THE PROGRAM

Human physiology is the science of the mechanical, physical, and biochemical functions of humans: their organ systems, organs, and the cells of which they are composed. The basic, foundational principle for the study of human physiology is the maintenance of homeostasis through the operation of complex control systems. These systems encompass all levels of the hierarchy of human structure and function (i.e. cells, tissues, organs, organ systems, and the organism). Each course in our curriculum emphasizes an integrated study of humans across this hierarchy of structure and function. Consequently, a reductionist approach that separates the curriculum into specific courses such as “molecular physiology,” “cell physiology,” “histology,” or “organ physiology,” has been purposely avoided. Topics covered across the curriculum include:

- **General Physiological Concepts** - body organization, homeostasis, control systems, biochemistry, cell structure, cell function, histology, metabolism, membranes, and cellular communication
- **Systems Physiology** - neurophysiology, muscular physiology, cardiovascular physiology, respiratory physiology, renal physiology, fluid and acid-base physiology, digestive physiology, endocrinology, immunology, and reproductive physiology
- **Integrative Physiology** - exercise physiology, environmental physiology, physiology of aging, biomechanics, and nutrition

The **Human Physiology major**, along with selected electives from other departments across the University, provides students with preparation for graduate or professional study in a variety of fields. In a Fall 2012 department survey on career goals, Human Physiology majors indicated their interest in pursuing various health professions as follows:

- physical therapist - 52%
- physician - 17%
- physician’s assistant - 14%
- other - 17% (including occupational therapist, sports medicine, pharmacist, public health, dentist, chiropractor, nursing, exercise physiology research, etc.)

The program uniquely emphasizes the scientific basis and mechanisms of human function, adaptation, development and aging, health and disease, and performance.

STUDENT RESEARCH PROJECTS

As a part of independent studies and/or requirements for upper-division courses, our majors complete research projects, some of which are accepted for publication and/or presentation at regional and national scientific meetings. The following are examples of student/faculty research that have been accepted for presentation or publication in recent years:


THE PASSION

The mission of Gonzaga’s Department of Human Physiology is to develop ethical, critical thinkers and scientists who possess the creativity, intelligence, and initiative necessary to be a responsible member of scientific and clinical professions. The Bachelor of Science (B.S.) degree in Human Physiology requires students to develop significant content knowledge, analytical thinking skills, knowledge of scientific principles and research, and an ability to communicate their knowledge to others. These capacities prepare students for graduate study in disciplines and professions grounded in the study of human anatomy and physiology.

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OUTCOMES
Most graduates from our program pursue graduate study and/or training necessary for a variety of health professions. Our graduates have been employed in a variety of fields and organizations, including:

- Coeur d’Alene Physical Therapy (Coeur d’Alene, ID)
- In Motion Physical Therapy (Spokane, WA)
- Performance Physical Therapy (Spokane Valley, WA)
- Holy Family Hospital Rehabilitation Services (Spokane, WA)
- U.S. Army Institute of Environmental Medicine (Natick, MA)
- Mayo Clinic (Phoenix, AZ)

Possible careers for Human Physiology majors are also represented by the graduate and professional schools listed on the next page that have accepted our graduates recently.
Biomedical Sciences
Creighton University

Biomechanics
University of Calgary (Alberta)
University of Oregon
University of Western Australia

Dental School
Oregon Health & Science University
University of British Columbia

Exercise Science/Physiology
Baylor University
Central Washington University
University of Oregon

Medical School
Creighton University
Medical College of Wisconsin
Oregon Health & Science University
Pacific Northwest University of Health Sciences
- College of Osteopathic Medicine
Tulane University
University of Nevada, Reno
University of Southern California
University of Vermont
University of Washington
Wake Forest University

Molecular Physiology
University of Vermont

Neurophysiology
University of California, Davis

Nursing
Linfield College
Seattle University
University of Utah

Nutrition
Bastyr University

Occupational Therapy
Colorado State University
George Washington University
Idaho State University
Oregon State University
Tulane University
University of Puget Sound
University of Washington

Optometry
Pacific University
Indiana University
Ferris State University

Physical Therapy
Chapman University
Columbia University
Creighton University
Duke University
Eastern Washington University
Emory University
George Washington University
Northwestern University
Old Dominion University
Pacific University
Regis University

Sacred Heart University
St. Catherine University
Samuel Merritt University
University of Illinois
University of Maryland
University of Minnesota
University of Montana
University of the Pacific
University of Pittsburgh
University of Puget Sound
University of St. Augustine
University of Southern California
University of Washington
Washington University in St. Louis

Physician’s Assistant
Midwestern University (Phoenix, AZ)
University of New Mexico

Public Health
George Washington University
Oregon State University
University of Washington
THE PEOPLE
Faculty in the Department of Human Physiology are active scholars and health/fitness specialists whose academic and professional expertise is invaluable to Human Physiology students.

Faculty Contacts, Research Interests, & Publications
Christina A. Geithner | Ph.D., University of Texas, Austin | Professor | ACSM-Certified Health Fitness Specialist®, Registered Yoga Instructor (RYT-200) | physical and physiological changes across the lifespan; barriers to and motivators for physical activity; and performance prediction and talent identification in sport | geithner@gonzaga.edu


Brian K. Higginson | Ph.D., Oregon State University | Associate Professor | biomechanics, ergonomics, and energetics of load carriage; kinematic and muscle adaptation during prolonged exercise (cross-country skiing and cycling); and physiological and biomechanical determinants of shooting performance in competitive shooters | higginson@gonzaga.edu


Daniel J. McCann | Ph.D., University of California, Davis | Professor | metabolism, exercise physiology, dimensional analysis, and environmental physiology | mccann@gonzaga.edu


David Thorp | Ph.D., University of Western Ontario | Dept. Chair, Associate Professor | the role of exercise training in intracellular signaling and improvement of myocardial tolerance to ischemia | thorp@gonzaga.edu


Stephen B. Conant | M.S., Montana State University, Bozeman | Lab Specialist and Instructor | advanced technology as a mechanism for community building and collaboration in public health policy and public health research | conant@gonzaga.edu