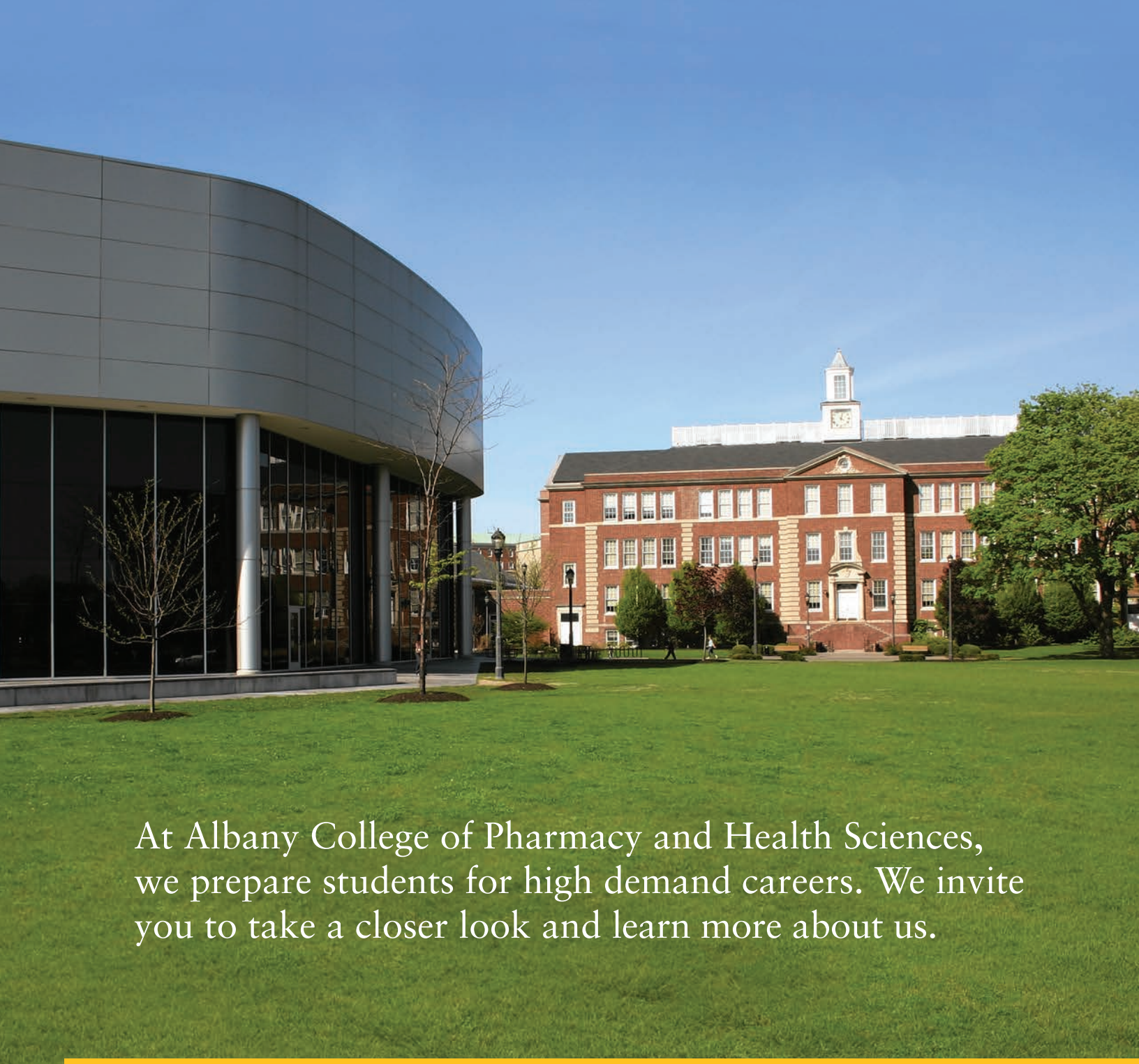
# Albany College
## of Pharmacy and Health Sciences

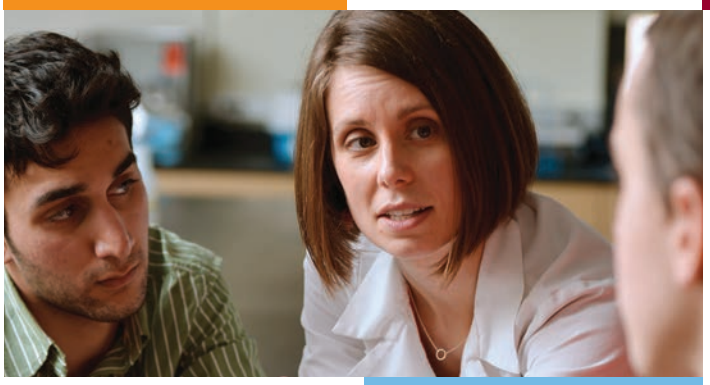


At Albany College of Pharmacy and Health Sciences, we prepare students for high demand careers. We invite you to take a closer look and learn more about us.

ADMISSIONS

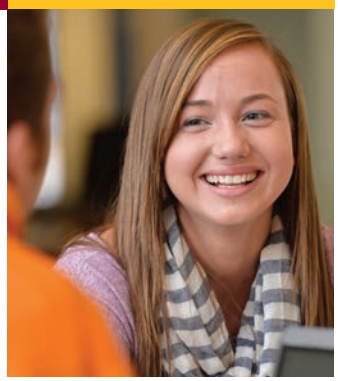
ACADEMICS

STUDENT LIFE



## FOCUS

Each of the College's programs offer distinct, but interconnected, paths for an education in health care. These include: the Doctor of Pharmacy degree; 5-year joint bachelor's and master's degrees in Biomedical Technology/Cytotechnology and Molecular Cytology and Pharmaceutical Sciences; and bachelor's degrees in Biomedical Technology, Chemistry, Clinical Laboratory Sciences, Health and Human Sciences, Microbiology, and Pharmaceutical Sciences. We also have master's degree programs in Cytotechnology and Molecular Cytology, Pharmaceutical Sciences, Health Outcomes Research, Molecular Biosciences and Clinical Laboratory Sciences.



## FLOURISH

ACPHS has a wide variety of clubs, organizations and athletic programs to engage your interests outside of class. The city of Albany and the surrounding region provide additional opportunities for enrichment and entertainment. You will also be encouraged to participate in a variety of global opportunities to enhance your college experience.

## FACILITIES

Our state-of-the-art Pharmaceutical Research Institute, modern laboratories and a robust IT infrastructure provide an environment vital to your academic success.Within our contemporary Student Center, dining facilities, and campus residence halls, you'll find a truly engaging and supportive campus community.

