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, organs 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 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.

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. Human Physiology majors express interest in pursuing various health professions, such as:

- physical therapist
- physician
- physician’s assistant
- occupational therapist
- exercise physiology and biomechanics research
- sports medicine
- pharmacist
- public health
- dentist
- chiropractor
- nursing

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:


Lindecker, P. and Higginson, B. Contributions of an external load on shooting performance during a novel shooting task. Northwest Biomechanics Symposium, Seattle, WA.

Lindecker, P. and Higginson, B. Validation of inertial sensors for use in shooting event detection. Northwest Biomechanics Symposium, Seattle, WA.
**Nutrition**
- Bastyr University
- Washington State University

**Occupational Therapy**
- Belmont University
- Colorado State University
- Creighton University
- Eastern Washington University
- George Washington University
- Idaho State University
- Midwestern University
- Nova Southeastern University
- Oregon State University
- Tufts University
- Tulane University
- University of Puget Sound
- University of Southern California
- University of Washington

**Optometry**
- Ferris State University
- Midwestern University
- Pacific University
- University of Michigan
- University of Southern California
- Western University of Health Sciences

**Physician’s Assistant**
- Midwestern University
- University of New Mexico

**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
- Samuel Merritt University
- St. Catherine University
- Samuel Merritt University
- University of Illinois
- University of Maryland
- University of Minnesota
- University of Montana
- University of New England
- University of Pittsburgh
- University of Puget Sound
- University of St. Augustine
- University of Southern California
- University of Utah
- University of Washington
- Washington University in St. Louis

**Public Health**
- George Washington University
- Oregon State University
- University of Washington

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**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


- **Daniel J. McCann** | Ph.D., University of Western Ontario | Dept. Chair, Professor | metabolism, exercise physiology, dimensional analysis, and environmental physiology | mccann@gonzaga.edu


- **Ryan S. McCulloch** | Ph.D., University of North Carolina Chapel Hill; NC State University | Assistant Professor | biomechanics, orthopedics, prosthetics | mcculloch@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

ACSM - Northwest Chapter Immediate Past President, ACSM National Health and Science Policy Committee, ACSM-certified Health/Fitness Specialist®, National Strength & Conditioning Association-Certified Strength & Conditioning Specialist.