Health Science

Students who aspire to ease pain, combat disease, and improve quality of life for patients by pursuing careers in medicine, dentistry, or veterinary medicine must have a love of biology and a deep passion for their studies. Given the rigors and demands of the profession, health science students must make a lifelong commitment to learning and refining their skills. In the Jesuit tradition, health science studies at Gonzaga sharpen the mind and inspire the heart. Through pre-professional "tracks" and the University Core Curriculum, students receive a strong background in science and the comprehensive liberal arts education necessary to continue their studies and earn advanced degrees. At the same time, they also develop a philosophical and humanitarian perspective to address social and ethical issues. The Gonzaga pre-professional health science tracks aim to help students realize their career passions by preparing them for medical, dental, or veterinary school.

THE PROGRAM

Many paths may lead a student to become a practicing member of the medical community. Some students aspire to become practicing medical professionals either by earning an M.D., D.O., D.D.S., D.M.D., or D.V.M. degree in a professional school. Other students are passionate about medical research or teaching and instead pursue an M.S. or Ph.D. Students interested in medicine as a practicing professional, teacher, or researcher choose and complete a regular undergraduate major under the supervision of their academic advisor. There is no "pre-medicine" or any other pre-health science major at the undergraduate level. Health science students must demonstrate strong achievement and aptitude in the natural sciences. Professional school requirements are in most cases embedded within Biology, Biochemistry and Human Physiology majors; however, a science major is not required. Admission committees consider each candidate based on record of academic success, score on the standardized entrance examination (MCAT, DAT, or for most Veterinary schools the GRE), personal characteristics, which are further developed through the core curriculum, demonstrated commitment to service, and knowledge of the chosen career field. Students select a major based on individual interests and potential alternative career plans as well as a thorough exploration of the sum of requirements for their degree and entry into specific professional programs. All pre-professional health science students should complete certain science courses as minimum preparation for professional programs. These courses should be finished prior to the spring semester of the junior year which is when most students take standardized entrance examinations.

The following courses offered at Gonzaga are recommended **for students interested in health science programs**:

- 5 semesters of **chemistry** (General Chemistry, Inorganic Chemistry, Organic Chemistry I & II, and Biochemistry)
- 3 semesters of **biology** (Information Flow in Biological Systems, Energy Flow in Biological Systems, and Genetics)
- At least 1 **additional class from biology, chemistry, or human physiology** (for example, an advanced animal physiology course from biology or human physiology, or an advanced biochemistry or molecular biology course from biology or chemistry)
- 2 semesters of general **physics**
- 2 semesters of **English** (a semester each of composition and literature)
- 1 semester each of introductory **sociology and psychology**
- 1 semester of **calculus or statistics** (math requirements vary widely among graduate and professional programs)

Most professional schools require relatively few classes, but strongly recommend a longer list of classes. We also advise students to exceed minimum admission requirements. For example, the University of Washington requires only one year each of biology and chemistry (both unspecified), but recommends students take Inorganic Chemistry (or general chemistry, 1-2 semesters), Organic Chemistry (2 semesters), Biochemistry, Introductory Biology (2 semesters), Animal Physiology (several courses taught at Gonzaga could meet this requirement) and Genetics. It is important to check the schools

you are interested in to determine their required and recommended classes. Professional schools also appreciate the increased knowledge base that comes from taking a diverse selection of courses in topics outside those that are required or recommended, so it is also strongly recommended that students take a broad course of study, with a combination of coursework in the social sciences, humanities, language, literature, and fine arts. Students should consult with their major advisor and the Committee on Health Science Careers (see below) to determine the courses necessary to best prepare them for their desired career track.

ADMISSION INTO HEALTH SCIENCES GRADUATE PROGRAMS

Students planning to study a health sciences field at the graduate or professional level must demonstrate the ability to achieve a consistent record of high academic performance while tackling a comprehensive and challenging curriculum. Medical school course loads are extremely heavy. The average load during the first year at many medical schools is 25 hours of instruction each week, compared to 16-18 hours for a typical undergraduate student.

