

Head and Neck
Tumor Program

MUSC
HOLLINGS CANCER CENTER

*Center for Functional Outcomes and
Reconstructive Biotechnology*



Scalp defect before prosthesis



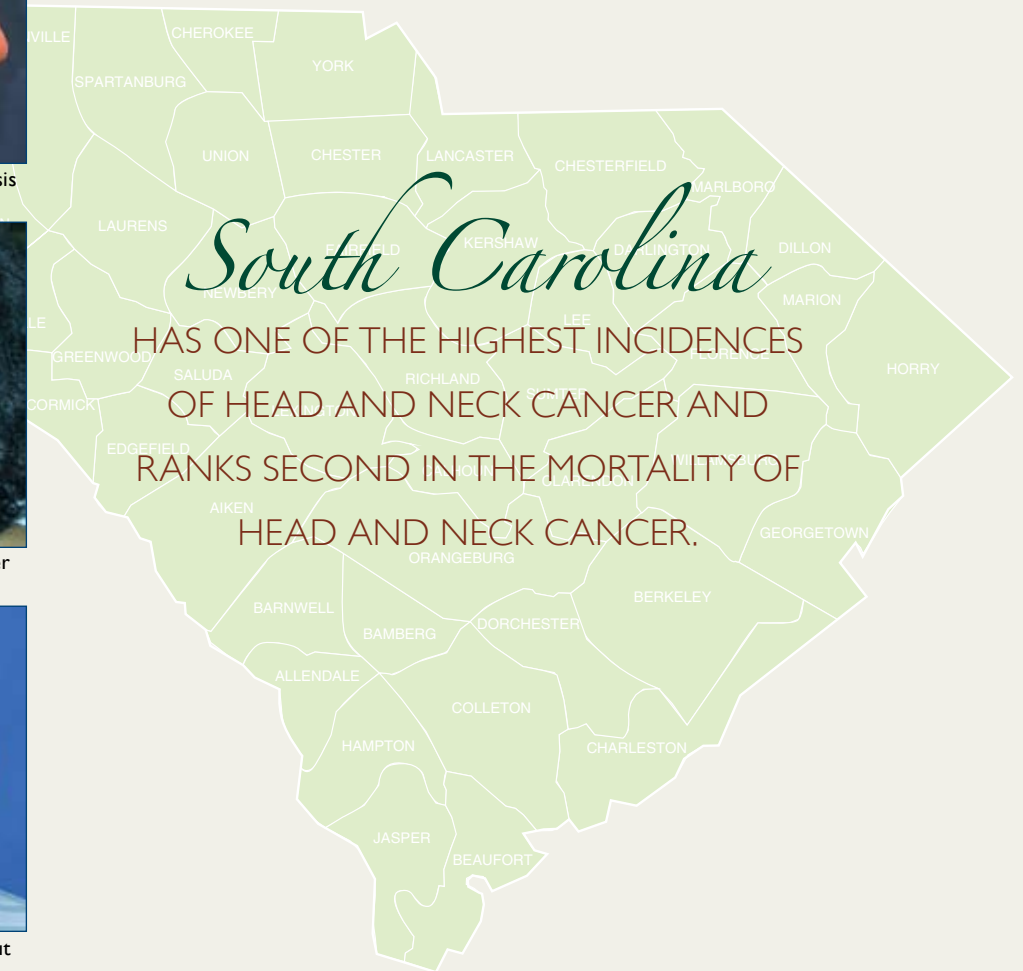
Orbital defect due to cancer

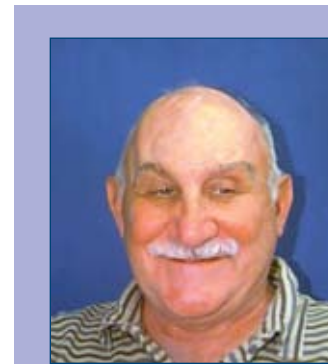


Cancer of lower jaw without prosthesis



Cancer of ear before prosthesis





Scalp defect after prosthesis



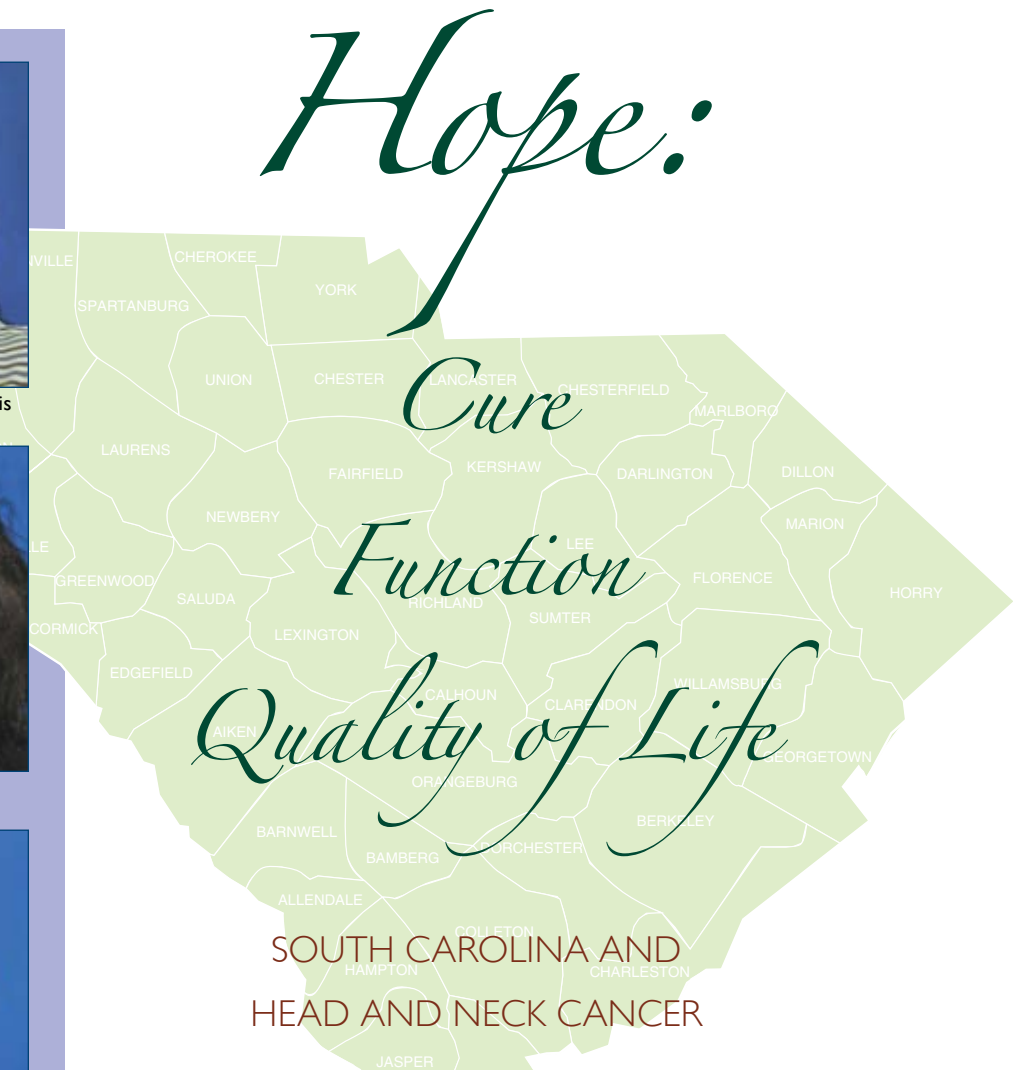
Orbital prosthesis



Cancer of lower jaw with prosthesis



Ear prosthesis



South Carolina has one of the highest incidences of head and neck cancer and ranks second in the mortality of head and neck cancer. Head and neck cancer includes mouth cancer, tongue cancer, throat cancer, and cancers of the voice box. Oral cancer alone will kill 1 person per hour, 24 hours each day. This death rate for oral cancer is higher than that of cervical cancer, Hodgkin's disease, cancer of the brain, liver, testes, kidney, or skin cancer. For those patients that survive surgery, radiation, and/or chemotherapy, their lives are greatly changed by losing the ability to speak, swallow, and chew. Not to mention the physical appearance which can lead many to remove themselves from society altogether.



