Description of Research:
The Amelio Lab applies an interdisciplinary approach to understand the mechanisms underlying the development of oral, head, and neck cancers. To this end, we are investigating the signaling pathways that drive mucoepidermoid carcinoma of the salivary gland and oral squamous cell carcinoma using a combination of bioinformatics, animal models, and molecular genetic analyses.

Keywords:
Biochemistry, Carcinogenesis, Cell biology, Cell culture, Gene expression, Genetics, Molecular biology, Neoplasia, Oral biology, Salivary glands, Signal Transduction, Biomarkers, Bioinformatics

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, postdoc
Name: Roland R Arnold  
Department: Diagnostic Sciences/Dental Research  
Title: Professor  
Telephone: (919) 537-3165  
Mailing Address:  
UNC School of Dentistry  
CB #7457  
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Lab: 3030 First Dental  
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ReachNC Link: 

Description of Research:
Our interests include host-pathogen interactions at mucosal surfaces including the oral cavity and the respiratory and gastrointestinal tracts. Our studies examine both innate and acquired soluble host defense factors that are delivered to mucosal surfaces by exocrine secretions. We are also interested in the strategies of both pathogens and indigenous (normal flora) microbes for evading these host defense factors. As professional phagocytic cells such as the polymorphonuclear neutrophilic leukocytes employ similar antimicrobial agents to that found in secretions, we are interested in how these function in the cell. In order to understand the importance of these functions, we are interested in patient populations that have selective dysfunctions in discrete components of either exocrine secretions (e.g. IgA deficiency, cystic fibrosis, Sjogrens, ionic cofactors) or in neutrophils (e.g. chronic granulomatous disease, specific granule deficiency, lactoferrin, defensins, myeloperoxidase, adhesins, elastase). We are interested in specific pathogens associated with periodontal diseases, caries, chronic inflammatory diseases, respiratory pathogens including cystic fibrosis, COPD, lung transplants. These pathogens include among others Streptococcus mutans, Lactobacillus acidophilus, Porphyromonas gingivalis, Fusobacterium nucleatum, Prevotella intermedia, Tannerella forsythia, Aggregatibacter actinomycetemcomitans, Pseudomonas aeruginosa and Burkholderia cepacia. We also have expertise in the evaluation of efficacies of antimicrobials to a variety of target microorganisms.

Keywords:
Antimicrobial agents/inhibitors, Biofilm, Caries organisms, Cell biology, Host- microbial interactions, Infection, Inflammation, Mucosal diseases, Periodontal organisms, Saliva, mucosal immunity, secretory immunity, ecology, innate immunity

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Description of Research:
As an Associate Professor in the UNC Department of Periodontology at the UNC School of Dentistry, my research interests are on translational studies using mammalian models and cell lines as well as clinical studies to investigate the cellular and molecular basis of periodontal pathogenesis and the implications and impact of this infectious inflammatory disease on systemic health. These topics have been the focus of my translational research interests and my mentoring. I have developed new and modified existing infection models to be applied in mice on pre-clinical investigations aiming to develop new antimicrobials, as well as new pharmaceuticals. I combine my expertise on basic science: structural morphology and cell biology, with recent discoveries that we pioneered on epigenetics, transcriptome analysis in periodontal health and diseases, and chronic periodontitis genome-wide association studies to investigate the effects of the host microbial interaction on oral diseases and their effects on systemic health. In our laboratory, we have investigated the role of oral bacteria on fetal growth restriction and epigenetic modifications of genes associated with growth and metabolism in the offspring of pregnant mice that pioneered our understanding of epigenetics as a contributing factor to development of periodontal disease. This discovery is now leading to further clinical investigations on the association between bacterial infection and altered methylation patterns of host DNA in periodontal diseases.

Keywords:
Periodontal disease, epigenetics, oral-systemic diseases

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty members
Name: Kimon Divaris

Department: Pediatric Dentistry
Title: Associate Professor
Telephone: (919) 537-3556

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Lab Office: 4501B Koury Oral Health Sciences Bldg.
Lab: 4411B Koury Oral Health Sciences Bldg.
Email: kimon_divaris@unc.edu
ReachNC Link: https://uncch.pure.elsevier.com/en/persons/kimon-divaris

Keywords: Genomics, Dental Caries, Microbiome, Periodontal Disease, Behavioral sciences, Epidemiology, Public Health, Health services research, Pediatric Dentistry.

