

**HEALTH CARE SCIENCES** • biomedical communications •

clinical nutrition • emergency medicine education • medical

laboratory sciences • physical therapy • physician assistant studies

• prosthetics-orthotics • radiation therapy • rehabilitation

counseling



**HEALTH CARE SCIENCES****■ ACTING CHAIR**

Jon W. Williamson, Ph.D.

**FACULTY AND ACADEMIC INTERESTS****Raul Caetano, Professor**

M.D., University of Rio de Janeiro, Brazil, 1969;  
M.P.H., Ph.D., University of California, Berkeley,  
1979, 1983

Epidemiology of substance abuse; substance abuse  
among minorities.

**Gordon Green, Professor**

M.D., UT Southwestern Medical Center, 1968  
Public health and human ecology; allied health pro-  
fessions education; HIV/AIDS prevention.

**Charles E. McConnell, Professor**

Ph.D., University of Southern California, 1970  
Medical economics; aging; health-care analysis;  
epidemiology.

**Jon W. Williamson, Professor**

Ph.D., University of North Texas Health Science  
Center, 1992

Human physiology; brain mapping; neural control of  
the circulation; health professions education.

**Richard V. King, Associate Professor**

Ph.D., University of Illinois at Urbana-  
Champaign, 1988

Medical education; curriculum development; faculty  
development; instructional technology;  
competency-based education.

**Helmut Krämer, Associate Professor**

Ph.D., University of Cologne, Germany, 1989  
Molecular mechanisms that regulate membrane traf-  
ficking events in cells, employing a combination of  
molecular, genetic and cell biological approaches.

**Scott Smith, Associate Professor**

Ph.D., University of North Texas Health Science  
Center, 1999

Human physiology; carotid baroreflex function;  
kinesiology; experimental biology.

**Anne C. Freeman, Assistant Professor**

M.S.P.H., University of North Carolina at Chapel  
Hill, 1979

AIDS/HIV intervention and prevention.

**Palma Longo, Assistant Professor**

Ph.D., Columbia University, 2001

Neurocognitive theory applied to teaching and learning  
science; using zebra fish to determine the mechanism or  
action involved in Reiki biofield therapy.

**Lori Millner, Assistant Professor**

Ph.D., Texas Woman's University, 1999

Area health education center; community awareness;  
community/rural health care.

**Thomas H. McConnell III, Clinical Professor**

M.D., UT Southwestern Medical Center, 1962

Anatomic and clinical pathology; laboratory management.

**Alisa Winkler, Clinical Instructor**

Ph.D., University of California, Los Angeles, 1977

Human anatomy; functional morphology, taxonomy,  
paleontology, paleobiogeography of fossil mammals.

**OBJECTIVES**

This department provides basic and interdis-  
ciplinary courses available to all health  
professions programs. In addition, it serves as an  
administrative base for the Biomedical Communi-  
cations, Medical Laboratory Sciences, Prosthetics-  
Orthotics, Radiation Therapy and Emergency  
Medicine Education programs and the Area  
Health Education Center and the Community  
Prevention and Intervention Unit.

The department is also home to the Division  
of Health Care Education and Research. The divi-  
sion directs and supports interdisciplinary educa-  
tion and research, not only between UT South-  
western School of Health Professions departments  
and programs, but also within the entire medical  
center.

Enrollment in many courses in this section is  
restricted. Students interested in taking any of the  
following courses as electives should consult their  
advisers or the Office of the Dean.

**COURSE DESCRIPTIONS****■ BASIC BIOMEDICAL SCIENCES****HCS 3106 INTRODUCTION TO PATHOLOGY  
1 SEMESTER HOUR**

This course offers an introduction to general path-  
ology. Basic pathological processes are emphasized,

with additional focus on musculoskeletal and neurological disease encountered in prosthetic and orthotic practice. Clinical manifestations of disease are correlated with their pathology.

**HCS 3112 BIOCHEMISTRY (LABORATORY)**

**1 SEMESTER HOUR**

Laboratory exercises that illustrate biochemical principles and methods are presented in this course. May be taken concurrently with HCS 3311.