Standardized admission tests are used to ensure that a high undergraduate GPA reflects thorough comprehension of course materials and not merely short term memory skills. These tests include the DAT for dental schools and the MCAT for medical schools, osteopathy, and select veterinary schools. Some veterinary schools require the GRE instead. In addition to scoring well on standardized tests, professional school candidates should incorporate complementary extracurricular activities into their schedules. Hands-on experience in a health-related setting is an important factor in professional school admission. This type of experience exposes students to the complex duties expected of today's health-care professionals. Spokane is a major medical technology center, with six hospitals and a variety of specialty clinics, and offers students numerous volunteer and internship opportunities.

Professional and graduate schools also take research into consideration. Students majoring in Biology, Chemistry, and Biochemistry at Gonzaga have excellent opportunities to participate in fascinating faculty research. Typically, about 45 students hold paid research assistantships every summer. These **research projects** often culminate in published results and presentations at regional or national meetings. Research experiences are also offered throughout the academic year for pay or for academic credit, particularly for Biology majors who are adding the **Research Concentration**. Science research at Gonzaga is funded in part from a grant received through the Howard Hughes Medical Institute. Students not majoring in the sciences can hone their research skills by arranging individual projects within their own academic disciplines.

Professional schools assess non-cognitive qualities through letters of recommendation and personal interviews. Although most graduate programs ask for individual letters of recommendation, the primary source of recommendation letters for professional schools is the **Committee on Health Science Careers**, a group of Gonzaga faculty members who provide advising assistance to students interested in health science careers. The Committee bases its assessments on conversations between students and faculty and a review of each student's overall record. Although academic performance plays a major role, personal qualities such as maturity, time management, resourcefulness, dependability, self-confidence, and compassion are also assessed. The Committee is able to write significantly stronger letters for students who are well known by the faculty. It is therefore essential that students make every effort during their college career to interact with faculty in their discipline, both in the classroom and through participating in extracurricular activities, such as research or teaching assistantships.

During the year when they are applying to professional schools, students seeking a **Committee recommendation letter** are required to submit to the Committee specific information about their academic and extracurricular achievements, a self-evaluation, their personal statement, letters of evaluation from faculty, and outside letters of reference. They must also attend a mock interview. Many professional schools attempt to confirm the content of recommendations by scheduling personal interviews with select candidates; thus, students greatly benefit from both the experience and feedback they receive from their mock interview with the Committee. Finally, professional schools repeatedly reject students who present strong academic records but lack maturity or have unclear motives for a health-related career. Therefore, students serious about health science careers need a sense of purpose and a high level of discipline from the outset.

THE COMMITTEE ON HEALTH SCIENCE CAREERS

Made up of professors from several academic departments, including Biology, Chemistry, Physics, Human Physiology, English, Sociology, and Psychology, the Committee on Health Science Careers provides guidance on classes, research, and internship opportunities to students. Under the supervision of their major advisor and the Committee, students are invited to attend mock interviews and workshops for writing personal statements for their graduate program applications. They also submit their personal statements for the Committee's review. Additionally, the Committee drafts most letters of recommendation for pre-medicine, pre-dental, and pre-veterinary students and provides practical, constructive advice to those seeking entrance to professional schools in the health sciences. The Committee stresses the importance of student initiative throughout the advisory and application process; it also highly encourages students to volunteer and become involved in social justice causes that they value, both to strengthen their candidacy as graduate and professional school applicants and for the personal growth that often accompanies these activities.

This work ethic is essential to obtain the necessary academic credentials and to earn the admiration of evaluators. Although some students attend professional schools immediately following the completion of their undergraduate degrees, it is common for students to enter these programs several years after graduating from college. In fact, the average age of all first-year medical students is typically 25. Gonzaga graduates often choose to work or volunteer with programs that include the Jesuit Volunteer Corps, AmeriCorps, the Peace Corps, and Teach for America before pursuing an advanced degree.

