



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, organs 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 BS 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

As a part of independent studies and/or requirements for upper-division courses, students complete novel research studies, which are often accepted for publication and/or presentation at regional and national scientific meetings.

Recent topics of conference presentations by Human Physiology students include:

- Renal expression of chromatin-remodeling complexes in rats exposed to chronic cold.
- Methodology of the biomechanical and cognitive effects of tablet desks on university students.
- Virtual learning versus in-person learning: an anatomy and physiology comparison.
- Comparison of lateral ankle stability between high and low collared basketball shoes.
- The effects of parkinsonian posture and obstacle clearance on gait initiation in young adults.
- The effect of active versus passive rest on time to volitional exhaustion.
- Stride length/frequency ratio remains constant under different running conditions.
- Effects of acute L-carnitine supplementation during low-intensity treadmill exercise.
- Anti-rotational and rotational abdominal exercises and the concurrent muscle activation.
- Health and exercise habits of young adults who use electronic cigarettes.

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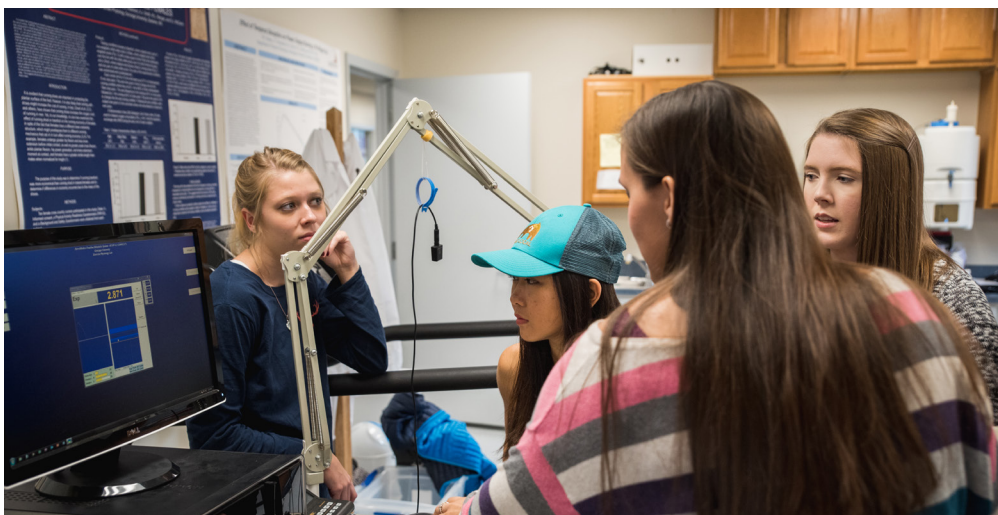
COURSES

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 and 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
- University of New Mexico
- Texas Tech University
- Trevecca Nazarene University
- University of Washington MEDEX Northwest

Public Health

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