RESEARCH

## FACULTY

Pharm.D.s, Ph.D.s, M.D.s, M.B.A.s. Our faculty are knowledgeable about the topics they teach and are often among the leading experts in their areas of study. When they're not in the classroom, they can often be found preparing their research for publication, delivering presentations at industry conferences or supervising students in a variety of health care settings.

FINANCIAL AID

VISITING CAMPUS

# Student Life

Our students work hard and play hard. We are proud that our student body is comprised of academically strong and motivated individuals. And just as importantly, each student brings her or his unique interests and background to our College, resulting in a diverse community that enriches everyone's experience on campus.

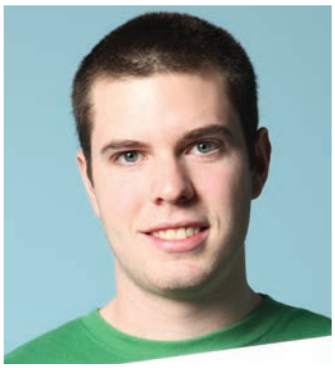




FUN
FLAT BROKE &
FAB
ULOUS


TECHNO


Music
Prodigy



## Albany Campus

Our campus is located adjacent to three area colleges—The Sage Colleges, Albany Medical College and Albany Law School—providing a strong academic setting and a vibrant social community.

## Vermont Campus

Our Vermont campus is located just outside of Burlington, a thriving, energetic city that attracts young professionals from throughout the country.

# Residence Life

Approximately 700 students—about half of the student body—live on the Albany campus. Living on campus is required for the first two years and optional in years three and above.

The campus residence facilities, South Hall, Notre Dame Hall and Holland/Princeton Suites, offer a variety of amenities such as wireless and hard-wired internet service, cable television, free laundry facilities, and are secured with electronic access doors and 24-hour monitored security.

South Hall has two-, three- and four-person rooms each with its own bathroom and climate control.

Notre Dame Hall features suite-style living, each with a common area, five single bedrooms and one corner bedroom, which is double in size and accommodates two residents.

Holland/Princeton Suites provide upper-class students with apartment-style living. These completely furnished units offer the safety and security of a residence hall, yet provide more independence.

ACPHS students in years three and above may also choose to live in off-campus apartments, including University Heights College Suites located steps from campus.

## DINING SERVICES

With brands such as Tim Hortons and Cold Stone Creamery, plus made-to-order salads, burgers, sandwiches and more, you can be assured there is always something to suit your taste. If you are looking for a change of pace, you can also use a portion of your meal plan dollars at selected restaurants and businesses near the College.


## INFORMATION TECHNOLOGY SERVICES

ACPHS has the highest level of Wi-Fi service available, ensuring hassle-free online access in the classroom, study areas and beyond. The College requires all new undergraduate students to have a laptop. Students who purchase through the NYS purchasing program receive their brand new machines pre-loaded with the software needed for coursework and specially configured for easy connection to the ACPHS network. Additional benefits of the ACPHS Laptop Program include the ability to purchase a top of the line machine at a deeply discounted price, assistance from the on-campus IT Support Center and free access to loaners if your computer needs to be kept for repairs. Students may also choose to purchase a laptop from the vendor of their choice.

# Academic Success

The College offers a campus-wide system to support student learning and success. Upon your arrival at ACPHS, you will be assigned an academic advisor, who is a faculty member that will help guide you through your academic career. You will be required to meet with your academic advisor at least once a semester to discuss matters such as course selection, research, and career and leadership opportunities.

As a first year student, you will also be assigned a professional advisor who can assist with specific first-year student needs, such as successfully transitioning to the ACPHS community and learning the skills needed for academic success.

The College also offers a number of services and resources through the Division of Student Affairs to further assist students. These include:

- **Academic Advising**
- **Career Services**
- **Peer Tutoring/Mentoring**
- **Science Assistance Center**
- **Writing Center**