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, postdoc.
Name: Ibrahim S Duqum
Department: Prosthodontics
Title: Clinical Assistant Professor
Telephone: (919) 537-3964
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Description of Research:
Keywords: CAD/CAM, Ceramics, Clinical trials, Dental materials, Education research, Esthetics, Implants, Impression materials, Prostheses, Technology
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student and junior faculty member
Name: Greg K Essick
Department: Prosthodontics
Title: Professor
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Office: 5417H Koury Oral Health Sciences Bldg.
Lab: 5417H Koury Oral Health Sciences Bldg.
Email: essickg@unc.edu
Lab URL: http://www.dentistry.unc.edu/ce/ahec/biosketch.cfm?employeeid=1947
ReachNC Link:

Description of Research:
Normal orofacial sensation, alterations in orofacial sensation after trigeminal nerve injury, mechanisms underlying chronic pain, the association between poor sleep and chronic pain, obstructive sleep apnea, novel therapies to treat obstructive sleep apnea

Keywords: Assessment, Central nervous system/peripheral nervous system, Clinical trials, Human, Pain, Physiology, Nerve injury; sleep apnea

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Eric T. Everett
Department: Pediatric Dentistry
Title: Professor, Associate Dean for Research
Telephone: (919) 537-3182
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Email: eric_everett@unc.edu
Lab URL: http://genomics.unc.edu/faculty/webpages/everett.html
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Description of Research:
Genetic basis for acquired and congenital defect of the oral/craniofacial/dental complex

Keywords: Ameloblasts, Anatomy, Animal Models, Biochemistry, Bone, Cell biology, Enamel, Fluorosis, Gene expression, Genetics

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Description of Research: (too long)

Microbial analysis of endodontic infections: Novel molecular techniques offer high specificity and sensitivity in detecting cultivable as well as not-yet-cultured endodontic pathogens. Over the past few years we have sought to characterize the microbial irritants in primary and persistent endodontic infections using contemporary molecular techniques. We are also interested in whether host factors such as chronic systemic disease play a role in controlling the microbial composition, and thus in modulating the presentation and healing of endodontic infections. We are also interested in whether endodontic infections may contribute to the pathogenesis of certain systemic chronic conditions in which microbial factors participate in the pathogenesis. Finally, we are investigating how more effective antimicrobial therapy may enhance and accelerate healing following endodontic therapy. Endodontic treatment outcomes: With the advent of newer technologies in endodontic treatment, there is a great need to undertake randomized clinical trials to determine the most effective clinical protocols. Central to these studies are clinical information systems that allow the tracking of data on patient care, and the use of novel diagnostic and imaging systems. The objective determination of healing of periapical lesions is critical in these studies. Thus the use of novel imaging technologies, and accurate documentation of host and microbial factors at the time of treatment are important parameters in evaluating treatment outcome. Furthermore, the effects of chronic systemic disease such as diabetes mellitus on the treatment outcome is essential in understand the various factors of clinical importance both in diabetics and non-diabetics. Dental Pulp Regeneration: Over the past decade, there has been a growing interest in whether regenerative procedures could promote vital tissue growth with the root canal of immature teeth that developed endodontic infections due to trauma, caries or congenital abnormalities. Our group is interested in identifying optimal antimicrobial methods to disinfect the pulp space without interfering with the viability of stem cells of the apical papilla, that are thought to pioneer vital tissue regrowth into the pulp. We are also interested in conducting clinical trials to show the both vital pulp therapy and pulp revascularization/regeneration in immature teeth.

Keywords: Pulpal disease, pulp, microbiology, Host-microbial interactions, Biofilm, bacterial, diabetes,
outcome (health) pain.