A Place of Hope:

HOLLINGS CANCER CENTER HEAD AND
NECK TUMOR PROGRAM

The mission of the Head and Neck Tumor Program is to provide the most comprehensive, advanced, and compassionate care to each patient while pursuing future goals of the control of head and neck cancer through research. The Head and Neck Tumor Program in Hollings Cancer Center at the Medical University of South Carolina prides itself on the compassionate, comprehensive, innovative care of each patient and family member. Under the direction of Dr. Terry Day, Director, the MUSC Head and Neck Tumor program is the most comprehensive of its kind in the state. Comprised of representatives from more than 30 disciplines, the multidisciplinary team offers the latest treatment modalities available.

*...the MUSC
Head and Neck
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*Function
and
Quality
of
Life*



Cancer of lower jaw
without prosthesis



Cancer of lower jaw
with prosthesis

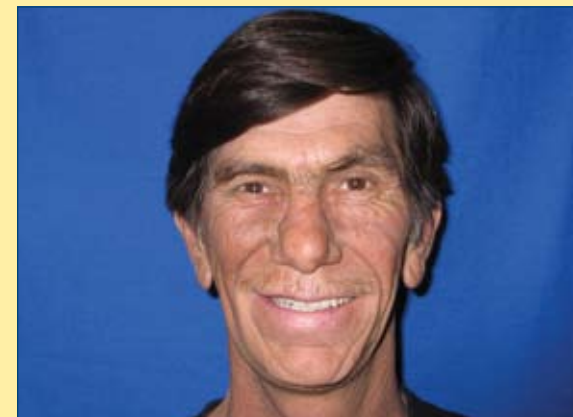
Special Need:

CENTER FOR FUNCTIONAL OUTCOMES AND
RECONSTRUCTIVE BIOTECHNOLOGY

These “forgotten patients” now have a team of specialists at Hollings Cancer Center who truly do perform miracles and want to do more. Doing more will not only effect the clinical experience, but it will also advance evidenced-based medicine studies. Ultimately, this Center will create greater collaboration between basic scientists and clinicians as well as the ability to quantitatively measure the functional effectiveness of treatments for head and neck cancer and dental rehabilitation.



3D model of lower jaw



Cancer of upper jaw after treatment with prosthesis



Benign tumor of upper jaw
without prosthesis



Benign tumor of upper jaw
with prosthesis

*speaking,
swallowing, and
chewing, taken
for granted
by the general
population
and are often
dramatically
impaired in head
and neck cancer
survivors.*

Mission:

FUNCTION, QUALITY OF LIFE, DISCOVERY, APPLICATION,
CLINICAL EFFICACY, OUTCOMES

The Center will measure the function of patients at various stages of their treatments and will lead to innovative rehabilitation technologies.



Congenitally missing ear



Congenitally missing ear with ear prosthesis

The Center for Functional Outcomes and Reconstructive Biotechnology bridges basic scientists with clinical scientists to develop innovative technologies in the treatment of head and neck cancer. This Center would provide an opportunity to develop a mechanism to collect and analyze outcome data in order to measure the functional recovery of patients treated for head and neck cancer. Currently, there exists insufficient evidence to support the functional significance of routinely applied rehabilitative treatments. This lack of evidence is in large part related to the difficulty in structuring multidisciplinary testing, treatment, and research efforts. The Center will house multi-specialists including head and neck surgeons, facial plastic and reconstructive surgeons, radiation oncologists, chemotherapists, speech pathologists, oral and maxillofacial surgeons, and maxillofacial prosthodontists. The Center will measure the function of patients at various stages of their treatments and will lead to innovative rehabilitation technologies.



