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 PASSION

The mission of Gonzaga’s Department of Human Physiology is to develop ethical, critical thinkers and scientists who recognize the essential role of human 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.

The B.S. in Human Physiology, along with selected electives from other departments across the University, provides students with preparation for graduate or professional study in a variety of fields, including health professions (physical therapy, occupational therapy, physician’s assistant, cardiac rehabilitation, public health, dentistry, chiropractic, medicine, etc.), research, and teaching. 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:

**Dixon M, Wong R, Csicsery K, Popich A, Klassen D, Mehndiratta V, and Higginson BK.**


**Gieser VR, Droessler JT, Dixon MJ, Wong RL, and Thorp DB.**

Effect of temporal deception on power output during a 30-sec Wingate test. 2013 ACSM-NW Annual Conference – poster presentation.

**Klassen D, Mills K, Eliason S, Csicsery K, Popich A, and McCann DJ.**


**Mills KL, Kollar VC, Eliason SL, Thomas EC, Sheahan SR, and Higginson BK.**

Effect of visual impairment and anterior loads on obstacle clearance. 2013 ACSM-NW Annual Conference – poster presentation.

**Nadeau JT, Droessler JT, Eastwood MC, Whitlock CL, Gieser VR, and Higginson BK.**


THE POTENTIAL

Most Gonzaga students that have graduated from our program pursue graduate study and/or professional training. Our students have applied and been accepted to the following programs and institutions.

**Alternative/Naturopathic Medicine**

- Bastyr University
- Western Washington University

**Biomedical Sciences**

- Creighton University
Biomechanics
University of Alberta, Calgary
University of Oregon
University of Western Australia

Cardiac Rehabilitation
University of Oregon

Chiropractic Medicine
Life Chiropractic College West
Palmer College of Chiropractic

Dentistry
Oregon Health & Science University
University of British Columbia

Exercise Science/Physiology
Baylor University
Boise State University
Central Washington University
Marywood University
Montana State University
Northeastern University
San Diego State University
University of California, Davis
University of Northern Colorado
University of Oregon
University of Vermont
Western Washington University

Medicine
Creighton University
Medical College of Wisconsin
Oregon Health & Science University

Pacific Northwest University of Health Sciences, College of Osteopathic Medicine
Tulane University
University of Southern California
Wake Forest University
Western University of Health Sciences, College of Osteopathic Medicine of the Pacific
University of Nevada, Reno
University of Washington

Nuclear Medicine
Swedish Hospital (Seattle)

Nursing
Gonzaga University
Linfield College
Seattle University
University of Colorado, Denver
University of Utah

Occupational Therapy
Colorado State University
Creighton University
Eastern Washington University
Idaho State University
Samuel Merritt University
University of Puget Sound
University of Southern California
Washington University in St. Louis

Optometry
Pacific University
Indiana University
Ferris State University

Physical Therapy
Chapman University
Columbia University
Creighton University
Duke University
Eastern Washington University
Emory University
Massachusetts General Hospital, Institute of Health Professions
Northern Arizona University
Northwestern University
Pacific University
Regis University
Samuel Merritt University
The College of St. Catherine
University of Colorado
University of Montana
University of Pittsburgh
University of Puget Sound
University of Saint Augustine
University of Southern California
University of Washington
Washington University in St. Louis
Wheeling Jesuit University

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

Public Health
George Washington University
Oregon State University
University of Washington
THE PEOPLE

Christina A. Geithner | Ph.D., University of Texas, Austin | Professor | ACSM-Certified Health Fitness Specialist®, Registered Yoga Instructor (RYT-200). | Research interests: 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 | Research interests: 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. | ACSM-NW Treasurer. | higginson@gonzaga.edu


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


David Thorp | Ph.D., University of Western Ontario | Dept. Chair, Associate Professor | Research interests: 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: Human Anatomy & Physiology I & II Labs, and Practice in Laboratory Teaching. | Academic Interests: Advanced technology as a mechanism for community building and collaboration in public health policy and public health research. | ACSM - Northwest Chapter President-Elect, ACSM National Health and Science Policy Committee - Northwest Chapter Representative, ACSM-certified Health/Fitness Specialist®, National Strength & Conditioning Association-Certified Strength & Conditioning Specialist. | conant@gonzaga.edu