**Willingness and interest to mentor:** Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
**Name:** Sylvia A Frazier-Bowers  
**Department:** Orthodontics  
**Title:** Associate Professor  
**Telephone:** (919) 537-3758  
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**Email:** sylvia_frazier@unc.edu  
**ReachNC Link:**  

**Description of Research:**
As a clinician-scientist, it is also my goal to bridge the gap between the clinical profession and scientific advances to ensure that this is the foundation that our future generations of dentists receive. My current efforts also broadly focus on gene discovery and phenotype dissection of dentofacial variation specifically 1) tooth development 2) tooth eruption and 3) tooth agenesis using multiple translational methods.

**Keywords:** Human genetics, malocclusion, craniofacial, eruption studies, tooth agenesis

**Willingness and interest to mentor:**
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Asma A Khan

Department: Endodontics

Title: Associate Professor

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ReachNC Link:

Description of Research:
Pain mechanisms and management. Role of microRNA in inflammation and pain. Regenerative Endodontics; Development of new diagnostics

Willingness and interest to mentor:
Undergraduate, DDS and Grad students
Name: Ching-Chang Ko

Department: Orthodontics
Title: Professor, Department Chair
Telephone: (919) 537-3763
Mailing Address:
UNC School of Dentistry
385S. Columbia St. CB #7450
Chapel Hill, NC 27599-7450
Lab: 3617 Koury Oral Health Sciences Bldg.
Email: ching-chang_ko@unc.edu
ReachNC Link:

Description of Research:
Biomechanics/biomaterials related bone remodeling and regeneration, dopamine-associated bone remodeling, synthesis of polydopamine bioinspired bone substitute, orthodontic biomechanics, orthodontic biomaterials, finite element analysis of dental biomechanics

Keywords: Bone, Orthodontics, Biomechanics, Biomaterials, Neural-osseous biology, Bone Tissue Engineering

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS student, postdoc and/or junior faculty member
Name: Lorne D. Koroluk
Departments: Pediatrics, Orthodontics
Title: Associate Professor
Telephone: (919) 537-3784
Mailing Address:
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385 S Columbia St CB #7450
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Office: 237 Brauer Hall
Email: lorne_koroluk@unc.edu

ReachNC Link:

Keywords: Malocclusion, growth and development, teaching, ulcerations; fungal; cancer; facial; dermatologic
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, postdoc and/or junior faculty member
**Name:** Mark J Kutcher  

**Department:** Dental Ecology  

**Title:** Associate Professor  

**Telephone:** (919) 537-3140  

**Mailing Address:**  
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CB #7450  
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**Office:** 5405C Koury Oral Health Sciences  

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**ReachNC Link:**  

**Description of Research:**  
Diagnosis and management of oral diseases such as viral, fungal, ulcerations etc.; facial cancer; dental management of medically compromised patients;

**Keywords:** Antimicrobials, Clinical trials, Halitosis, Mucosal diseases, Neoplasia, Oral mucosa, Pathology, Teaching, Viruses, ulcerations; fungal; cancer; facial; dermatologic

**Willingness and interest to mentor:**  
Graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Lewis N. Lampiris
Department: Dental Ecology
Title: Clinical Associate Professor, DISC director
Telephone: (919) 537-3580
Mailing Address:
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ReachNC Link:
Description of Research:
Health Services, Health Disparities
Keywords: Access to Care, Health Policies, Public Health Dentistry
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student
Name: Jessica Y Lee

Department: Pediatric Dentistry
Title: Distinguished Professor, Department Chair
Telephone: (919) 537-3955

Mailing Address:
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Chapel Hill, NC 27599-7450

Office: 231 Brauer Hall
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Email: leej@unc.edu
ReachNC Link:

Description of Research:
Health Services Research, Epidemiology, Health Disparities, Healthy Literacy

Keywords: Access to Care, Behavioral science, Delivery systems, Health Policies research, Public Health Dentistry

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Description of Research:
My research interest is on the pathogenesis of periodontal disease with a focus on the host response. This response is greatly influenced by both genetic factors and different microorganisms. Specifically, I have focused on the role of pathogen recognition receptors and sensors (TLR, NLR, IFI16, AIM2) and novel pathobionts (E. saphenum, F. alocis, Synergistetes) in the host response.