**HCS 3306/5306 INTRODUCTION TO PATHOLOGY (LECTURE AND DEMONSTRATION)**

**3 SEMESTER HOURS**

This course offers an introduction to general pathology. Basic pathologic processes are emphasized, and specific disease entities are used extensively to illustrate principles. Clinical manifestations of disease are correlated with their pathology. Admission to HCS 5306 is limited to students enrolled in the Physician Assistant Studies, Physical Therapy and Prosthetics-Orthotics programs.

**HCS 3311 BIOCHEMISTRY (LECTURE)**

**3 SEMESTER HOURS**

Fundamental aspects of human biochemistry are introduced in this course. Topics include structure and intermediary metabolism of carbohydrates, fats, proteins, nucleic acids, vitamins and minerals.

**HCS 3407/5407 HUMAN PHYSIOLOGY**

**4 SEMESTER HOURS**

This course offers a comprehensive study of the basic functions of the body systems and their interrelationships. For students enrolled in HCS 5407, small-group sessions emphasize the integration of physiological response to therapeutic exercise using clinical-case studies. Admission to HCS 5407 is limited to students enrolled in the Physical Therapy, Physician Assistant Studies and Prosthetics-Orthotics programs.

**HCS 4207 INTRODUCTORY HUMAN NEUROANATOMY**

**2 SEMESTER HOURS**

This course offers a study of the anatomical substrate related to function of the nervous system. Topics include neuroanatomy, cellular and intercellular physiology, neuroplasticity, development of the nervous system, and the somatic and motor systems. Neural disorders encountered in practice

are emphasized.

**HCS 4230/5230/5330 HEALTH CARE RESEARCH**

**2-3 SEMESTER HOURS**

This course provides an overview of the research process, with focus on evidence-based health-care research. Lecture topics include critical literature evaluation, research theory, measurement, design, statistical analysis and interpretation. For students enrolled in 5230/5330, small-group sessions with research advisers emphasize practical application of research concepts and foster project development. Admission to HCS 5230/5330 is limited to students enrolled in the Physical Therapy, Physician Assistant Studies and Prosthetics-Orthotics programs.

**HCS 4301 INTRODUCTION TO RESEARCH**

**METHODOLOGY**

**3 SEMESTER HOURS**

This course offers an introduction to statistical and epidemiological concepts with an emphasis on research strategies and an analysis of literature. A research topic is selected and a literature review completed. This course is the first in a two-semester sequence.

**HCS 4302 DIRECTED RESEARCH**

**3 SEMESTER HOURS**

This course is a continuation of HCS 4301. Students complete a research project started in the previous semester with data collection, analysis, paper and presentation.

**HCS 4308/5308 HUMAN ANATOMY (LECTURE)**

**3 SEMESTER HOURS**

This course offers a comprehensive study of the structure and function of human body systems and their mechanisms. Emphasis is placed on the major characteristics of each body system and its relationship to other systems. Lectures emphasize basic correlative clinical concepts. Admission to this course is limited to students enrolled in degree-granting programs at UT Southwestern. For students enrolled in HCS 5308, small-group sessions will emphasize the musculoskeletal system, including muscle origins and insertions. Admission to HCS 5308 is limited to students enrolled in the Physical Therapy, Physician Assistant Studies and Prosthetics-Orthotics programs.

**HCS 4309/5309 HUMAN ANATOMY DISSECTION LABORATORY****3 SEMESTER HOURS**

This course presents an advanced study of the human body and includes cadaver dissection. Admission to this course is limited to students enrolled in degree-granting programs at UT Southwestern. For students enrolled in HCS 5309, small-group sessions emphasize recognition of surface anatomy and palpation skills. Admission to HCS 5309 is limited to Physical Therapy, Physician Assistant Studies and Prosthetics-Orthotics programs.

*Prerequisite:* Concurrent enrollment in HCS 4308/5308.

**HCS 5207 INTRODUCTION TO NEUROSCIENCE****2 SEMESTER HOURS**

This course consists of lectures and small-group laboratory sessions. It is offered by Neurology and Neuropathology from UT Southwestern Medical School, with assistance from Cell Biology, Physiology, Psychiatry, Anesthesiology and Pain Management, Neuroradiology, and Neuroscience. Basic concepts in anatomy, cellular physiology and neural-systems physiology are covered in the course. Emphasis is given to the practical application of these basic anatomical and physiological principles to human neuroscience and neuropathology.

