

# College of Health Sciences



MARQUETTE  
UNIVERSITY

Be The Difference.

# THE SCIENCE THAT HEALS

What makes the human body work?

How can human suffering be alleviated through scientific discovery?

How can people improve their health?



## Undergraduate majors:

- Athletic Training
- Biomedical Sciences
- Clinical Laboratory Science
- Exercise Science
- Speech Pathology and Audiology

## Advanced degrees:

- Master's Degree in Physician Assistant Studies
- Master's Degree in Speech-Language Pathology
- Doctoral Program in Physical Therapy

**The College of Health Sciences** offers programs that provide answers to these questions, capturing the imaginations of students while exposing them to virtually endless possibilities. We prepare students for service to others in a wide variety of professions in both health care and health sciences. Graduates of our programs become physicians, researchers, therapists, dentists, laboratory specialists, exercise experts and others.

The majors and programs in our college have been designed to provide you with many career options. However, for students who want to specialize early or take a nontraditional path, a program can be tailored to meet your needs. And if going on to professional school is your goal, our programs provide a foundation of excellence that few can match.

Our distinctive programs are only part of the picture, however. Our faculty is stellar — devoted scholars, researchers and teachers steeped in academic as well as clinical knowledge. You'll be exposed to their cutting-edge research, too.

## CONTACT US

For more information about Marquette University's College of Health Sciences and its programs, contact the dean's office at (414) 288-5053, visit our Web site at [www.marquette.edu/chs](http://www.marquette.edu/chs), or write to:

College of Health Sciences  
Marquette University  
P.O. Box 1881  
Milwaukee, Wis. 53201-1881

*"I loved my experience in the College of Health Sciences. Everyone is compassionate and truly cares about their students."*

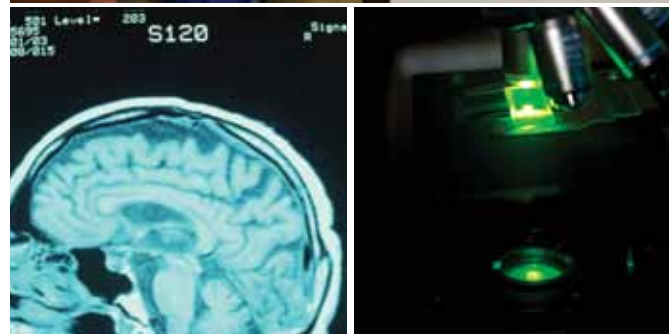
— **Veronica Haywood**,  
physical therapy major

# Biomedical Sciences

*The largest declared major at Marquette University*, the biomedical sciences program is geared toward human sciences that underlie medicine and the health professions. You'll get a complete inside look at the human body in gross anatomy class, examine key molecular structures in biochemistry class and learn how they all work together in a comprehensive physiology course. You'll then learn how these elements can malfunction (in pathology class), as well as how diseases are treated (in courses in pharmacology and molecular pathology). Most importantly, you'll learn to apply this knowledge to critical problem-solving situations that are at the heart of this program of study.

Most of our students go on to professional or post-graduate education — becoming physicians, dentists, pharmacists, optometrists, physician assistants, physical therapists and biomedical researchers. Other students pursue careers in the health care industry where their knowledge of the biomedical sciences provides a competitive edge.

Marquette has a strong commitment to promoting and supporting biomedical research. Many new discoveries are coming out of the research that takes place here — developments that have the potential to increase the understanding of human health issues and produce treatments. Working alongside professors in their laboratories, students are exposed firsthand to research findings that may show up in textbooks a few years down the road.



# 1

*Biomedical sciences is the largest declared major on Marquette's campus — and one of only six such programs nationally.*

#### Here's some of what our faculty researchers are studying:

- Brain mechanisms involved in drug craving and relapse in addicts
- Hormones secreted with exposure to stressful stimuli and how they can lead to illness
- Proteins that reveal how alcohol acts on the central nervous system at the molecular level
- The body's regulation of food intake and energy metabolism
- Mechanisms of neurodegeneration involved in stroke, Parkinson's and Alzheimer's diseases.



### The Marquette Advantage

**Pre-medical Studies in Biomedical Sciences.** Many Marquette students find this major to be a natural fit for their desire to study medicine. Our graduates are accepted to medical schools at rates that well exceed the national average. Once there, virtually all of our grads cite the competitive advantage provided by their strong background in the biomedical sciences.