Keywords: Host response, periodontitis, pathobionts

Willingness and interest to mentor:
Undergraduate/college student, Graduate student, Postdoc.
Name: Sally M Mauriello

**Department:** Dental Ecology  
**Title:** Professor  
**Telephone:** (919) 537-3474  
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385 South Columbia Street CB #7455  
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**Office:** 5504 Koury Oral Health Science Bldg.  
**Email:** sally_mauriello@unc.edu  
**ReachNC Link:**  

**Description of Research:**
My research interests are in the areas of: dental radiology, geriatric dentistry, examiner calibration, root caries, dental hygiene.

**Keywords:** Access to Care, Aging, Cardiovascular disease, Caries, Clinical trials, Elderly, Gerontology, Gingivitis, Periodontal disease, Preventive dentistry, Clinical examiner calibration, Clinical examiner calibration

**Willingness and interest to mentor:**
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Patricia (Pat) Miguez

**Department:** Operative Dentistry/Dental Research
**Title:** Assistant Professor
**Telephone:** (919) 537-3324

**Mailing Address:**
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385 South Columbia Street CB #7455  
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**Office:** 4606 Koury Oral Health Sciences Bldg.  
**Lab:** 4605-4611 Koury Oral Health Sciences Bldg.

**Email:** patricia_miguez@unc.edu
**Lab URL:** http://patmiguez.web.unc.edu

**ReachNC Link:**

**Description of Research:**
Currently there is a gap of knowledge in that we have not been able to identify a reliable form of preventing dentin and bone loss in various physiological and pathological scenarios. My long-term goals are to unveil novel mechanisms of protecting such mineralized tissues, characterize new effective agents and ultimately bring these agents to clinical practice. My research studies have concentrated in understanding collagen biochemistry and tissue mechanical properties link; promotion of mineralization (re-mineralization) in dentin and bone and, more recently, focused in the role of the proteoglycan biglycan in promotion of craniofacial bone regeneration through modulation of bone morphogenetic protein function. Other biological and translational experiments are in development to promote dentin formation. Another area of interest is on integrative medicine where I seek to understand how natural compounds (phytochemicals) act on cell behavior, extracellular matrix quality and mineralization as well as their effect on oral diseases development such as caries and periodontal disease.

**Keywords:** Animal, collagen, regeneration, biomaterials, bone, dentin, extracellular matrix molecules, mineralization, tissue engineering, osteoblasts/osteoclasts, phytochemicals, signal transduction, molecular
description of research:
The dental needs of children with special health care needs. The use of sedation in children in order to provide dental care.

Keywords: Access to Care, Anxiety, Behavioral science, Children, Cleft lip-palate, Education research, Infants

Willingness and interest to mentor:
Graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Antonio J. Moretti

Department: Periodontology

Title: Clinical Associate Professor

Telephone: (919) 537-3727

Mailing Address:
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Description of Research:
Clinical Research

Willingness and interest to mentor:
Undergraduate/College student, graduate student, undergraduate DDS or DH student and/or junior faculty member
Name: Tung T Nguyen

Department: Orthodontics
Title: Assistant Professor
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Email: tung_nguyen@unc.edu
Lab URL: https://www.dentistry.unc.edu/research/orofacial_imaging_lab/
ReachNC Link:

Description of Research:
My research interests include growth modification of Class III malocclusions using skeletal anchorage. The ultimate goal of my research is to develop and refine a protocol that will help reduce the need for orthognathic surgery in this population of patients. We recently expanded our protocol to include craniofacial cleft and syndromic patients and started a multi-center study. My lab is involved in the development of 3-D imaging software and methodology to help assess growth and treatment changes. Lastly, I’m interested in CAD/CAM and digital technology to increase the effectiveness and efficiency of orthodontic treatment.

Keywords: Adolescence, CAD/CAM, Cephalometric analysis, Cleft lip-palate, Digital image analysis, Growth & development, Orthodontics, Technology
Name: Steven Offenbacher

Department: Periodontology

Titles: WR Kenan Distinguished Professor, Department Chair.

Telephone: (919) 537-3205

Mailing Address:
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Office: 3501F Koury Oral Health Science Bldg.
Lab: 3417 Koury Oral Health Science Bldg.