Cancer of lower jaw with upper and lower prosthesis

Our Goal:

TO RETURN FUNCTION AND QUALITY OF LIFE TO PATIENTS
WHO HAVE LOST ORAL/FACIAL STRUCTURES.

The results of this research will benefit the overall quality of life of our patients and their families. They will be able to make informed treatment decisions based on evidence regarding their potential for functional recovery. In addition, the collaboration between specialists and the data that will be gathered will help identify those key factors that will be critical in determining the functional outcomes of patients related to the type of head and neck cancer treatment.

The results of this research will benefit the overall quality of life of our patients and their families.



Orbital prosthesis



Orbital prosthesis restores facial appearance



Upper jawbone cancer with prosthesis



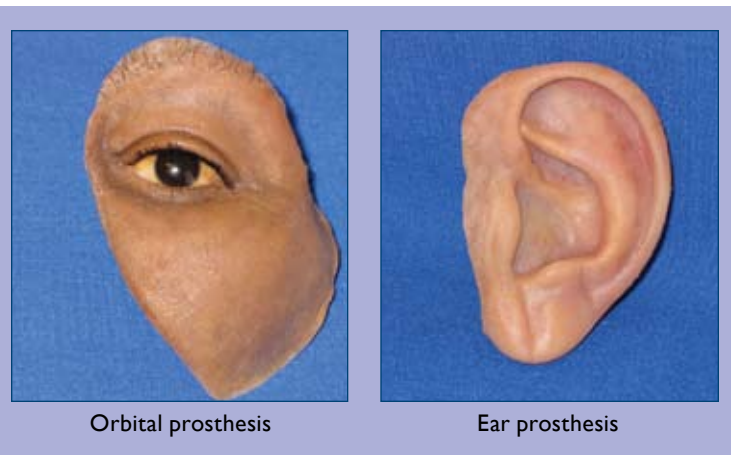
Our goal is to improve function and quality of life for people who have loss of oral/facial structures.

Restoring Faces

RETURNING TO SOCIETY

The Center for Functional Outcomes and Reconstructive Biotechnology... a bridge from basic science to clinical science for the advancement of restoration of face and head deficits.

Biotechnology represents an investment in the future of health care and a deep commitment to public service. It will be a dynamic new complex of laboratories and a bridge from basic science to clinical science for the advancement of restoration of face and head deficits. This interdisciplinary approach of sharing of knowledge, skills, and technology will advance biomedical science with new discoveries improving the quality of life for our patients.



Orbital prosthesis

Ear prosthesis



Nasal prosthesis

Nasal prosthesis

Nasal prosthesis

Please Make A Gift Today

To accomplish these goals, we are asking for your support. Your gifts do make a difference to our cancer patients. Your gifts also empower us to raise the standard of healthcare in our state . . . one student, one patient, and one discovery at a time. The Center welcomes the assistance of individuals, corporations, and foundations, and we will work with you to outlining a giving opportunity that matches your interest with our very real needs. By making a gift to the Center for Functional Outcomes and Reconstructive Biotechnology, you can share in the legacy of making a meaningful difference in the lives of our patients and their families, for generations to come.

NAMING OPPORTUNITIES

Center for Functional Outcomes and Reconstructive Biotechnology	\$10,000,000
Endowed Chair in Maxillofacial Prosthodontics	\$1,000,000
Endowed Chair in Head and Neck Surgery	\$1,000,000
Endowed Chair in Speech and Swallowing Pathology	\$1,000,000
Clinical Research Laboratory	\$750,000
Endowed Professorship in Esthetic Implant Dentistry	\$500,000
Maxillofacial Prosthodontic Clinic	\$125,000
Oral Function Laboratory	\$100,000
3D Imaging Laboratory	\$100,000
Molecular and Cell Biology Laboratory	\$100,000
Tissue Engineering Laboratory	\$100,000
Gene Therapy Laboratory	\$100,000
Maxillofacial Prosthodontic Room (HCC) (Naming will be shared with two individuals)	\$75,000
Endowed Professorship for Anaplastology	\$50,000
Technology Fund	Any Level
General Funds	Any Level

Should you wish to make a gift today, please make your check payable to MUSC Foundation HCC MFP Fund and mail it to Rachael D. Smith, Director of Development, Hollings Cancer Center, 86 Jonathan Lucas Street, Charleston, SC 29425.