# Athletics

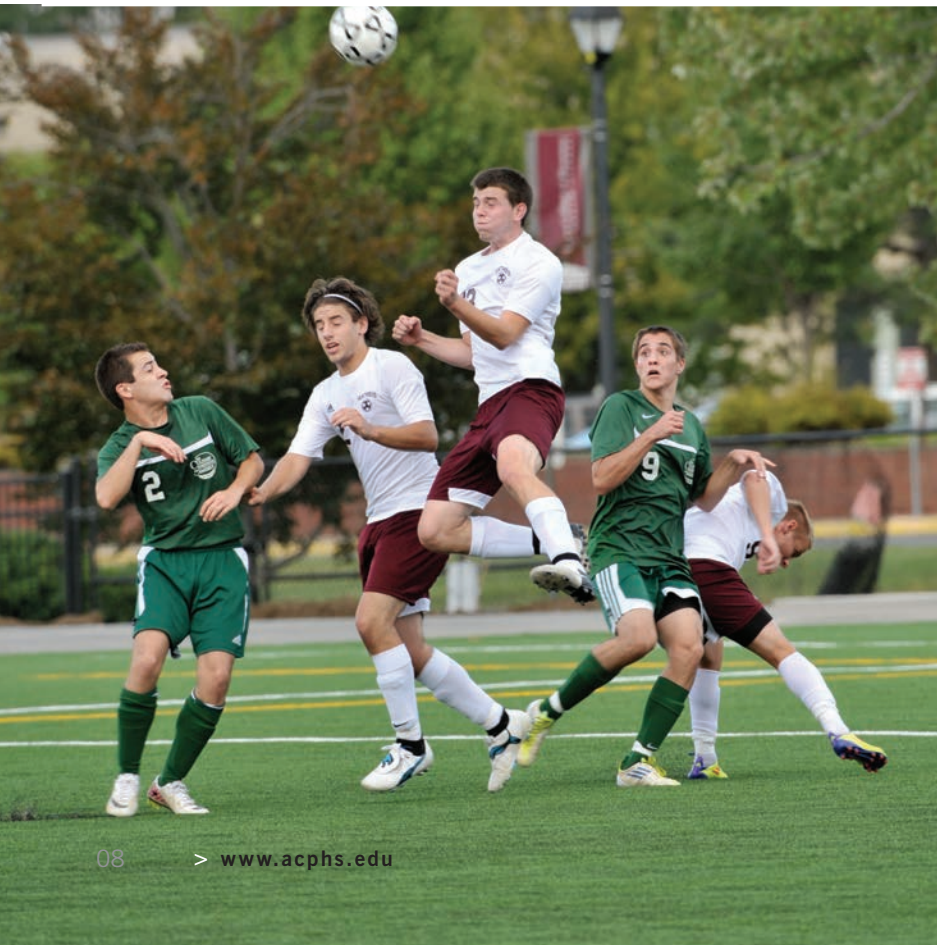
**INTERCOLLEGIATE ATHLETICS**

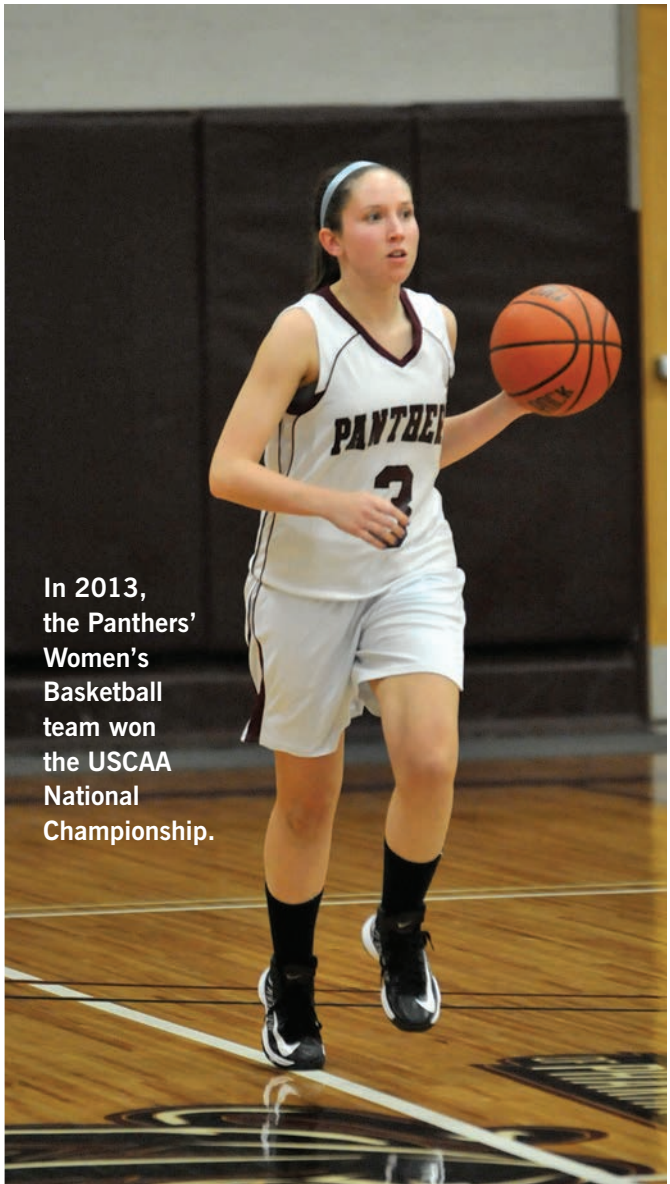
Our men's and women's intercollegiate soccer, basketball, cross country and track and field teams compete in the Hudson Valley Intercollegiate Athletic Conference (HVIAC). The College also competes nationally as a member of the United States Collegiate Athletic Association (USCAA).

**INTRAMURAL AND CLUB SPORTS**

Basketball
Equestrian Club
Golf Club
Lacrosse Club
Ski and Snowboard Club
Tennis Club
Ultimate Frisbee Club
Volleyball

**All students have access to the College's fitness center, outdoor track and gymnasium. The fitness center includes free weights, strength machines, cardio equipment and a dance/aerobics room.**





In 2013, the Panthers' Women's Basketball team won the USCAA National Championship.


ALBANY COLLEGE
PHARMACY AND HEALTH SCIENCES
1
WARDE XC INVITE


PANTHERS
Wilson


10
YESHIVA

# Clubs and Organizations

To satisfy your unique blend of interests and experiences and provide life-learning you can't get from a textbook, the College offers the following:

**CLUBS AND ACTIVITIES**

African Student Association
Amnesty International
*Another Creative Perspective* (literary magazine)
Biomedical Technology
Colleges Against Cancer
Craft and Quilt Guild
Dance Club
Hip-Hop Culture Club
IntraFraternity Council (IFC)
Multi-Cultural Club
Orthodox Christian Student Association
Outdoors Club
Peer Connections
Service Club
Students in Performing Arts and Health Care (SPAHC)
Student Government Association (SGA)
Student Newspaper
Yearbook

**PROFESSIONAL ORGANIZATIONS**

American Association of Pharmaceutical Scientists
American College of Clinical Pharmacy
American Pharmacists Association–Academy of Student Pharmacists (APhA-ASP)
Association of Managed Care Pharmacy
Student Pharmaceutical Society of the State of New York (APS-SPSSNY)
Student Society of Health System Pharmacists (ACPHS-SSHP)

**FRATERNITIES**

Phi Delta Chi
Phi Lambda Sigma
Rho Pi Phi
Rho Chi

**OUTDOORS CLUB**

**Each year, members engage in white water rafting, biking, snowshoeing, camping, rock climbing, and other interesting outdoor activities including an annual trip to a warm weather destination during the winter break.**

**MULTI-CULTURAL CLUB**

**Open to all students interested in learning about different cultures, this club arranges trips to ethnic neighborhoods, restaurants, movies, and arranges an International Bazaar and Food Festival. Approximately 10% of ACPHS students are from outside the United States.**

**RHO CHI**

**After six semesters, pharmacy students in the top fifth of their class with at least an 85 average are eligible for membership in this prestigious national honor society. The College's Gamma Gamma chapter, which organizes a range of campus and community service activities, has received the National Chapter Achievement Award twice in recent years, beating out nearly 90 chapters each time for the honor.**



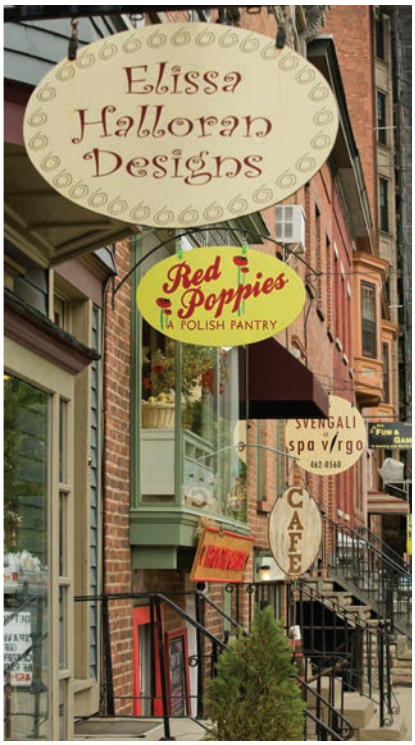

# Community Service

Albany College of Pharmacy and Health Sciences believes that an institution of higher learning has a responsibility to the community outside its campus borders. The College works with a number of community and youth organizations where ACPHS students lend their time and talents to helping others while enriching their own education.