**Pre-dental Scholars Program.** Students in this accelerated program receive their undergraduate degrees with conditional acceptance to Marquette University's School of Dentistry, the only dental school in Wisconsin. Pre-dental scholars may major in biomedical sciences, completing the undergraduate portion in just three years, and in year four take courses that count toward both their bachelor's and professional dental degrees. Instead of the normal eight required years, pre-dental scholars get both degrees in seven.

**Biomedical Sciences Summer Research Program.** This intensive, 10-week full-time program gives students an opportunity to work with faculty on current medical research topics.



# Clinical Laboratory Science



# 100%

*of clinical laboratory science graduates are employed in the profession following graduation.*

### *The practice of modern medicine depends on the professionals*

who perform laboratory testing 24/7. Between 70 and 80 percent of all diagnostic information used by physicians results from tests performed by the clinical laboratory scientist. Clinical laboratory scientists are trained to perform scientific evaluation and interpretation, recognize normal and abnormal significances, and utilize critical thinking to help answer the question: “What is causing this disease?”

In Marquette’s state-of-the-art classrooms, clinical laboratory science students learn on all the latest — and classic — equipment used in modern labs. Because interdisciplinary teams perform the work in diagnostic labs, our students learn using the teamwork concept.

In our four-year program, you’ll start by taking general chemistry and biology courses, then jump right into clinically-based coursework your sophomore year. By the time you’re a senior, you’ll perform more comprehensive testing in microbiology, chemistry, coagulation, hematology and transfusion medicine. You’ll also work at a clinical site for six months.

By the time you graduate, you will have experienced the highest levels of diagnostic testing and be prepared for virtually any job challenge.

There is a critical shortage of clinical laboratory scientists nationwide, so many Marquette students have jobs lined up before they graduate. In addition to working as a laboratory scientist, career opportunities include sales, technical support, supervisory positions and service engineering.

### **Where our graduates go**

Nearly all of our graduates are employed in the field before graduation. Many take positions in clinical, hospital and research laboratories. This major is also excellent preparation for medical and graduate school. Admission rates for our graduates are traditionally quite healthy: 70 percent for medical school, 88 percent for graduate school and 100 percent for law and dental school.

### **Our graduates also work in:**

- Research and product development
- Insurance underwriting
- Forensic medicine
- Food, cosmetic and consumer-product testing labs
- Medical-product sales and marketing
- Pharmaceuticals



*Every week, I can’t wait to go to the lab.*

— **Phyu Thwe**,  
clinical laboratory  
science major

Phyu Thwe was so impressed by Marquette’s College of Health Sciences that she moved 8,000 miles from her home in Burma to study here. She found her niche in the Department of Clinical Laboratory Science. “It’s hard to find a school that offers a CLS major,” she says. “Luckily, I found out Marquette has a great program in CLS and a great reputation in health sciences programs in general.” Her favorite class is Medical Bacteriology, especially the labs. She enjoys deciphering a diagnosis based on test results and information from the physician. “It’s like solving a puzzle, and I love it,” she says.

### **The Marquette Advantage**

Marquette’s national certification exam pass rate for clinical laboratory science is 99 percent, compared to the national rate of 80 percent.

Students admitted to the major are guaranteed clinical placement, which is essential for certification.

High school juniors and seniors attend our Young Scholar Program to explore clinical lab science. The program runs during three Saturdays each fall.

All major courses are taught by certified laboratory professionals.



# Athletic Training



*A blend of humanities, social sciences and basic and clinical sciences*, our athletic training program delivers a body of knowledge aimed at preventing, evaluating, managing and rehabilitating athletic injuries. You'll also learn current practices and trends from faculty who have worked as athletic trainers themselves.

By the end of your sophomore year, you'll begin working in the field alongside clinical instructors, gaining real-world experience.

As a senior, you'll work directly with high school, inter-collegiate and professional athletes, gaining exposure to contact injuries and adding to your practical experience.

Majoring in athletic training is also a great foundation for Marquette's doctoral physical therapy program, where both degrees can be earned in six years. Eighty-four percent of Marquette graduates pass the national athletic training certification exam the first time, compared to the national average of 50 percent.

# Exercise Science



*Marquette's exercise science program prepares you for a career in wellness*, exercise programming and fitness training, with a twist — you'll get more clinical and rehabilitation training than most other programs. Our program also provides excellent preparation for professional and graduate studies in exercise science, physical therapy and many other areas.

Classes are designed around small groups and labs with hands-on instruction. You'll learn the theories of exercise science, as well as how to set them in motion and master technical skills and exercise prescription.