OUTCOMES

Both state-supported professional schools and private schools nationwide recognize the excellence of Gonzaga's health science studies. The admission rate of Gonzaga University graduates to medical school is typically around 60%, a rate that is generally double the national average. Dental school admission rates for Gonzaga graduates are typically about 80%.

Recent graduates have been accepted to the following schools:

Dental Schools

- Creighton University
- Harvard University
- Marquette University
- Oregon Health & Science University
- University of British Columbia
- University of California, Los Angeles
- University of Colorado
- University of Southern California
- University of Washington

Though fewer in number, students applying to veterinary school have also done quite well in the admission process in recent years. All recent applicants on record as having applied for veterinary studies programs following their graduation received offers of admission.

Medical Schools

- Baylor University
- Boston University
- Brown University
- Case Western Reserve University
- Creighton University
- Emory University
- Georgetown University
- Loyola University Chicago
- Mayo Medical School
- Medical College of Wisconsin
- Northwestern University
- Oregon Health & Science University
- St. Louis University
- Tulane University
- University of Colorado
- University of Hawaii
- University of Massachusetts Medical School
- University of Minnesota
- University of Nebraska
- University of Nevada, Reno
- University of North Carolina
- University of Southern California
- University of Utah
- University of Vermont
- University of Washington
- Vanderbilt University
- Wake Forest University

COMMITTEE FACULTY

Joey Haydock
Co-Chair, Committee on Health Science Careers
Ph.D., Purdue University
Biology Department
haydock@gonzaga.edu

Kevin Measor
Co-Chair, Committee on Health Science Careers
Ph.D., University of California, Riverside
Biology Department
measor@gonzaga.edu

Elizabeth Addis
Ph.D., University of Washinton
Biology Department
addis@gonzaga.edu

Kirk Anders
Ph.D., University of Wisconsin
Biology Department
anders@gonzaga.edu

Kylie Allen
Ph.D., Washington State University
Chemistry & Biochemistry Department
allenk2@gonzaga.edu

Erik Aver
Ph.D., University of Minnesota
Physics Department
aver@gonzaga.edu

Matthew Bahr
Ph.D., Purdue University
Sociology Department
bahr@gonzaga.edu

Betsy Bancroft
Ph.D., Oregon State University
Biology Department
bancroft@gonzaga.edu

Chase Bollig
Ph.D., Ohio State University
English Department
bollig@gonzaga.edu

Carla Bonilla
Ph.D., University of California, San Francisco
Biology Department
bonilla@gonzaga.edu

David Boose
Ph.D., University of California, Davis
Biology Department
boose@gonzaga.edu

Gary Chang
Ph.D., University of Washington
Biology Department
chang@gonzaga.edu

Matthew Cremeens
Ph.D., Cornell University
Chemistry & Biochemistry Department
cremeens@gonzaga.edu

William Ettinger
Ph.D., Washington State University
Biology Department
ettinger@gonzaga.edu

Osasere Evbuomwan
Ph.D., University of Texas at Dallas
Chemistry & Biochemistry Department
ettinger@gonzaga.edu

Masaomi Matsumoto
Ph.D., University of Oklahoma
Chemistry & Biochemistry Department
matsumoto@gonzaga.edu

Ryan McCulloch
Ph.D., University of North Carolina, Chapel Hill
Human Physiology Department
mcculloch@gonzaga.edu

James McKenzie
Ph.D., Indiana University
Human Physiology Department
mckenziej@gonzaga.edu

Anna Marie Medina
Ph.D., University of Southern California
Psychology Department
medina@gonzaga.edu

Marianne Poxleitner
Ph.D., Washington State University
Biology Department
poxleitner@gonzaga.edu

Michael Pringle
Ph.D., Washington State University
English Department
pringle@gonzaga.edu

Sarah Siegel
Ph.D., The Scripps Research Institute
Chemistry & Biochemistry Department
siegel@gonzaga.edu

Brook Swanson
Ph.D., Northern Arizona University
Biology Department
swansonb@gonzaga.edu

Jeff Watson
Ph.D., Purdue University
Chemistry & Biochemistry Department
watsonj@gonzaga.edu

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