- **ACPHS Academy**—an after-school math and science program for students in third grade and up.
- **Summer Enrichment Program** combines research, instructional activities and tours of regional pharmaceutical and biotech companies for area high school students.
- **America Reads/Counts Program** provides tutors in reading and mathematics to students from nearby schools.
- **Annual Health and Wellness Expo**
- **Relay for Life Cancer Fundraiser**

ACPHS students also provide volunteer work and support for the American Red Cross, Boys and Girls Clubs, Great American Smokeout, Make a Wish Foundation, March of Dimes, Meals on Wheels, National Kidney Foundation, Ronald McDonald House, St. Jude's Children's Hospital, Toys for Tots, and more.

**ACPHS was named to the 2013 President's Higher Education Community Service Honor Roll. This designation is the highest honor a college or university can receive for its commitment to volunteering, service-learning, and civic engagement.**



## The Capital Region of New York

The Capital Region, comprised of Albany, Troy, Schenectady and Saratoga Springs, is home to a population of nearly 800,000, including more than 60,000 college students. The area's rich history, arts and culture offers the advantages of a major metropolitan area while maintaining the qualities of a small community. Students are encouraged to explore the region, including some of our favorite destinations:

**Lark Street Neighborhood**
Less than two miles from campus, Lark Street is the destination for entertainment, culture and urban life in Albany.

**Washington Park**
Just minutes from campus, this 90-acre park with its 5.2-acre lake, offers a scenic diversion for city dwellers. An Albany landmark for over 100 years, it is home to the annual Tulip Festival, Park Playhouse (summer theater), Latin Festival and Capital Holiday Lights.

**Arts, Culture and Sports**
The Times Union Center hosts a wide range of music acts like the Dave Matthews Band and Kenny Chesney, as well as college sports like NCAA Sweet Sixteen and Frozen Four. It also serves as home to the Albany Devils AHL hockey franchise. The Palace Theater hosts events ranging from concerts to ballet to classic films. Capital Repertory Theatre offers a range of musicals, dramas and comedies in a more intimate setting. "The Egg" at the Empire State Plaza hosts music, dance, theater and special attractions. To the north, the Saratoga Performing Arts Center (SPAC), an outdoor amphitheater, brings in acts like Phish and Maroon 5. It also serves as the summer home of the New York City Ballet.

**Outdoor Recreation**
New York's Adirondack Park, with its six million acres of hiking, paddling, and winter recreation, lies just 45 minutes north. Closer to campus along the Hudson River is the Corning Trail, a five-mile path ideal for biking, running and roller blading. And less than two miles from campus is Capital Hills Golf Course where you can play a round of golf for less than 20 dollars.

## Burlington, Vermont

Just outside Colchester is the City of Burlington, an eclectic, historic area with a modern atmosphere. Home to great restaurants, shopping, and outdoor recreation, students are never at a loss for something fun or entertaining to do. Some of their favorite spots include:

**Church Street Marketplace**
This award-winning open air mall is a common gathering place for students. Known for great food and shopping, the bustling downtown area also hosts a variety of events throughout the year, including food cart Wednesdays, outdoor yoga, and live musicians. For those visiting the area—it's a must-see!


**Beaches, Parks, and Trails**
Burlington is a year-round hotspot for lovers of the outdoors. With beaches, marinas, and camping, the warmer months offer students a getaway just around the corner. Plus, three bike paths, over a dozen parks, and three trails offer additional recreational opportunities for everyone.

**Winter in Burlington**
Skiing and winter sports are nearly synonymous when you hear "Vermont." You don't have to look far to find beautiful, snowy mountains for downhill and cross-country skiing, snowboarding, and snowshoeing.

**Uniquely Vermont**
Just outside of Burlington you'll find the opportunity to see how some of our favorite products come to be. Take a Ben and Jerry's factory tour, do some taste-testing at the Cabot cheese factory, or take a walk through the Vermont Teddy Bear Factory.

## ACPHS Around the Globe

Our students and faculty are actively engaged in coursework, research, and experiential education in countries throughout the world, a list that includes:

- Argentina
- Belize
- Cambodia
- China
- Dominica
- India
- Japan
- Kenya
- Nigeria
- Peru
- Senegal
- Spain
- Switzerland
- Vietnam

All students are encouraged to pursue a global experience while attending ACPHS. Whether you have a scholarly interest or prefer an international adventure with our Outdoors Club, we will work with you to find a global experience that furthers your understanding of the world.

# Albany College of Pharmacy and Health Sciences
## Degree Programs

| | B.S. IN BIOMEDICAL TECHNOLOGY | B.S. IN CHEMISTRY | B.S. IN CLINICAL LABORATORY SCIENCES |
|---|---|---|---|
| Ideal for students interested in > | > understanding the workings of the human body<br>> investigating the origin and progression of human disease<br>> obtaining an excellent background to pursue advanced education in healthcare | > applying chemical concepts to the design and synthesis of new drugs<br>> understanding the physical and chemical properties of medication<br>> studying the molecular mechanisms of drug activity, resistance, and synergism | > investigating the cause of human disease<br>> performing sophisticated diagnostic laboratory testing for patient care<br>> assisting health care providers to determine the appropriate testing for diagnosis |
| Key coursework > | > Clinical Anatomy<br>> Human Pathology<br>> Molecular Genetics and Genomics<br>> Clinical Microbiology | > Medicinal Chemistry<br>> Analytical Chemistry<br>> Organic Synthesis | > Clinical Hematology<br>> Clinical Immunology<br>> Clinical Microbiology<br>> Biochemistry<br>> Clinical Chemistry |
| After graduation > | > enter into MS programs in Physician Assistant Studies<br>> work in the biomedical industry in development, sales or service<br>> work as a research assistant in biomedical research<br>> pursue graduate degree or professional program | > work in the pharmaceutical or biomedical industries<br>> educate future scientists on the secondary or post-secondary level<br>> pursue graduate degree or professional program | > work in a clinical laboratory performing laboratory testing<br>> work in food, veterinary, or pharmaceutical industries<br>> pursue graduate degree or professional program |