Our faculty experts not only teach from books — they also conduct some of the hottest research in the field. They work alongside you in labs — showing, not just telling.

Much of our program is steeped in pre-physical therapy coursework. That's why so many Marquette exercise science majors choose to enroll in our doctoral physical therapy program.

# 100%

*of Marquette's athletic training majors are accepted into graduate and professional programs.*



# 94%

*of Marquette's exercise science majors are accepted into professional and graduate programs.*

## Where Our Graduates Go

70 percent of our graduates go on to pursue master's degrees or doctoral degrees in physical therapy.

Athletic trainers assist professional and amateur athletes and other active people to help them work at peak performance while preventing injury.

Marquette athletic training graduates are employed at fitness clubs, industrial corporate fitness centers, and sports clinics for high school and college athletes as well as amateur and professional teams.



## The Marquette Advantage

Earn your four-year degree in exercise science and become an exercise instructor, personal trainer, cardiopulmonary rehabilitation professional or strength and conditioning specialist.

Take the pre-professional track: Use your exercise science degree as a foundation for graduate and professional education in physical therapy, sports medicine, occupational therapy, anatomy, kinesiology and exercise physiology.

Earn your bachelor's degree in exercise science and your doctoral physical therapy degree at the same time by enrolling as a direct-admit student in our six-year DPT program (space is limited).

# Speech Pathology and Audiology

The ability to communicate is our most human characteristic, essential to learning, working and social interaction. Impaired communication can affect every aspect of a person's life. Speech-language pathologists and audiologists help people to improve their ability to communicate and increase their quality of life. And there's a great demand for their expertise: the U.S. Bureau of Labor Statistics reports that by 2010, speech-language pathology and audiology positions will increase by 50 percent.

Marquette's speech pathology and audiology program prepares students for both clinic and school settings — in state-of-the-art teaching, clinical and research labs. Although there are career options with a four-year degree, a graduate degree is required for professional practice as a speech-language pathologist or audiologist. Undergraduates can apply for early admission into our graduate program, taking credits that can be applied to both undergraduate and graduate work — and getting out of graduate school a little sooner.



*I want to be able to change someone's life with the gift of sound, just like I have been given the gift of sound.*

— Kelley Corcoran, speech pathology and audiology major

# 98%

*of students in our graduate program pass the specialty examination in speech and language pathology on their first try — one of the highest rates in the nation!*



## The Marquette Advantage

Our on-site clinic enables undergraduate students majoring in speech pathology and audiology to gain clinical experience treating individuals with speech/language/hearing deficits.

More than 85 percent of our undergraduates who apply to graduate school are accepted into graduate programs, in all the top programs — including Marquette's.

Marquette's proximity to large Spanish-speaking populations positions us well for our bilingual English-Spanish certificate, which is part of our graduate program. There's no other program like it in the Midwest.

Kelley Corcoran's fascination with the audiology field is understandable: She wears a cochlear implant for her own hearing impairment. She decided Marquette's respected speech pathology and audiology program was the perfect place to pursue her ambitions. "What I love about this field is that an audiologist has the ability to significantly change someone's life by giving them the ability to hear more than they could before," she says. "My cochlear implant completely changed my life. It opened my eyes to a whole world of possibilities for me. I decided to become an audiologist because I want to be able to help someone else realize their potential and what they can achieve."

# Physical Therapy Professional program

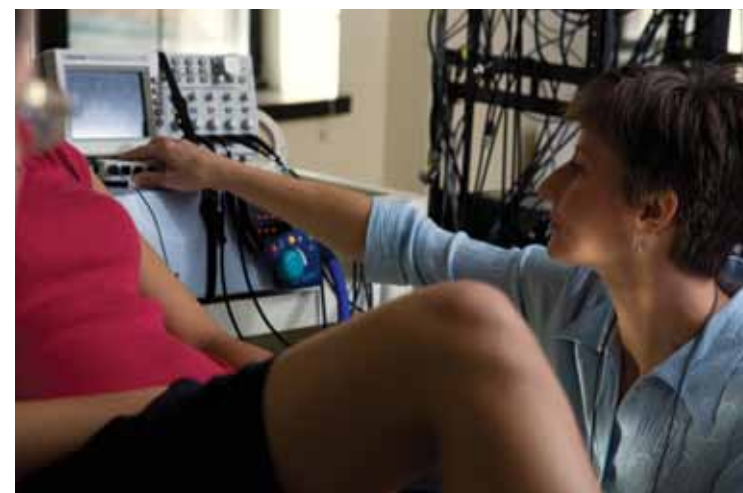
*Physical therapists work with everyone* from newborns in intensive care units, to athletes with injuries, to geriatric patients with arthritis.