Email: steve_offenbacher@unc.edu

Lab URL: https://www.dentistry.unc.edu/research/corefacilities/cytokine.cfm

ReachNC Link:

Description of Research:
I have been a clinical scientist engaged in translational research investigating periodontal disease and the role of oral infection in systemic disease for 30 years. Our laboratory program emphasizes host-pathogen interaction and the regulation of inflammation as an effector mechanism that mediates not only periodontal destruction, but systemic sequelae of oral infection. More recently we have focused on the whole transcriptome changes associated with periodontal disease and the role of epigenetics in this process. In addition we have published
GWAS of periodontal phenotypes using our Dental ARIC population. Clinical translational research has been the fundamental focus of my career. I currently have 15 active, funded clinical research protocols and have a total of 41 completed protocols during my time here at UNC which include Phase 1-4 FDA investigations and population-based studies. We have broad experience with murine models of oral infection. My interests focus on biofilm infections and inflammation at mucosal surfaces. This has been the fundamental research component to my translational research interests and the focus point of my mentoring. I have trained PhD, Masters and Translational Research students in Dentistry, the School of Public Health and Medicine.

**Keywords:** Periodontal disease, oral immunology, oral-systemic disease, pregnancy complications, cardiovascular disease

**Willingness and interest to mentor:**
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member

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**Name:** Lauren Patton  
**Department:** Dental Ecology  
**Title:** Professor, Department Steven Chair  
**Telephone:** (919) 537-3582  
**Mailing Address:**  
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385 S. Columbia St. CB #7450  
Chapel Hill, NC 27599-7450  
**Office:** 467A Brauer Hall  
**Email:** lauren_patton@unc.edu  
**ReachNC Link:**  

**Description of Research:**  
Clinical trials for mucosal disease treatment or prevention/Oral cancer prevention and early diagnosis/Management of patients with systemic disease/Oral and systemic disease interaction/HIV infection and AIDS patient dental care, access to care, oral lesions/Health services research, outcomes research, and public health dentistry topics/Systematic reviews to assess evidence base for dental treatment processes

**Keywords:** Clinical trials, Diagnosis, Epidemiology, HIV infection, Health Policies research, Mucosal diseases,
Willingness and interest to mentor:
graduate student, undergraduate DDS or DH student, and junior faculty member

Name: Ceib L Phillips
Department: Orthodontics
Title: Professor, Associate Dean for Graduate/Advance Education
Telephone: (919) 537-3373
Mailing Address: 
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Lab(s): 2090 and 2080 First Dental Bldg.
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ReachNC Link: 

Description of Research:
Clinical Trial Methodology/Preparation for and Recovery from Surgery–Patient Centered Outcomes/Access to Care–Patient/Caregiver Centered
Keywords: Access to Care, Assessment, Cleft lip-palate, Clinical trials, Effectiveness, Methodology, Orthodontics, Outcome (Health), Quality of life, Surgery
Willingness and interest to mentor:
Graduate student, undergraduate DDS or DH student, and junior faculty member

Name: Luiz A Pimenta
Department: Dental Ecology
Title: Professor, Assistant Dean for Global Initiatives
Telephone: (919) 537-3725
Mailing Address:
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Chapel Hill, NC 27599-7450
Office: 5417 Koury Oral Health science Bldg.
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ReachNC Link:

Description of Research:
Clinical research in cleft lip/palate and craniofacial anomalies. Also, clinical and lab research in cariology
Keywords: Assessment, Biofilm, Bone repair, Caries, Cariology, Cleft lip-palate, Clinical Trials, Esthetics, Fluoride, Prostheses
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member.

Name: Rocio B Quinonez
Department: Pediatric Dentistry
Title: Associate Professor
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Lab: 1038 Tarson Hall
Email: rocio_quinonez@unc.edu
ReachNC Link:

Description of Research:
Prenatal and early childhood oral health; Interface between medicine and dentistry, Interprofessional education, Access to care.
Keywords: Prenatal, infant oral health, Interprofessional education, Clinical trials
Willingness and interest to mentor:
Undergrad DDS, DH, MD student, graduate students, junior faculty members.
Name: Andre Ritter

Department: Operative Dentistry
Title: Hinman Distinguished Professor, Executive Associate Dean, Chief Operating Officer
Telephone: (919) 843-6356
Mailing Address:
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385 South Columbia Street CB
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Office: 1611 Koury Oral Health Science Bldg.