Should you wish to make a gift through securities, through your estate plans, in your will, in honor or memory of someone, please contact Rachael D. Smith at (843) 792-7694 or smithrmd@musc.edu to for assistance or to schedule a personal visit. We look forward to discussing these opportunities in detail.

Thank you from the bottom of our hearts for your support!

Davis and Hornig

WORKING TO BRING THE CENTER FOR FUNCTIONAL OUTCOMES
AND RECONSTRUCTIVE BIOTECHNOLOGY TO REALITY

DR. BETSY K. DAVIS AND DR. JOSHUA
HORNIG HAVE A VISION THAT
CHANGES LIVES.



Dr. Betsy K. Davis

Dr. Davis is an Associate Professor of Otolaryngology-Head and Neck Surgery, and Associate Professor of Oral & Maxillofacial Surgery with special interests in maxillofacial prosthodontics, implant prosthodontics, and aesthetic dentistry. Dr. Davis is a cum laude graduate of Wofford College and received her D.M.D. degree from the Medical University of South Carolina. Dr. Davis pursued graduate training in Prosthodontics at the University of Iowa where she received her Certification and Master's degree in Prosthodontics. She joined the faculty at Ohio State University where she taught and practiced from 1989-1992.

Davis completed her fellowship training in Maxillofacial Prosthetics at M.D. Anderson Cancer Center in Houston, Texas, followed by a Maxillofacial Prosthetic/Implant Residency at UCLA Maxillofacial Prosthetic Clinic under the direction of Dr. John Beumer. She returned to her home state of South Carolina in 1994 to develop the MUSC Maxillofacial Prosthodontic Clinic.

Dr. Davis is an adjunct faculty member in the Department of Bioengineering at Clemson University. Dr. Davis's research focuses on rehabilitation of the maxillofacial patient. Her collaboration with the Bioengineering Department at Clemson University includes studies in 3D modeling and rapid prototyping of facial prosthesis, implant biomechanics focusing on photoelastic and finite element analysis of tissue bar designs in head and neck cancer patients, and bisphosphonate associated osteonecrosis. Future plans include the development of a Functional Outcome Center to measure the functional recovery of head and neck cancer patients.

Dr. Davis's clinical expertise bridges the Colleges of Medicine and Dental Medicine into collaborative efforts in the arenas of patient care, teaching, and research. This has resulted in the integration of dentistry with multiple medical specialties including Otolaryngology/Head and Neck Surgery, Plastic and Reconstructive Surgery, Dermatology/Dermatologic Surgery, Neurosurgery, Radiation Oncology, Rehabilitative Medicine, and Psychiatry.

DR. JOSHUA HORNIG

Dr. Joshua Hornig completed both his medical degree and his residency training from the University of Alberta where he was awarded the prestigious First Class Distinction and Honors in Research title upon graduation. Following residency, Dr. Hornig completed a highly respected fellowship in Head & Neck Oncology, Facial Plastic and Microvascular Reconstructive Surgery at the Medical University of South Carolina. Upon completion of his fellowship, he joined the Department as an Assistant Professor. Now, he takes an active role in the instruction of residents as well as mentoring the microvascular fellow in the latest reconstructive techniques.