| B.S. IN HEALTH AND HUMAN SCIENCES | B.S. IN MICROBIOLOGY | B.S. IN PHARMACEUTICAL SCIENCES | DOCTOR OF PHARMACY |
|---|---|---|---|
| > studying liberal arts with a focus on health<br>> understanding how social and cultural issues impact health and health care<br>> understanding public health and the relationship between health and the social world | > detecting and studying the microbes that cause disease<br>> developing vaccines and treatments for new and emerging diseases<br>> maintaining quality standards for food, water, and drugs | > conducting research on new drugs or medications<br>> discovering underlying causes of disease<br>> working side-by-side with researchers in a variety of medical fields | > becoming an expert on the use of medications, supplements and natural products<br>> interacting with patients<br>> being a frontline member of the health care team |
| > Public Health<br>> Health Communication<br>> Medical Sociology<br>> Epidemiology<br>> Health and Human Sciences Capstone Experience | > Microbial Genetics<br>> Virology<br>> Bacterial Pathogenesis<br>> Microbiology Capstone<br>> Topics in Infectious Disease | > Pharmaceutical Analytical Techniques<br>> Scientific Communication<br>> Independent Research Project | > Pharmacy Skills Lab<br>> Pathophysiology<br>> Pharmacokinetics |
| > work in public health<br>> work in a government agency<br>> work for a non-profit organization<br>> work as a research assistant in an academic or private sector setting<br>> pursue graduate degree or professional program | > work as research technician in an academic or industrial laboratory<br>> work as an epidemi-ologist for local or federal agencies<br>> pursue graduate degree or professional program | > work as a scientist in biomedical or pharma-ceutical laboratories<br>> work in sales or management for a pharmaceutical company<br>> pursue graduate degree or professional program | > work as a community or hospital pharmacist<br>> pursue a pharmacy residency or fellowship<br>> conduct pharmaceutical research |

BACHELOR OF SCIENCE IN

# Biomedical Technology

The Bachelor's program in Biomedical Technology (BSBT) explores the many aspects of human health and disease, providing students with a strong foundation in basic and clinical sciences. The program's focus on diagnostic laboratory medicine and the role it plays in medical practice is particularly well suited for students interested in a Master's degree in Physician Assistant Studies.

**PATHWAYS**

Incoming freshmen students in the BSBT program may apply for Early Assurance acceptance into the M.S. in Physician Assistant Studies at nearby Albany Medical College (AMC) through a joint degree program between the two schools. Students in the Early Assurance program will spend their first 3½ years at ACPHS, followed by 2½ years at AMC. They will earn their bachelor's degrees from ACPHS and their master's degrees from AMC. Students interested in a Physician Assistant Studies program are not required to attend AMC. A number of our graduates have opted to get their B.S. in Biomedical Technology degrees in the full four years and then enroll in Physician Assistant Studies programs at other colleges and universities. Graduates of the BSBT program interested in pursuing different paths will be equally qualified to obtain positions in the biomedical device industry in roles such as sales, research, and technical support.

**FACULTY PROFILE**
**Lawrence Lansing, M.D.**

Dr. Lansing completed his undergraduate degree at Union College in nearby Schenectady and his medical degree at Albany Medical College. He pursued additional training and board certification in pathology, cytopathology, dermatopatholgy and internal medicine at Albany Medical College, Dartmouth College, University of South Carolina, and University of North Carolina.

Prior to joining the faculty, at ACPHS, he completed a year of research at the Pharmaceutical Research Institute at ACPHS.

With considerable clinical expertise, Dr. Lansing's classroom instruction focuses on clinical chemistry, hematology and cytopathology. He is a strong proponent of the value that laboratory professionals bring to the diagnostic and therapeutic process of patient-focused medicine.

Dr. Lansing's innovative courses in Clinical Anatomy and Human Pathology provide an excellent background for instilling a passion for the medical sciences. His guidance is also particularly valuable to students seeking entrance to medical school and physician assistant programs.


## BIOMEDICAL TECHNOLOGY CURRICULUM >

### Year 1 >

> General Biology I & II
> General Chemistry I & II
> Elementary Statistics
> The Pre-Modern World
> The Modern World
> Principles of Communication
> Elective

### Year 2 >

> Survey of Organic Chemistry
> Clinical Instrumentation Analysis
> Medical Terminology
> Cell Biology
> The Contemporary World
> Sophomore Seminar
> Anatomy & Physiology I & II
> Electives

### Year 3 >

> Clinical Microbiology I & II
> Biochemistry
> Clinical Chemistry
> Clinical Hematology
> Clinical Immunology
> Immunohematology
> Bioethics
> Urinalysis & Body Fluids

### Year 4 >

> Genetics & Molecular Basis of Disease
> Clinical Anatomy
> Introduction to Pathology
> Senior Seminar in Biomedical Technology
> Laboratory Management and Education
> Electives

>For a more detailed list of courses and credits, visit www.acphs.edu

## CHEMISTRY CURRICULUM >

| Year 1 > | Year 2 > | Year 3 > | Year 4 > |
|---|---|---|---|
| > General Chemistry I & II | > Organic Chemistry I & II | > Physical Chemistry I | > Undergraduate Research |
| > General Biology I & II | > College Physics I & II | > Analytical Chemistry Sequence | > Scientific Communication |
| > Calculus I & II | > Differential Equations | > Biochemistry I & II | > Research Seminar |
| > The Pre-Modern World | > Statistics | > Pharmaceutics I & II | > Inorganic Chemistry |
| > The Modern World | > The Contemporary World | > Electives | > Medicinal Chemistry I & II |
| > Principles of Communication | > Anatomy and Physiology I & II | | > Pharmacokinetics |
| > Elective | > Elective | | > Electives |

>For a more detailed list of courses and credits, visit www.acphs.edu

**The Bureau of Labor (BLS) statistics reports that there are currently 92,920 chemists and material scientists employed in the workforce. According to the BLS, median annual wages of chemists as of 2014 were $79,140.**

BACHELOR OF SCIENCE IN

# Chemistry

Chemistry is often considered "the central science" because of the integral role it plays in shaping our world. From food to drugs to water, anything that can be touched, tasted, smelled, seen, or felt is made of chemicals.

In accordance with the guidelines established by the American Chemical Society, the bachelor's in chemistry program at ACPHS includes coursework that spans the five traditional areas of chemistry: analytical, organic, physical, inorganic, and biochemistry.

But what distinguishes our program from those at most other schools is the medicinal chemistry track, where students learn how to apply chemical concepts to the design, synthesis, and development of drugs. The program is enhanced by the wealth of additional resources available through our other health and pharmaceutical based programs, delivering a chemistry degree that is both broadly applicable and highly specialized—a combination that few schools can match.