Email: rittera@unc.edu
ReachNC Link:

Description of Research:
Caries risk assessment and management / Dental materials and adhesion / Esthetic Dentistry

Keywords: Adhesion, Biomaterials, Caries, Composites, Esthetics

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Michael Roberts

Department: Pediatric Dentistry

Title: Henson Distinguished Professor and Associate Chair

Telephone: (919) 537-3781

Mailing Address:
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Office: 230 Brauer Hall

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ReachNC Link:

Description of Research:

Keywords: Access to Care, Caries, Eating disorders, Basal metabolism index (BMI)

Willingness and interest to mentor:
Graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Anne E Sanders

Department: Dental Ecology
Title: Associate Professor
Telephone: (919) 537-3275

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Office: 4502 Koury Oral Health Sciences Bldg.
Email: anne_sanders@unc.edu
ReachNC Link:

Description of Research:
Oral epidemiology, social epidemiology, sleep-disordered breathing, pain; periodontal disease, NHANES

Keywords: Population, causality, survey methods, analytic methods

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Gary D Slade

Department: Dental Ecology
Title: Professor
Telephone: (919) 537-3273

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Dental Ecology CB #7450
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Office: 4501E Koury Oral Health Sciences Bldg.
Email: gary_slade@unc.edu
ReachNC Link:

Description of Research:
Oral epidemiology; Orofacial pain; Oral health related quality of life; Population prevention of oral disease

Keywords: Epidemiology, Pain, Public Health Dentistry, Quality of life

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Margot Ballou Stein

Department: Dental Ecology
Title: Clinical Associate Professor
Telephone: (919) 537-3510

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ReachNC Link:

Description of Research:

Keywords: Access to Care, Anxiety, Assessment, Behavioral science, Children, Cleft lip-palate, Learning, Psychology, Quality of life, Teaching, Ethics, professionalism, Ethics, professionalism
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member

Name: Taiseer Sulaiman
Department: Operative Dentistry
Title: Assistant Professor
Telephone: (919) 537-5251
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385 South Columbia Street CB #7455
Chapel Hill, NC 27599-7455
Office: 5405H Koury Oral Health Sciences Bldg.
Lab: 5617D Koury Oral Health Sciences Bldg.
Email: sulaiman@unc.edu
Lab URL:
Description of Research:
Our area of research focuses on multidisciplinary translational research, with in-vitro investigation of biomaterials that can have the maximum clinical relevance. Developing novel biomaterials in addition to testings’ that can help provide a blue print for further clinical investigations.
Keywords: Education research, caries, prevention, polymerization, polymers, tooth wear, enamel, dentin, lasers, biomechanics, implantology
Name: Peter Z Tawil

Department: Endodontics
Title: Interim Graduate Program Director / Assistant Professor
Telephone: (919) 537-3376
Mailing Address:
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Office: 1150 First Dental Bldg.
Email: peter_tawil@unc.edu

ReachNC Link: https://uncch.pure.elsevier.com/en/persons/peter-z-tawil

Description of Research:
Endodontic and Endodontic Surgery

Keywords: Periapical Microsurgery, Dental Defects, Endodontic Instruments, Endodontic Materials, Outcome, Pulpotomies

Willingness and interest to mentor:
Graduate student, postdoc and/or junior faculty member
**Name:** Inna Tchivileva  
**Department:** Endodontics Dental Research  
**Title:** Research Assistant Professor  
**Telephone:** (919) 537-3291  
**Mailing Address:**  
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385 S. Columbia Street. CB #7455  
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**Office:** 5417J Koury Oral Health Sciences Bldg.  
**Lab:** 1038 Tarrson Hall  
**Email:** chivilei@unc.edu  
**ReachNC Link:**  