Dr. Joshua Hornig

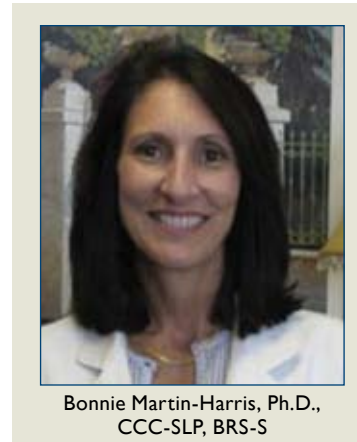
Dr. Hornig's particular expertise and interests lie in minimally invasive thyroid and parathyroid surgery (utilizing lasers, advanced video assisted surgery and mini-incisions), facial plastics & microvascular reconstruction and cancers of the head and neck. He utilizes advanced reconstructive techniques to speed recovery and to enhance postoperative function. His research interests include the use of tissue engineered customized implants to allow improved cosmesis and speech and swallowing outcomes. Additionally, he is active in improving his patient's overall functional outcome following treatment for cancers of the head and neck.

On a national level, Dr. Hornig is a member of the Facial Plastic and Microvascular Reconstructive Committee for the American Academy of Otolaryngology-Head and Neck Surgery Foundation. Locally, he has created both a thyroid/parathyroid team and a facial plastic & microvascular reconstructive surgical team.

Evelyn Trammell

INSTITUTE FOR VOICE & SWALLOWING

Dr. Bonnie Martin-Harris has been the Director of the MUSC Evelyn Trammell Institute for Voice and Swallowing since 2000. The Institute is part of the Department of Otolaryngology Head and Neck Surgery and is named in the memory of Mrs. Evelyn Trammell, a supporter of Dr. Martin-Harris' clinical, research, and educational activities. The Institute partners with a team of 18 speech-language pathologists at MUSC Hospital and is renowned for the compassionate and comprehensive communication and swallowing services provided to infants, children and adults



Bonnie Martin-Harris, Ph.D.,
CCC-SLP, BRS-S

The MUSC Evelyn Trammell Institute for Voice and Swallowing offers a comprehensive range of services from speech pathology to the medical and surgical care of voice and airway problems. This Institute is the first in South Carolina to provide a multidisciplinary center for the evaluation, treatment and clinical research of laryngeal, voice and swallowing disorders for adults and children. Because voice, swallowing and respiratory disorders often occur together, the Institute offers maximized care by collaborating with a range of specialists.

As a division of the Department of Otolaryngology - Head and Neck Surgery, the Institute brings together a wealth of resources and expertise. MUSC physicians and staff provide state-of-the-art care for adults and children presenting a wide variety of disorders.

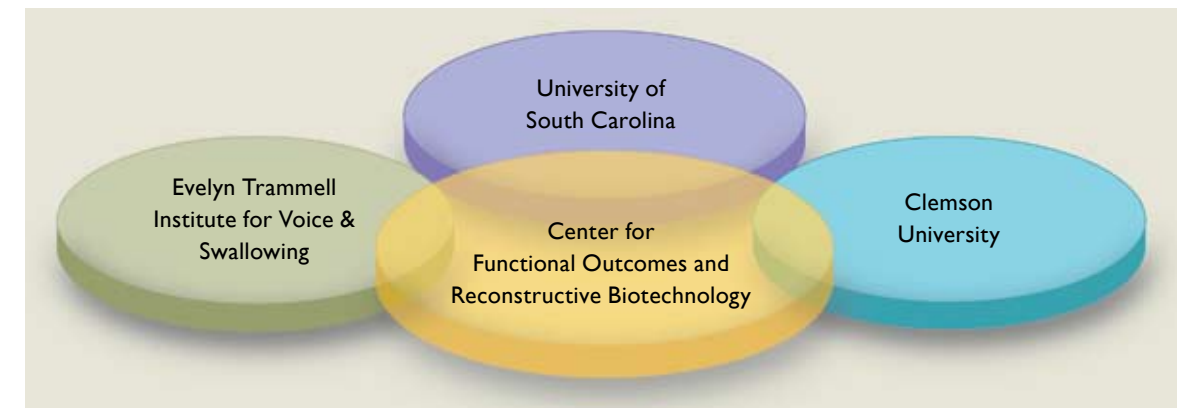
Each patient receives a complete evaluation and individualized treatment program from each of the specialists consulted. The program includes collaborative management between head and neck surgeons, speech-language pathologists, and maxillofacial prosthodontists.