## PATHWAYS

Regardless of where they choose to focus their studies, all students in our chemistry program will hone their abilities in areas such as critical thinking and problem solving. These skills will give students the foundation for a variety of career options after graduation.

Students seeking entry level positions in areas such as research/development and pharmaceutical manufacturing will compete favorably with students from more traditional chemistry or biology programs because their area of study is directly relevant to the pharmaceutical and biotechnology industries and the interdisciplinary nature of the training that is part of this program.

For those looking to continue their education, options may include attending graduate school in the biological, chemical, or pharmaceutical sciences; pursuing a professional program in an allied health field (e.g., medical school, pharmacy school, dental school, et al); or entering a teacher preparation program.

## FACULTY PROFILE
**Martha Hass, Ph.D.**

Whether you want to be a pharmacist, physician, or research scientist, at some point you will be required to take Organic Chemistry. If you're at ACPHS, that's also where you will meet Martha Hass, who has been teaching Organic Chemistry at the College for more than 20 years. Dr. Hass knows that the subject matter is challenging, but the rewards are great. By the end of the year-long course, students have not simply memorized a series of chemical reactions; they have learned how to think more critically and improved their abilities to solve complex problems. "My favorite part is seeing students achieve something they didn't think they could," she says.

BACHELOR OF SCIENCE IN

# Clinical Laboratory Sciences

Albany College of Pharmacy and Health Sciences' Clinical Laboratory Sciences (CLS) program prepares students to pursue licensure and meet the demand for laboratory and health care professionals.

The CLS program prepares you to perform a full range of laboratory analyses that are essential for the diagnosis and treatment of disease within the fields of human and veterinary medicine, forensics, drug development and research. In addition, you may pursue careers in the laboratory diagnostic, health care or pharmaceutical industry.

As a CLS student, your coursework will be complemented with work in health care settings to position yourself for an exciting and rewarding career as a health care or laboratory professional.

## PATHWAYS

The Clinical Laboratory Sciences program is the optimal path for students seeking careers in the diagnostic or biomedical research laboratories or to pursue additional training to serve the patients as physician assistants.

According to the American Society for Clinical Pathology, the national vacancy rate for laboratory professionals (which includes clinical laboratory scientists and cytotechnologists) is 10%, and that figure is projected to increase as current professionals retire and demand for services increase. It has been reported that a lack of qualified candidates results in hospitals taking as much as six months to fill some of these job openings, making for excellent employment opportunities after graduation.

## FACULTY PROFILE
**M. Elyse Wheeler, Ph.D.**

Dr. Wheeler's passion is educating clinical laboratory professionals who provide the critical laboratory results to optimize patient care and to envision the future of diagnostic laboratory medicine.

Dr. Wheeler's career began with a degree in molecular biology followed by training in the clinical laboratory. She has worked as a clinical laboratory technologist in Illinois, Tennessee, Massachusetts, Arkansas and Kentucky. Prior to joining the College, she climbed the ranks from bench tech to supervisor to laboratory director. Along the way, she pursued a Ph.D. in Human Physiology and Biophysics completing research experience through Harvard Medical School. Her goal at ACPHS is to bring students to mastery of state of the art diagnostic laboratory medicine and to produce the future leaders for laboratory professions. "If you are good with your hands, enjoy hunting down the clues, and solving the puzzle of health and disease, the world of laboratory medicine is looking for you," says Dr. Wheeler.

The Clinical Laboratory Science program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119 (Phone: 773-714-8880, info@naacls.org., http://www.naacls.org/)

Clinical Laboratory Technologists execute the tests that are responsible for an estimated 70% to 80% of all diagnostic treatment decisions made by physicians.

## CLINICAL LABORATORY SCIENCES CURRICULUM >

### Year 1 >

- General Biology I & II
- General Chemistry I & II
- Elementary Statistics
- The Pre-Modern World
- The Modern World
- Principles of Communication
- Elective

### Year 2 >

- Survey of Organic Chemistry
- Clinical Instrumentation Analysis
- Medical Terminology
- Cell Biology
- The Contemporary World
- Sophomore Seminar
- Anatomy & Physiology I & II
- Electives

### Year 3 >

- Clinical Microbiology I &II
- Biochemistry
- Clinical Chemistry
- Clinical Hematology
- Clinical Immunology
- Immunohematology
- Bioethics
- Urinalysis & Body Fluids

### Year 4 >

- Clinical Practicum I & II
- Genetics & Molecular Basis of Disease
- Clinical Correlations
- Laboratory Management and Education

>For a more detailed list of courses and credits, visit www.acphs.edu

BACHELOR OF SCIENCE IN

# Health and Human Sciences

Changes in how we view health risks and the management of health problems have created new occupations, new approaches and new responsibilities for health advocates and professionals. Promoting global and public health today requires not only knowledge of the biological and physical aspects of health but also an understanding of social and cultural forces.

The Health and Human Sciences program integrates the strength of our programs in the biological sciences with the perspectives of the social sciences to yield a keen understanding of the human condition. If you have an aptitude for science, but are also interested in other aspects of the human experience, this is the program for you.

The program combines core coursework in the natural sciences (biology, physics, chemistry) with electives in the humanities (art, history, philosophy) and social sciences (sociology, political science, economics) in a mix that is ideal for students interested in careers in health, but who do not necessarily want to be health care practitioners. Working with your advisor, you also have the flexibility to tailor your studies to your individual interests.

**PATHWAYS**

Graduates of the Health and Human Sciences program have the ability to enter a wide variety of careers as science and health writers; policy analysts; and researchers for government, consumer groups and prestigious institutes. The program is also excellent preparation for graduate programs in law, medicine, global and public health, health administration, sociology and other related fields.

According to the U.S. Department of Labor, the various segments that make up health care and health related industries represent the largest employment sector in the country. Seven of the fastest 20 growing jobs are health related, and it is expected this sector will generate more than two million new jobs by 2016, more than any other sector.

**FACULTY PROFILE**
**Wendy Parker, Ph.D.**

Wendy Parker has always been interested in the social components of health. Prior to obtaining her Ph.D. in sociology, she worked for the U.S. government tracking the impact of state and federal policies on child health. She also worked in the private sector doing research and consulting for a wide range of clients. One of her current research projects involves looking at teenagers' social networks and examining if/how these networks affect their health status and educational success. Her interests in health and sociology provide the ideal background for her role as the Director of the Health and Human Sciences program at ACPHS, where she teaches classes such as Medical Sociology, while helping guide students along their chosen career paths.

