



# Human Physiology

*The mission of the Department of Human Physiology at Gonzaga is to foster undergraduate education, scientific research, and dissemination of information in the physiological and biomedical sciences. The Department values the aspirations, individuality, and success of students, faculty, and staff who work and learn here. Students and faculty value academic freedom, creative expression, the pursuit of excellence, and the discernment that stems from logic and reason. Gonzaga Human Physiology aspires to be a preeminent and innovative undergraduate program in the physiological sciences.*

## THE PROGRAM

Human physiology is the science of the mechanical, physical, and biochemical functions of humans, and serves as the foundation of modern medicine. As a discipline, it connects science, medicine, performance, and health to create a framework for understanding how the human body adapts to stress, physical activity, and disease.

The Bachelor of Science in Human Physiology degree is for students who plan to pursue advanced degrees in the health professions and biomedical sciences. 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).

## OUTCOMES

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. Students pursuing a B.S. in Human Physiology express interest in pursuing various careers, such as (but not limited to):

- Academia (research scientist, university professor)
- Chiropractor
- Dentist
- Nursing
- Occupational Therapist
- Pharmacist
- Physical Therapist
- Physician
- Physician's Assistant
- Physiologist
- Public Health
- Research Scientist
- Sports Medicine

## RESEARCH OPPORTUNITIES

Students complete novel research studies as part of independent studies and/or requirements for upper-division courses at Gonzaga. Projects recently presented at the American College of Sports Medicine regional conference by Human Physiology students include:

- The effects of cognitive loading and initial mood on leg extension exercise.
- The effect of exogenous ketone supplementation form on blood ketone appearance and metabolism.
- Assessment of cardiovascular function in college students previously infected with the COVID-19 virus.
- The effect of carbon fiber plated midsoles on the biomechanics of non-elite runners.
- The effect of surface and footwear on muscle activation and stability during SEBT.
- The development of a repetition rate duration model in high intensity interval training.
- Quantifying Zoom fatigue: Comparing visual fatigue in response to virtual synchronous Zoom class and Netflix.
- Assessing the cardiovascular function in college students that chronically use electronic cigarettes.
- Effects of Covid-19 and cognitive loading on static and dynamic balance in young adults.
- Impact of male and female sex on the power-duration relationship.

### Faculty Contact

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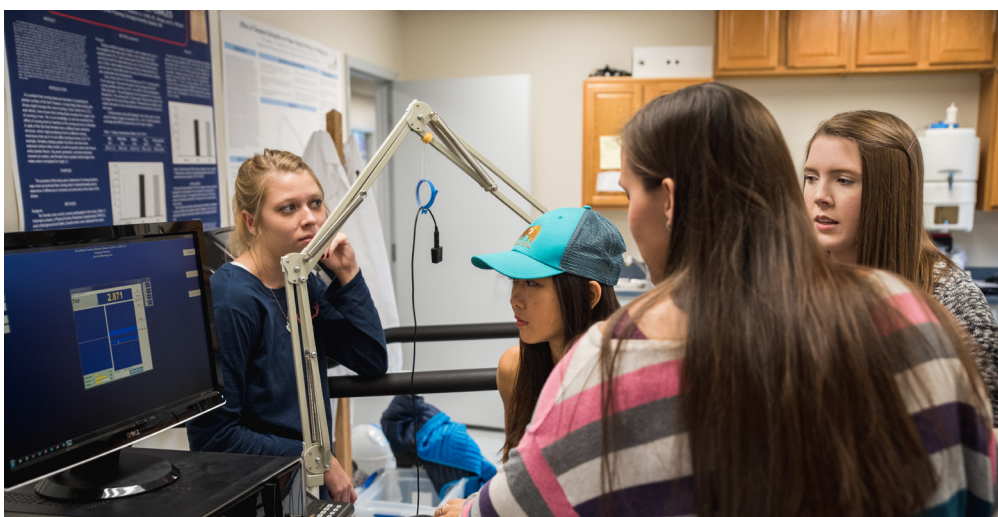
### For more information:

[gonzaga.edu/human-physiology](http://gonzaga.edu/human-physiology)

## COURSES

Each course in the curriculum emphasizes an integrated study of humans across this hierarchy of structure and function. The learning objectives are centered around the following:

- **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, neuromuscular control, biomechanics, and nutrition.



# GRADUATE SCHOOLS

The following are some of the programs and institutions to which Human Physiology graduates have been admitted:

## Chiropractic Medicine

- Life Chiropractic College West
- Palmer College of Chiropractic

## Dental School

- Oregon Health & Science University
- University of British Columbia

## Medical School

- Creighton University
- Georgetown University
- Loma Linda University
- Medical College of Wisconsin
- Northwest Osteopathic Medical School
- Oregon Health & Science University
- Tulane University
- University of Colorado
- University of Nevada
- University of Southern California
- University of Vermont
- University of Washington
- Virginia Commonwealth University
- Wake Forest University

## Masters and Doctoral Programs

- Baylor University
- Creighton University
- Northern Colorado University
- Oregon State University
- San Diego State University
- San Jose State University
- St. Mary's University, Twickenham, London
- University of California - Davis
- University of Colorado - Boulder
- University of Denver
- University of Minnesota
- University of Oregon
- University of Utah
- University of Texas - Austin
- University of Wisconsin

## Nursing

- Creighton University
- Duke University
- Oregon Health & Science 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
- Washington University in St. Louis

## Optometry

- Marshall B. Ketchum University
- Pacific University
- University of Michigan
- University of Southern California
- Western University of Health Sciences

## Physical Therapy

- Creighton University
- Duke University
- Emory University
- Mayo Clinic School of Health Sciences
- MGH Institute of Health Professions
- Northwestern University
- Regis University
- University of Colorado – Denver
- University of Illinois – Chicago
- University of Maryland
- University of Minnesota
- University of Pittsburgh
- University of Southern California
- University of Utah
- Washington University in St. Louis

## Physician's Assistant

- Idaho State University
- Midwestern University
- Texas Tech University
- Trevecca Nazarene University
- University of New Mexico
- University of Washington MEDEX Northwest

## Public Health

- George Washington University
- Loma Linda University
- Northern Arizona University
- Oregon State University
- University of Arizona
- University of Washington