In addition to providing patient care, the Institute is committed to building public awareness of voice and swallowing disorders through teaching and education. Clinical research is another vital component of the Institute. The institute makes use of cutting-edge research and technology for assessment and advanced behavioral and surgical procedures in the

Bridging the gap

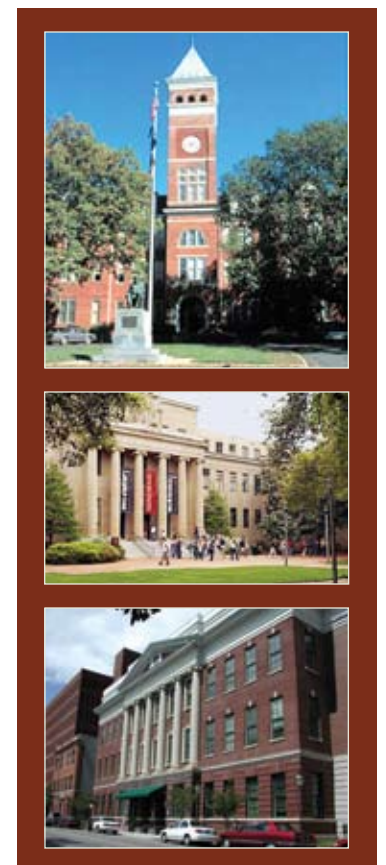
BETWEEN BIOMEDICINE AND BIOTECHNOLOGY

CLEMSON UNIVERSITY – MEDICAL UNIVERSITY OF SOUTH CAROLINA
CAROLINA – UNIVERSITY OF SOUTH CAROLINA
BIOENGINEERING ALLIANCE



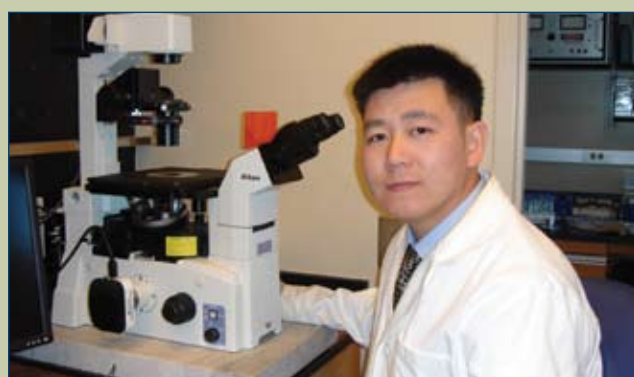
PROVIDING REVOLUTIONARY DISCOVERIES
TO ADDRESS THE UNMET NEEDS OF
HEAD AND NECK CANCER PATIENTS.

Biomedical science stands on the threshold of discoveries which will restore facial features that have been devastated by congenital defects, cancer, or trauma by regenerating skin, bone, and soft tissue. These advances will have dramatic impacts on health care and will require multi-disciplinary and multi-organizational approaches to research, development and translation.



The CU-MUSC-USC Bioengineering Alliance bridges the physical, engineering, and computational sciences with the life sciences and coalesces university resources to enable understanding of fundamental biological and disease processes and to improve health care. Internationally-recognized basic and clinical scientists from MUSC's Colleges of Medicine, Dental Medicine, and Health Professions and physical scientists from CU's and USC's Colleges of Engineering and Science work together to address challenges throughout all aspects of the biomedical paradigm – discovery-to-translation-to-patient delivery. Although these experts may approach the problems from different viewpoints, they are all working together toward a common goal - to improve function and quality of life for people who have loss of oral or facial structures due to cancer, trauma, or congenital defects.

The MUSC offers specialists in head and neck surgery, plastic and reconstructive surgery, radiation oncology, maxillofacial prosthodontics, and speech and swallowing pathology. CU and USC offer specialists in bioengineering, tissue engineering, biomaterials, biomechanics, modeling and simulation, imaging, molecular and cell biology, and gene therapies. The resulting collaborations provide an exciting multi-disciplinary environment that fosters the development of innovative approaches and technologies and produces revolutionary advances to address the currently unmet needs of the patients.