Using exercise, gait training and physical modalities — like heat, ice packs and massage — physical therapists are exercise and body mechanics experts who work to help patients restore normal movement and improve their health.

Marquette's six-year physical therapy doctoral program consists of a three-year pre-professional phase and a three-year professional phase. Students learn on the latest equipment and participate in a total of 30 weeks of clinical internships — working in hospitals and clinics across the country.

A distinctive feature of Marquette's admissions policy is the opportunity for select high school seniors to receive direct admission into the DPT program as freshmen. (Separate admission to the professional phase of the program is also available on a limited basis.)

One clear reason for the success of our DPT program: our stellar faculty. For example, Professor Don Neumann has written the industry standard textbook on kinesiology, and Professor Emeritus Luther Kloth is a world-renowned wound-healing expert.



# 19

*Ranking of Marquette's physical therapy program among 210 nationally*

## The Marquette Advantage

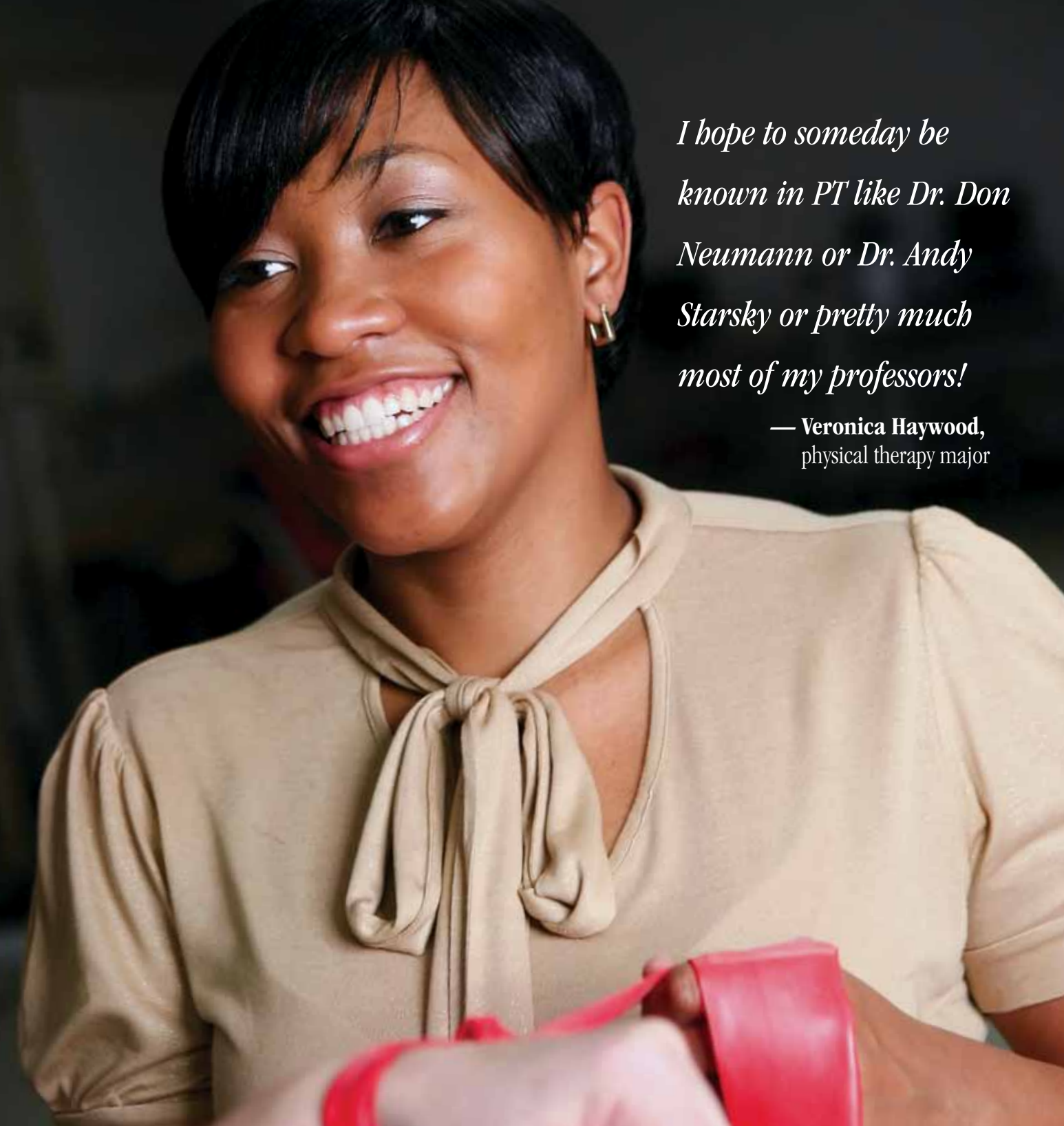
Marquette's physical therapy program was recently ranked 19th in the nation by *U.S. News & World Report*.