**Description of Research:**  
My research objectives are to identify genetic variants influencing pain sensitivity, the likelihood of developing chronic pain diseases, and the response to pain therapy. I am interested in developing and conducting pharmacogenetics clinical trials translating basic research findings into clinical practice. Recently, my efforts have concentrated on studying the effect of catecholamine-O-methyltransferase gene polymorphism on response to beta-adrenergic blocker therapy in patients with temporomandibular joint disorder.  
**Keywords:** Central nervous system/peripheral nervous system, Gene expression, Genetics, Human, Magnetic Resonance Imaging, Neuroscience, Outcome (Health), Pain, Pharmacology, Psychology Clinical Trials, Clinical trials  
**Willingness and interest to mentor:**  
Undergraduate/college student, graduate student, undergraduate DDS or DH student
Name: Rick Walter  
Department: Operative Dentistry  
Title: Clinical Associate Professor  
Telephone: (919) 537-3596  
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Office: 463 Brauer Hall  
Lab: 4611 Koury Oral Health Science Bldg.  
Email: walterr@unc.edu  
ReachNC Link:  

Description of Research:  
Development and in vitro and clinical testing of resin-based materials used in restorative dentistry  

Keywords: Clinical trials, composites, dental materials, dentin, dentin bonding agents, erosion

Willingness and interest to mentor:  
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: Jennifer Webster-Cyriaque

Department: Dental Ecology/ Microbiology and Immunology

Title: Professor

Telephone: (919) 537-3492

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Office: 4506 Koury Oral Health Sciences Bldg.
Lab: 4405 Koury Oral Health Sciences Bldg.
Email: jwebster@email.unc.edu
ReachNC Link: https://uncch.pure.elsevier.com/en/persons/jennifer-webster-cyriaqu

Description of Research:
Viral oral infections in Immunosuppression and Cancer- VOIICe Viral Oral Infections in Immunesuppression and Cancer (VOIICe)Research Discipline: Microbiology viral pathogenesis/ Clinical translational oral medicine.

The laboratory is seeking to understand the critical molecular interactions between the virus and the host that govern the development of oral lesions and malignancies and to translate these findings to the many immune compromised patients seen in practice that are burdened by oral disease.

In addition to clinical trials based work designed to translate laboratory findings, there are 3 major areas of study in the laboratory: Mechanisms of Viral Pathogenesis/ Reactivation in the Oral cavity and other compartments; HPV in oral disease and cancer; and Clinical TrialsSPNS: UNC HIV Oral Health Demonstration Project
Name: Jane A. Weintraub
Department: Dental Ecology
Title: Alumni Distinguished Professor
Telephone: (919) 537-3240
Mailing Address:
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385 S Columbia Street CB #7455
Chapel Hill, NC 27599-7455
Office: 4508 Koury Oral Health Sciences Bldg.
Lab: 4508 Koury Oral Health Sciences Bldg.
Email: Jane_Weintraub@unc.edu
ReachNC Link:
Description of Research:
Oral epidemiology, health disparities and clinical research focused on prevention and improving oral their role in periodontal health and disease is health with implications for dental practice and health policy.

Keywords:
Access, Caries, Children, Clinical trials, Education, Elderly, Epidemiology, Health Services, Preventive dentistry

Other Keywords: Dental public health, Health Disparities, Populations

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty members
Name: Raymond (Ray) White

Department: Oral & Maxillofacial Surgery

Title: Professor

Telephone: (919) 537-3944

Mailing Address:
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Office: 149 Brauer Hall
Email: ray_white@unc.edu
ReachNC Link: https://uncch.pure.elsevier.com/en/persons/raymond-p-white

Description of Research:
Clinical research topics related to orthognathic surgery, 3rd molar management

Keywords: Biofilm, Clinical trials, Periodontal disease, Quality of life, Surgery

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member
Name: John Timothy Wright

Department: Pediatric Dentistry

Titles: Bawden Distinguished Professor

Telephone: (919) 537-3216

Mailing Address:
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385 S Columbia Street
Pediatric Dentistry CB #7450
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Office: 4410 Koury Oral Health Sciences Bldg.
Lab: 4110 Koury Oral Health Sciences

Email: tim_wright@unc.edu

Lab URL:
https://www.dentistry.unc.edu/secure/resources/directories/detail.cfm?employeeid=1975

ReachNC Link:

Description of Research:
My research interests involve advancing our understanding of the fundamental molecular mechanisms involved in tooth and craniofacial formation and the use of this information in advancing our diagnostic and clinical treatments of hereditary craniofacial defects. My laboratory is also investigating the molecular controls involved in initiating, defining and maintaining odontogenic tumors in humans. These projects are being completed using a variety of human and animal models including the study of human hereditary conditions and transgenic mice. Recent work has been initiated to investigate the human oral...
microbiome and its metabolomics and related to dental caries to identify their potential utility in risk assessment.