Dr. Hai Yao's research in tissue engineering and biomechanics addresses critical issues in healthcare.



Congenitally missing ear



Ear prosthesis made with rapid prototyping by Professor Randy Emert (CU) and Dr. Betsy Davis (MUSC)

MUSC

HEAD & NECK TUMOR PROGRAM

MULTIDISCIPLINARY TEAM MEMBERS.

Head & Neck Surgery

Terry A. Day, M.D.
M. Boyd Gillespie, M.D., MS
Joshua Hornig, M.D., FRCS(C)
Eric Lentsch, M.D.
Oleg Militsakh, M.D.
J. David Osguthorpe, M.D.
Judith M. Skoner, M.D.
Rodney Schlosser, M.D.
Mary Beth Chalk, APRN-BC

Radiation Oncology

Anand Sharma, M.D.

Medical Oncology

Paul E. O'Brien, M.D.

Reconstructive Surgery

Joshua Hornig, M.D., FRCS(C)
Seung-Jun O, M.D.
Patrick J. O'Neill, M.D.
Adam Ross, M.D.
Judith M. Skoner, M.D.

Neuroradiology

John P. Deveikis M.D.
Zoran Rumboldt M.D.
Maria Vittoria Spampianto, M.D.
Ken Spicer, M.D.

Pathology

Mary S. Richardson, M.D., DDS

Dental/Maxillofacial

Betsy K. Davis, D.M.D., MS
Beverly K. Attaway, D.M.D., MS
Durwood Bach, D.M.D.
Michele Ravenel, D.M.D.
Michael Wade Tabor, DDS
Tanya Riffe, RDH

Oral Pathology

Angela Chi, DMD
Brad W. Neville, DDS

Oral Surgery

Durwood Bach, DMD
Michael Wade Tabor, DDS

Speech Pathology

Bonnie Martin-Harris, Ph.D., CCC-SLP, BRS-S
Julie Blair, MS, CCC-SLP
Rebekah McCown, MS, CCC-SLP

Clinical Trials

Christina S.T. Wilhoit, CCRP

Endocrine Oncology

Jyotika Fernandes, M.D.

Neurotology

Paul R. Lambert, M.D.
Ted Meyer, M.D., Ph.D.

Dermatologic Oncology

Joel Cook, M.D.
Pearon Lang, M.D.

Oculoplastic Surgery

Gene R. Howard, M.D.

Physical Therapy

Jeanne Robinson, PT, MHSA

Occupational Therapy

Jamie Lupini, MSR, OTR/L

Nutrition

Ali Ballard, RD, CNSD
Greer Gowen, RD
Aby Van der Veer, RD

Operating Room Nursing

Monica Dunn, RN

Inpatient Nursing

Melissa Dunkerley, RN, BSN
Andrea Meaburn, RN, MSN
Kristen Wachsmuth, RN, MSN

HCC Clinical Social Worker

Elena Bell, LISW, ACSW

HCC Psychologist

Cindy Carter, Ph.D.

Head & Neck Program

Coordinator

Pamela Diamond, APRN-BC

HCC Head & Neck

Coordinator

Margie Petko, RN, MSN, LNCC

HCC Nursing

Tess Morris, RN
Shawn Y. Nimons, RN
Sandra Zambetti, RN
Joan Zile, RN, BSN
Kim Gadsden, RN

Translational Research

Deanne M. Lathers, Ph.D.
Jim Norris, Ph.D.
Besim Ogretmen, Ph.D.
Susan Reed, DDS, DrPH
Hon Yuen, Ph.D.
Steven Rosenzweig, Ph.D.
Natalie Sukowski, Ph.D.
M. Rita Young, Ph.D.
Bryan Toole, Ph.D.

Prevention and Control Research

Anthony J. Alberg, Ph.D.

Database Manager

Venkata Sakamuri, MBA

Administrative Director

Ann Durgun