## HEALTH AND HUMAN SCIENCES CURRICULUM >

### Year 1 >

> General Biology I & II
> General Chemistry I & II
> The Pre-Modern World
> The Modern World
> Elementary Statistics
> Seminar in Health Professions
> Principles of Communication
> Introduction to Sociology
> General Psychology

### Year 2 >

> Survey of Organic Chemistry
> Anatomy and Physiology I & II
> The Contemporary World
> Economics
> Calculus
> Introduction to Public Health
> Public Speaking
> Public Health Toxicology
> American Government

### Year 3 >

> Bioethics
> Epidemiology
> Global Health
> Medical Sociology
> Research Methods
> Cultural Engagement in Health Elective
> Health Psychology
> Patient Provider Communication

### Year 4 >

> Capstone Experience
> Undergraduate Research
> Critical Reflection on Health
> Health Care Systems
> Electives

>For a more detailed list of courses and credits, visit www.acphs.edu

## MICROBIOLOGY CURRICULUM >

### Year 1 >

> General Biology I & II
> General Chemistry I & II
> The Pre-Modern World
> The Modern World
> Calculus I
> Principles of Communication
> Elective

### Year 2 >

> Organic Chemistry I & II
> College Physics I & II
> The Contemporary World
> Microbiology
> Elementary Statistics
> Virology or Mycology/Parasitology
> Elective

### Year 3 >

> Biochemistry
> Immunology
> Microbial Physiology
> Molecular Biology
> Microbial Genetics
> Biomedical Lab Techniques I & II
> Cell Biology
> Electives

### Year 4 >

> Microbiology Capstone I & II
> Scientific Communication
> Bacterial Pathogenesis
> Electives/Track Electives

>For a more detailed list of courses and credits, visit www.acphs.edu

BACHELOR OF SCIENCE IN

# Microbiology

Microbiology is the study of microscopic living organisms such as bacteria, fungi, and viruses. Microorganisms play an essential role in everything from antibiotics production to vaccine development to genetic engineering.

Knowledge of microbiology is also a key component in helping fight disease—from understanding what microbes have the potential to cause harm to learning how the immune system responds to microbial attacks (interestingly, only 5% of microbes cause disease; many are actually quite helpful).

Students in our microbiology program may select one of three tracks depending on their areas of interest:

- The Biomedical Microbiology track provides students with the knowledge of how infectious diseases occur.
- The Public Health/Infectious Disease track teaches the skills relevant to the prevention and control of problems arising from infectious diseases.
- The Industrial/Pharmaceutical Microbiology track emphasizes areas that include the prevention, investigation, and control of microbial contamination.

**PATHWAYS**

Due to the importance of microbiology in many fields and industries, graduates of the microbiology program have a wide range of exciting career options.

Research from the Society for General Microbiology shows that many microbiologists pursue careers as biomedical scientists in hospitals and labs where they help diagnose infections, monitor treatments, or track disease outbreaks.

Some microbiologists work as clinical scientists in hospitals and medical school laboratories where they study microbes that cause disease (pathogens). Their findings are used to inform medical staff, improve current treatments, and develop vaccines.

Moving outside the healthcare field, microbiologists are also employed by industrial companies and government agencies to ensure that our food is safe, develop green technologies, and even track the role of microbes in climate change.

According to the U.S. Bureau of Labor Statistics, the total employment of microbiologists is projected to grow at a 13.3% rate over the 2010-2020 decade, much faster than most other occupations. Median annual wages of microbiologists as of 2014 were $76,530.

**FACULTY PROFILE**
**Meenakshi Malik, D.V.M, Ph.D.**

Meenakshi Malik didn't plan it this way. She went to school to become a veterinarian and, in fact, earned her Doctor of Veterinary Medicine (DVM) degree. But it was research that really excited her, and she returned to school to obtain a Ph.D. in Immunology. Today she is an accomplished researcher and serves as the Director of the College's Microbiology program. Spend a few minutes with Dr. Malik, and you will find her enthusiasm for research is "infectious." Or just visit her lab where you will see students eager to make their own discoveries. "It's cool to find answers for things that haven't been figured out yet," she says. Especially when it can help save lives.

BACHELOR OF SCIENCE IN

# Pharmaceutical Sciences

The pharmaceutical sciences are critical to helping unlock the mysteries hidden away inside the human body. Pharmaceutical scientists are focused on the discovery and development of the medications that are eventually dispensed by pharmacists and used every day by patients to manage their health.

Research provides the foundation for our Pharmaceutical Sciences program. You will be engaged in laboratory-based coursework for all four years, working side-by-side with researchers whose skills have attracted funding from both government and private industry sources.

"One of the goals of the Pharmaceutical Sciences program is to help students think like a research scientist," says Mike Raley, Ph.D., faculty member of the Pharmaceutical Sciences program. "Classroom activities alone don't foster that. Here, you start by asking your mentor, 'How would you test this hypothesis, design this experiment, or solve this problem?' but soon you will learn how to answer these questions on your own."

You may perform research with ACPHS faculty or with research scientists at the College's Pharmaceutical Research Institute. These research experiences span a wide range of medically-related areas that include cancer, diabetes, chronic kidney disease, addiction and inflammation.

**PATHWAYS**

A Bachelor of Science in Pharmaceutical Sciences from ACPHS is an excellent launching pad to a wide range of career opportunities and will help set you apart from general science majors for a range of positions at pharmaceutical, chemical and biotech companies.

The program is also excellent preparation for professional or graduate school. Our joint bachelor's/master's program in pharmaceutical sciences allows you to gain a master's degree in only five years.

In recent years, graduates of the pharmaceutical sciences program have continued their education through acceptance into graduate or medical school. Others have moved directly into industry working with companies such as Abbott Laboratories. In a recent survey conducted by the American Association of Pharmaceutical Scientists (AAPS), the median salary of AAPS members with a bachelor's degree was $89,000. The median salary jumped to $102,000 with the addition of a master's degree.

**FACULTY PROFILE**
**Michael Raley, Ph.D.**

Shortly after earning his Ph.D. in Physiology and Cell Biology from nearby Albany Medical College, Mike Raley took what he planned would be a one-year teaching assignment at ACPHS. Fortunately for the College and its students, Dr. Raley was persuaded to extend his stay, and over the course of the last 16 years he has become a valuable member of the ACPHS community.

Today he can be found teaching courses in Pathophysiology, Real World Healthcare, and Scientific Literature Evaluation. Dr. Raley is also the advisor of the College's popular Outdoors Club, where among other roles, he has led students on trips to Central and South America.

