineering students and faculty, and expands research and graduate degree opportunities for MUSC students and clinicians.

POSTDOCTORAL FELLOWSHIP

Program Directors: Hai Yao, PhD (yaoh@musc.edu) and Michael J. Kern, PhD (kernmj@musc.edu)

Our postdoctoral training is focused on dentist-scientists and non-clinical scientists seeking advanced training in oral health-related topics. The program continues to emphasize basic and translational laboratory investigations in an integrative framework that emphasizes mentoring, scientific advancement, academic career development, grantsmanship, productivity and independent research pathways. Each postdoctoral trainee creates an individual development plan (IDP) to map out a path to research independence during their postdoctoral training. Some of the activities for postdoctoral trainees include participation in journal clubs, monthly COHR enrichment meetings, seminar series, and clinical and basic science courses.

T-COHR is an integral part of the MUSC Center for Oral Health Research (COHR) in the James B. Edwards College of Dental Medicine. The program engages faculty at all career levels and trainees from other disciplines throughout MUSC including the Colleges of Medicine, Graduate Studies, Nursing and Dental Medicine, the Department of Bioengineering at Clemson University, the South Carolina College of Pharmacy, and the Hollings Cancer Center. The program includes a T32 Training Grant (T32DE017551) to support DSTP, PhD in Biomedical Sciences or Bioengineering students, and Postdoctoral fellows. Candidates must be US citizens or permanent residents.

SUMMER RESEARCH EXPERIENCES

SUMMER UNDERGRADUATE RESEARCH PROGRAM (SURP)

Program Director: Caroline Westwater, PhD (westwatc@musc.edu)

Provides a short-term (10-week) research training experience for outstanding undergraduate students. The students will work closely with faculty members on cutting edge biomedical research projects in the area of oral and craniofacial health and disease. Participants will be taught important research skills and techniques in a research laboratory setting. In addition to a research project, students will attend lectures on topics of importance to the craniofacial and oral health-related fields and have the opportunity to participate in clinical shadowing experiences.

SUMMER HEALTH PROFESSIONS (SHP)

Program Director: Caroline Westwater, PhD (westwatc@musc.edu)

This 9-week program introduces students in the health professions to biomedical research by allowing them to work during the summer in a research environment under the guidance of an experienced investigator. Students in MUSC's Colleges of Medicine, Nursing, Dental Medicine, Pharmacy, Health Professions and other Medical or Dental Schools throughout the United States, who are enrolled in a professional graduate program (e.g. MD, PharmD, DMD) are eligible to apply. Students must have a GPA of 3.0 or greater.

RESEARCH FOCI

- Molecular and Cellular Biology of Oral Infections including Periodontal Diseases
- Head and Neck Cancer and Oral Neoplastic Development/Progression
- Bioengineering/Biomechanics of Oral Facial Complex and Craniofacial Regeneration
- Clinical and Bio-behavioral Factors Related to Oral and Systemic Health
- Growth and Development of the Oral and Craniofacial Complex
- Bone Biology and Osteoimmunology

TRAINING PROGRAM ACTIVITIES

- Annual College of Dental Medicine Scholars Day
- Oral Health Sciences Seminar Series
- Oral Health Sciences Journal Club
- Center for Oral Health Research (COHR) Enrichment Meetings
- Quarterly Lunch-N-Learn Seminars Focused on Career Development
- Specialized Didactic Instruction in Oral Health topics
- National and International Oral Health-Related Scientific Conferences
- MUSC College of Dental Medicine Student Research Group

CONTACT:

Hai Yao, PhD (*Director*) yaoh@musc.edu and Michael Kern, PhD (*Co-Director*) kemmj@musc.edu

For additional information, please visit our website: <http://academicdepartments.musc.edu/tcohr/index.htm>