**Keywords:** Ameloblasts, Animal, Models, Cariology, Dentin, Diagnosis, Enamel, Fluoride, Genetics, Human

**Willingness and interest to mentor:**
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member

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**Name:** Di Wu

**Department:** Periodontology, Biostatistics, Health Informatics Program

**Titles:** Assistant professor

**Telephone:** (919) 537-3277

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**Office:** 4504 Koury Oral Health Sciences Bldg.
**Lab:** 4507 Koury Oral Health Sciences

**Email:** dwu@unc.edu

**Lab URL:**
http://diwulab.web.unc.edu/

**ReachNC Link:**

**Description of Research:**
Our group develops novel statistical bioinformatics tools and applies them in biomedical research to help understanding the precision medicine for cancer (e.g., breast cancer and lung cancer) subtypes, the disease associated integrative pathways across multiple genomic regulatory levels, and the potential of drug repurposing mechanisms. Our recent focus includes pathway analysis, microbiome data analysis, data integration and EMR. Our application fields include cancer, stem cell, autoimmune disease and oral biology.

**Keywords:** Biostatistics, cancer, oral biology

**Other Keywords:** Bioinformatics, Gene expression, genomics, microbiome, health informatics, data integration, stem cell, autoimmune disease
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member

Name: Mitsuo Yamauchi
Department: Periodontology
Title: Professor
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Lab: 4605 A-E Koury Oral Health Sciences Bldg.
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ReachNC Link:

Description of Research:
Biology and chemistry of extracellular matrix proteins, Biological significance of collagen post-translational modifications in mineralization, tissue stability, aging and cancer metastasis, Role of small leucine-rich proteoglycans in growth factor function and bone tissue engineering
Keywords: Aging, Biochemistry, Bone, Collagen, Dentin, Enzymes, Extracellular matrix molecules, Mineralization, osteoblasts, Tissue engineering, Collagen post-translational modification, osteogenesis
imperfecta, cancer metastasis

**Willingness and interest to mentor:**
Undergraduate/college student, graduate student, undergraduate DDS or DH student, postdoc and/or junior faculty member

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**Name:** David Zajac  
**Department:** Dental Ecology  
**Title:** Professor  
**Telephone:** (919) 537-3525  
**Mailing Address:**  
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CB #7450  
Chapel Hill, NC 27599-7450  
**Office:** 007 Brauer Hall  
**Lab:** 016 Brauer Hall  
**Email:** david_zajac@unc.edu  
**Lab URL:** [http://www.unc.edu/~dzajac](http://www.unc.edu/~dzajac)  

**Description of Research:** As a clinical speech-language pathologist and speech scientist my research focuses on speech production in general and speech associated with craniofacial anomalies in particular. We are currently conducting an NIDCR-sponsored project investigating the emergence of stop consonants and vocabulary words in young children with repaired cleft palate, children with otitis media, and typically-developing children. We also investigate the effects of dental and occlusal anomalies on speech production.  
**Keywords:** Children, Cleft lip-palate, Infants, speech production, speech aerodynamics, speech acoustics, velopharyngeal function
Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty member.

Name: Andrea Ferreira Zandona
Department: Operative Dentistry
Title: Associate Professor
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ReachNC Link:

Description Research:
Caries detection and assessment, caries prevention, caries management, caries risk assessment, decision making in caries management, cariology education

Keywords: Caries, cariology, cariogenicity, education research, enamel, fluoride, microbiology, sealants, saliva, clinical trials, diagnosis, digital image analysis, lasers, learning, plaque, biofilm, preventive dentistry, remineralization, biofilm, Metabolomics, metabolites

Willingness and interest to mentor:
Undergraduate/college student, graduate student, undergraduate DDS or DH student, and junior faculty members.