Marquette's award-winning PT faculty and students have garnered 37 national awards from the American Physical Therapy Association since 1990 in the vital areas of teaching, research, service, clinical practice and student scholarship.

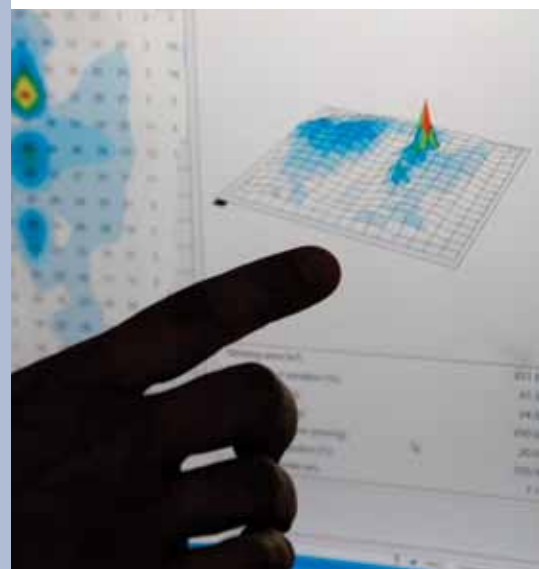
Our Health Careers Opportunity Program provides career exploration, science enrichment and retention services to disadvantaged students interested in health professions. More than 500 health care professionals have graduated from this program. The American Physical Therapy Association has awarded Marquette University eight national awards for diversity.

*I hope to someday be known in PT like Dr. Don Neumann or Dr. Andy Starsky or pretty much most of my professors!*

— Veronica Haywood,  
physical therapy major



Veronica Haywood watched a physical therapist help her father recover from a traumatic injury. Then in high school, after a car accident, she found herself in the physical therapist's office. She decided then that she wanted to develop the expertise that had so helped her own family. "I love the compassion and time that one can spend with patients. Most other health care professionals see their patients for maybe 20 minutes every once in awhile, but PTs get to see their patients between one to six days a week," she says. Veronica hopes eventually to earn her doctorate so that she can teach and publish research. She already has a byline: She's a featured student blogger for *ADVANCE for PT*, a national trade publication.





*Physician assistants (also known as PAs)* are health care professionals licensed to practice medicine with physician supervision. As part of their comprehensive responsibilities, physician assistants conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery and write prescriptions. Within the physician-PA relationship, physician assistants exercise autonomy in medical decision-making and provide a broad range of diagnostic and therapeutic services. Their practice may also include education, research and administrative services.

The U.S. Bureau of Labor Statistics ranks the PA field as the third-fastest growing profession through 2012. Physician assistants earn average annual salaries of more than \$85,000, with new graduates reporting average starting salaries of more than \$74,000.

Selected undergraduate students in Marquette's physician assistant studies program can earn a bachelor's degree in biomedical sciences and a master's degree in physician assistant studies in a total of just five years. During the freshman and sophomore years, students complete "Pre-PA" basic natural science coursework along with the university's core curriculum. They can then apply for the three-year professional program during their sophomore year, and selected students start the professional phase fall semester of their junior year.

Students already holding an undergraduate degree may apply directly into the three-year professional program and earn a master's degree in physician assistant studies.

Marquette's PA program is well connected within the community's major health care systems. In the final year of training, students do hospital and clinical rotations in surgery, internal medicine, family practice, pediatrics, emergency medicine and other specialty disciplines working with an assigned physician or physician assistant. Students may also select an international clinical rotation in Belize and work in culturally rich remote areas.