■ **BEHAVIORAL SCIENCES AND OTHER COURSES**

**HCS 3101 MEDICAL TERMINOLOGY****1 SEMESTER HOUR**

This course introduces the entering health professions student to medical terminology through a self-instructional format. Explanations of Greek and Latin root words, prefixes and suffixes serve as a basis for interpretation of terms common in medicine and health professions fields. Students are provided an opportunity to develop skills in defining, pronouncing and spelling medical terms.

**HCS 3303 INTRODUCTION TO PUBLIC HEALTH****3 SEMESTER HOURS**

This course introduces the major principles and practices of public health. Topics discussed are the infrastructure and components of the public health system and how they work together to maintain the public's health at the local, state, regional and national levels.

**HCS 5021 MEDICAL SPANISH I****2 SEMESTER HOURS**

This course provides introductory instruction on the four basic skills necessary for language acquisition (speaking, aural comprehension, reading and writing) through a systematic study of basic Spanish grammar, medical terminology and culture.

**HCS 5022 MEDICAL SPANISH II****2 SEMESTER HOURS**

This course provides further instruction on the four basic skills necessary for language acquisition (speaking, aural comprehension, reading and writing) through a systematic study of more advanced Spanish grammar, medical terminology and culture.

**HCS 5023 MEDICAL SPANISH III****2 SEMESTER HOURS**

This course is a conversational course in which each student practices being the provider and the patient.

**HCS 5106 PROFESSIONAL DEVELOPMENT****1 SEMESTER HOUR**

This course introduces the major principles and issues involved in interpersonal skills for interdisciplinary health care. Topics covered include intrapersonal effectiveness, verbal and nonverbal communication, building teams, managing conflict, behavioral change, and ethics.



## BIOMEDICAL COMMUNICATIONS

### ■ DEGREE OFFERED

Master of Arts

Biomedical Communications-  
Biomedical Illustration

### ■ PROGRAM DIRECTOR

Lewis E. Calver, M.S.

### FACULTY AND RESEARCH INTERESTS

#### **Lewis E. Calver, Associate Professor**

M.S., University of Michigan, 1973

Effective use of medical illustration in biomedical communications; visual explanations of biomedical information; envisioning scientific concepts and information.

#### **Kimberly A. Hoggatt Krumwiede, Associate Professor**

M.A., UT Southwestern Medical Center, 1993

Biomedical multimedia development and production; research and development of applications for new and emerging technologies with multimedia for student, physician and patient education.

#### **Kenneth D. Coulter, Assistant Professor**

M.F.A., Cleveland Institute of Art, 2007

Computer modeling; texturing; rigging; lighting; rendering and compositing production for the biomedical professions; educational gaming theory and production; interactive multimedia development and programming.

#### **Angela M. Diehl, Instructor**

M.A., UT Southwestern Medical Center, 2005

2-D animation; cellular and molecular illustration and animation; multimedia development; art direction and design.

### ■ ADJUNCT FACULTY

#### **Susan B. Douglass, Adjunct Assistant Professor**

B.F.A., University of Mississippi, 1981

Graphic design applications in the health sciences; use of computers as production tools; art direction and design; instruction for the health sciences.

#### **Gregory G. Gion, Adjunct Instructor**

B.S., University of Illinois Medical Center, 1981

3-D models and prosthetics.

### OBJECTIVE

The objective of the Biomedical Communications Graduate Program is to help students develop the ability to communicate biomedical information effectively. The program offers students the opportunity to develop their skills as medical illustrators within the health-care system. Training is accomplished in an active medical center environment.

### FACILITIES

Classrooms, equipment and student work space are located at the Bass Center campus and provide an excellent work and study environment.

For a complete description of this program, including requirements for admission, please refer to the *UT Southwestern Graduate School of Biomedical Sciences Catalog*.



## EMERGENCY MEDICINE EDUCATION

## ■ DEGREE OFFERED

Certificate (from El Centro College)

## ■ PROGRAM DIRECTOR

Debra Cason, EMT-P, R.N., M.S.

## FACULTY AND ACADEMIC INTERESTS

**James M. Atkins, Professor**

M.D., UT Southwestern Medical Center, 1967  
Cardiology; emergency medicine.