TRAINING IN CRANIOFACIAL AND ORAL HEALTH RESEARCH (T-COHR) RESEARCH FACULTY

NAME	EMAIL	RESEARCH INTERESTS
Alexander V. Alekseyenko, PhD	alekseye@musc.edu	Bioinformatics, human microbiome, multivariate analysis
Lauren E. Ball, PhD	ballle@musc.edu	Post-translational modification in diabetes and periodontal diseases
Amy D. Bradshaw, PhD	bradshad@musc.edu	Non-collagenous proteins in periodontal ligament homeostasis
Jeremy Gilbert, PhD	gilberje@musc.edu	Biomaterials, metallic implants, and metal corrosion/degradation
Dieter Haemmerick, PhD	haemmer@musc.edu	Targeted chemotherapy delivery for oral cancer
William Hill, PhD	hillwi@musc.edu	Stem cells and bone biology, osteoporosis and aging, miRNA, CXCL12
Philip H. Howe, PhD	howep@musc.edu	Role of TGF and Wnt Signaling pathways in mediating tumorigenesis
Yan Huang, MD PhD	huangyan@musc.edu	Diabetes and periodontal disease
Andrew G. Jakymiw, PhD	jakymiw@musc.edu	RNA silencing and oral cancer; developing peptide carriers for siRNA
Christine Kern PhD	kernc@musc.edu	Extracellular matrix remodeling in TMJ development and degeneration
Michael J. Kern, PhD	kernmj@musc.edu	Craniofacial development, transcription, and protein interactions
Antonios Kourtidis, PhD	kourtidi@musc.edu	Epithelial biology, miRNA regulation, oral cancer
Amanda LaRue, PhD	laruerc@musc.edu	Stem cell biology, osteobiology and fibrosis
Meenal Mehrotra, MD PhD	mehrotra@musc.edu	Mechanisms of bone regeneration using stem cells
Shikhar Mehrotra, PhD	mehortr@musc.edu	T cell metabolism and immunotherapy, Cell transplantation, biomaterials, and tissue engineering
Ying Mei, PhD	mei@musc.edu	Biomaterials, cell differentiation, tissue regeneration
Robin Muise-Helmericks, PhD	musehelm@musc.edu	Mitochondrial influence on tissue repair, angiogenesis, and cancer
Chad Novince, DDS PhD	novincec@musc.edu	Commensal microbiota impact on immunity and skeletal metabolism
Besim Ogretmen, PhD	ogretmen@musc.edu	Sphingolipid metabolism and signaling in regulation of apoptosis and anti-cancer therapeutics in oral cancers
Richard O'Neil, PhD	oneilr@musc.edu	Immunotherapy, T cell modulation, oral cancer
Visu Palanisamy, PhD	visu@musc.edu	Post-transcriptional gene regulation by RNA-binding proteins and non-coding RNAs in oral cancer and oral mucositis
Subramanya Pandruvada, PhD	pandruv@musc.edu	Osteoimmunology, Cancer cell signaling
Paula Traktman, PhD	traktman@musc.edu	VRK1 protein kinase and cancer, BANF1 protein and progeria
Chentha Vasu, PhD	vasu@musc.edu	Immune tolerance, autoimmunity, microbiome and cancer immunology
Caroline Westwater, PhD	westwac@musc.edu	Candida pathogenesis, gnotobiotic animal models, oral microbiology
Patrick M. Woster, PhD	woster@musc.edu	Synthesis and evaluation of rationally designed small-molecule therapeutic agents
Hai Yao, PhD	yaoh@musc.edu	TMJ biomechanics and mechanobiology of cartilaginous tissues
Tong Ye, PhD	yetong@musc.edu	Optical imaging, cartilage, cell-ECM interactions
Ozlem Yilmaz, DDS PhD	yilmaz@musc.edu	Host-pathogen interaction in the oral cavity, periodontal diseases pathogenesis, and oral infection induced cancers
Michael Yost, PhD	yostm@musc.edu	Immunoengineering, biofabrication, and biomaterials
Hong Yu, MD	yuho@musc.edu	Sphingolipids in the pathogenesis of periodontitis

For additional information, please visit our website: <http://academicdepartments.musc.edu/tcohr/index.htm>