# 5

*Money magazine ranks the PA profession as the 5th best job in America based on salary, growth and job satisfaction.*



## The Marquette Advantage

Graduates from Marquette's physician assistant program have consistently performed higher than the national average on the physician assistant national certifying exam. Marquette graduates have a 97- to 100-percent pass rate with scores in the top 90th percentile nationwide.



*I've been in the College of Health Sciences for six years now, and I don't regret one of them. The college has afforded me many really awesome opportunities.*

— **Ryan Fulcer**, physician assistant studies major

National Guard member Ryan Fulcer was finishing his senior year when he was deployed to Iraq. While overseas, he decided to switch his focus from physical therapy to physician assistant studies. "I love the absolute limitless opportunities the field has to offer," he says. "And as mid-level health care providers, we're offering a crucial service to help mitigate the shortage of physicians." Now he plans to put his Marquette training to use as an Army medical officer. "Where I wind up in the world and what aspect of medicine I'm going to be a part of remains to be seen," he says. "I'm up for anything."

# Commitment to Service



College of Health Sciences students and faculty live out the Marquette mission every day. Here are just some of the ways the college serves our local — and global — community.

**Marquette PT Challenge:** What began more than 20 years ago as a grass-roots student activity has since developed into a national initiative that has raised more than \$1.2 million for physical therapy research. Every year, Marquette's physical therapy students challenge their counterparts at 50-plus schools around the nation to see who can raise the most money for the Foundation of Physical Therapy. The Marquette Challenge has become one of the foundation's largest revenue sources.



**Marquette Speech and Hearing Clinic:** The clinic is a critical, low-cost resource for many in the community, and it serves approximately 100 adults and children every semester. Students and faculty use a variety of tools to help patients, ranging from a book club for adults with aphasia to an Integrated Therapy Room that makes therapy fun for children with special needs.

**Global Medical Brigades:** Twice a year, Marquette students and faculty spend a week in rural, poverty-stricken Honduras. They come armed with medical professionals, suitcases full of donated medicine and boundless enthusiasm, often serving 2,000 patients in just a few days.

**Wisconsin Reading Acquisition Program:** With the help of a \$4 million grant, students and faculty from the Department of Speech Pathology and Audiology are helping improve the literacy skills of at-risk, low-income preschoolers in Milwaukee.

## Get involved

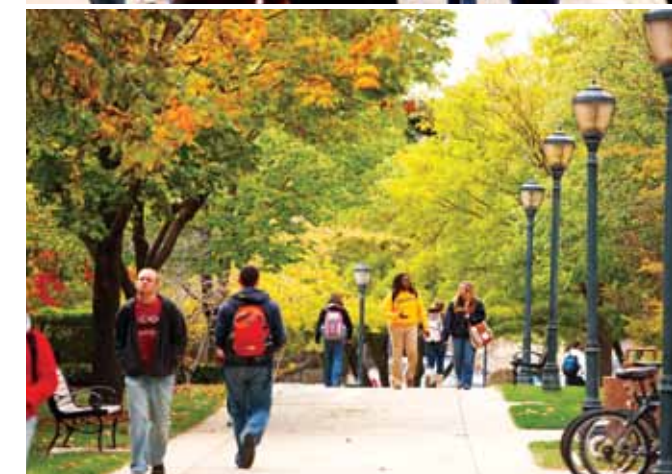
With about 250 student organizations on campus, Marquette students keep plenty busy. Students in the College of Health Sciences enhance their studies and beef up their résumés through the following clubs and groups:

- Alpha Epsilon Delta (honor society for pre-medical and pre-dental students)
- American Medical Student Association
- Biomedical Sciences Student Association
- Clinical Lab Science Student Council
- College of Health Sciences Student Council
- Exercise Science and Athletic Training Student Association
- Global Medical Brigades
- National Student Speech, Language and Hearing Association
- Physical Therapy Student Council
- Pre-Health Society
- Student Advocates for Health and Human Dignity
- Student Association of Physician Assistants

## Interested in Marquette and the College of Health Sciences?

Here are some next steps you can take:

- Visit [www.marquette.edu](http://www.marquette.edu) and click on "Admissions" for an online application and information about applying to Marquette
- Go to the College of Health Sciences Web site at [www.marquette.edu/chs](http://www.marquette.edu/chs) and click on "Departments" for more information on each major
- Call Marquette's Office of Admissions at (800) 222-6544 to arrange a one-on-one meeting or campus tour
- Call the College of Health Sciences dean's office at (414) 288-5053 to arrange a college tour and meet with faculty and advisers





Walter Schroeder Health Sciences  
and Education Complex



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