**Debra Cason, Associate Professor**

EMT-P, R.N., M.S., Texas Woman's University, 1979  
Geriatrics; accreditation of paramedic educational programs.

**Lynne Dees, Associate Professor**

NREMT-P, Ph.D., Texas Woman's University, 2009  
Continuing education specialist; student-centered, Inter-

net and problem-based adult education; fire fighter/EMS provider health.

**Kathy Rinnert, Associate Professor**

M.D., University of Chicago, 1995; M.P.H., University of Pittsburgh, 1997  
Emergency medical services systems; aeromedical services; tactical EMS.

**Sherry Clark, Assistant Professor**

L.P., R.N., B.S.N., Texas Woman's University, 1980  
EMS education.

**Ann Hudgins, Assistant Professor**

NREMT-P, R.N., B.S.N., Texas Christian University, 1980  
Curriculum development; classroom and field instruction.

**Monica Huff-Gresham, Assistant Professor**

L.P., R.N., B.S.N., University of Texas Medical Branch at Galveston, 1976  
Exam preparation and class instruction.

**Suzanne Kee, Assistant Professor**

NREMT-P, R.N., B.S.N., Texas Woman's University, 1986  
Paramedic continuing education; field evaluation.

**Kenneth Navarro, Assistant Professor**

L.P., M.Ed., American Intercontinental University, 2009  
Emergency medicine and paramedic continuing education.

**Michael Pebworth, Assistant Professor**

EMT-P, B.A., University of Texas at Arlington, 1978  
Paramedic continuing education.

**Karen Pickard, Assistant Professor**

L.P., R.N., B.S.N., University of Texas at Arlington, 1986  
Continuing education; quality improvement.

**Paul Rosenberger, Assistant Professor**

NREMT-P, M.P.A., University of North Texas, 1999  
EMS initial education.

**Ryan Dikes, Instructor**

L.P., B.S., Baylor University, 1999  
Emergency medicine and paramedic continuing education.

**Richard LaChance, Instructor**

L.P., B.A., University of Texas at Arlington, 1997  
Webmaster for continuing education.

**T.J. Starling, Instructor**

L.P., A.S., Amarillo College, 2001  
EMT and paramedic education.

**Leslie Teel, Instructor**

NREMT-P, B.S.Ed., L.P., Stephen F. Austin State  
University, 1980  
Paramedic education; geriatrics.

**Gregory Winters, Instructor**

L.P., M.P.A., University of Texas at San Antonio,  
2007

**Mike Ziem, Instructor**

EMT-P, A.S., Collin County Community College,  
2007

**Paul Vogt, Assistant Instructor**

L.P., A.A.S., Hill College, 2001

**Chris Thompson, Assistant Instructor**

L.P., B.A.A.S., University of North Texas, 2009

**John Hutchison, Faculty Associate**

EMT-P, Dallas County Community College  
District, 1980

**David Williams, Faculty Associate**

NREMT-P, Dallas County Community College  
District, 2003

**DESCRIPTION OF THE PROGRAM**

The Emergency Medicine Education program offers instruction to students enrolled at El Centro College of the Dallas County Community College District. The program offers two levels of courses: emergency medical technician and paramedic. These courses prepare the graduate to function in emergency medical services positions in the pre-hospital environment.

The EMT course includes instruction in basic life support, such as cardiopulmonary resuscitation, automatic external defibrillation, physical assessment, bandaging and splinting, traction splinting, spinal immobilization, airway management, oxygen therapy and other noninvasive procedures.

The paramedic program prepares the graduate to function in an advanced life-support capacity with invasive skills, such as intravenous initiation, external jugular cannulation, endotracheal intubation, drug administration by various routes, intra-osseous infusions, electrocardiogram rhythm identification, 12-lead ECG interpretation, defibrillation and cardioversion, noninvasive cardiac pacing, and chest decompression. The program includes 42 semester hours.

Both EMT and paramedic courses include classroom instruction, hospital rotations with emphasis on emergency department experience, and emergency ambulance experience. Current information should be obtained from the Emergency Medicine Education Program, 5323 Harry Hines Blvd., Dallas, TX 75390-9134, 214-648-5246.