## PHARMACEUTICAL SCIENCES CURRICULUM >

### Year 1 >

- General Biology I & II
- General Chemistry I & II
- Elementary Statistics
- The Pre-Modern World
- The Modern World
- Principles of Communication
- Scientific Reasoning I & II
- Elective

### Year 2 >

- Organic Chemistry I & II
- Physics I & II
- The Contemporary World
- Calculus I
- Scientific Reasoning and Analysis III
- Electives

### Year 3 >

- Biochemistry
- Thesis I
- Thesis Research
- Physiology/Pathophysiology I & II
- Molecular Biology
- Electives

### Year 4 >

- Thesis II
- Thesis II
- Foundations of Pharmaceutical Science
- Infectious Disease Pharmacology
- Neuropharmacology
- Cardiovascular Pharmacology
- Electives

>For a more detailed list of courses and credits, visit www.acphs.edu

## PHARMACY CURRICULUM >

### Pre-Pharmacy: Year 1

- General Biology I & II
- General Chemistry I & II
- Calculus
- The Pre-Modern World
- The Modern World
- Principles of Communication
- Psychology
- Electives

### Pre-Pharmacy: Year 2

- Organic Chemistry I & II
- College Physics I & II
- The Contemporary World
- Microbiology
- Elementary Statistics
- Electives

### Professional Year 1 (P1)

- Pharmaceutics I & II
- Physiology/Pathophysiology I & II
- Pharmacy Skills Lab I & II
- Biochemistry
- Immunology
- Foundations of Pharmacy
- Molecular Biology
- Self Care/OTC
- IPS Workshop I & II
- Elective

**After P1 prior to P2**

- IPPE Community
- IPPE Health and Wellness

### Professional Year 2 (P2)

- Principles of Pharmacology & Medicinal Chemistry
- Pharmacokinetics
- PTP&M–Cardiovascular
- PTP&M–Respiratory Disease
- PTP&M–Endocrine
- PTP&M–GI/Nutrition
- PTP&M–Infectious Disease
- Drug Information/ Biostatistics
- U.S. and Global Health Care Systems
- IPS Workshop III & IV
- Pharmacy Skills Lab III & IV
- Scientific Literature Evaluation
- Electives

**After P1 prior to P2**

- IPPE Institutional
- IPPE Team-Based Care

### Professional Year 3 (P3)

- PTP&M–Neurology/Psychology
- PTP&M–Rheumatology/ Connective Tissue/Oncology
- PTP&M–Nephrology/Toxicity
- PTP&M–Genitourinary
- IPS Workshop V & VI
- Pharmacy Skills Lab V & VI
- Pharmacoeconomics and Health Policy
- Pharmacy Administration
- Immunizations
- Integrative/Alternative Medicine
- Jurisprudence
- Health Care and Human Values
- Orientation to APPE
- Electives

### Professional Year 4 (P4)

42 weeks of Advanced Pharmacy Practice Experience in ambulatory care, community pharmacy, institutional, inpatient, and other settings.

### ABBREVIATIONS

**PTP&M:** Pathophysiology, Therapeutics, Pharmacology and Medicinal Chemistry

**IPS:** Integrated Problem Solving

**IPPE:** Introductory Pharmacy Practice Experience

**APPE:** Advanced Pharmacy Practice Experience



>For a more detailed list of courses and credits, visit www.acphs.edu

**Pharmacists interact with patients on a daily basis in a variety of settings, ranging from neighborhood pharmacies to large public hospitals. It is part of the reason why pharmacists are widely regarded as the most accessible members of the health care team and are often rated among the most trusted health professionals.**

DOCTOR OF

# Pharmacy

As the leading health care authorities on medication, pharmacists play essential roles in patient care by counseling patients, providing immunizations, and consulting with other professionals as members of the health care team.

The Doctor of Pharmacy (Pharm.D.) program at Albany College of Pharmacy and Health Sciences provides an education that allows you to connect your professional and personal interests into a rewarding career. The Doctor of Pharmacy program includes two years of pre-pharmacy coursework to prepare you for the final four years of study in the professional program.

Part of what makes the Doctor of Pharmacy program special is that nearly all of our pharmacy practice faculty are licensed pharmacists who maintain a clinical practice. As practicing professionals, they are aware of the latest developments in patient care and share that information with students. Pharmacy faculty also teach and mentor students at their practice sites, so that they gain real work experience.

Our Integrated Problem Solving (IPS) Workshops contribute to the learning environment by providing you an opportunity to utilize and practice material learned in class, in an atmosphere that promotes discussion and peer-to-peer group communication. Students find these workshops to be places where they can bring up questions they may not otherwise have asked in an environment that fosters mastery of the subject matter. As one student workshop leader said, "The IPS program is really fun and engaging. I found it incredibly useful in my ongoing learning."

## PATHWAYS

As America ages and medications become more complex, the demand for pharmacists remains strong. Graduates from ACPHS's Doctor of Pharmacy program practice in a variety of professional settings including: community pharmacies, hospitals, ambulatory care clinics, long term care facilities, managed care, government, health care agencies, and academia.

According to the Bureau of Labor Statistics, employment of pharmacists is expected to increase by 25 percent from 2010 to 2020, faster than the average for all other occupations. The 2014 median pay for a pharmacist was $118,470 per year.

## FACULTY PROFILE
**Kate Cabral, Pharm.D.**

Kate Cabral jokes that she first became interested in cardiology at the age of eight when her uncle gave her a cow's heart preserved in a jar. Whether that gift influenced her career path is hard to know, but Dr. Cabral is now a clinical pharmacist specializing in the areas of cardiology and anticoagulation. In addition to her classroom teaching, she precepts ACPHS students on rotation in the Coronary Care Unit of Albany Medical Center. "What I enjoy about the hospital setting—and what I stress to my students—is that you have the opportunity to work closely with the health care team at a point where you can really make a difference in the patient's recovery process."

# Research

Unlike other colleges and universities where research activities are often restricted to faculty and graduate students, all ACPHS students have opportunities to work closely with faculty on research spanning some of the world's most pressing health threats.

The College's commitment to student research is underscored through initiatives such as the annual Student Summer Research Award Program. This venture provides research awards to ACPHS students interested in pursuing laboratory, clinical or other research projects and scholarly activities under the guidance of a faculty mentor.

Albany College of Pharmacy and Health Sciences has two research institutes. Established in 2003, the Pharmaceutical Research Institute is home to international experts in fields such as nanotechnology, medicinal chemistry, molecular biology and cell biology. An example of the work being done at the Institute includes research to help develop an antidote for anthrax as part of a joint effort with three other institutions.

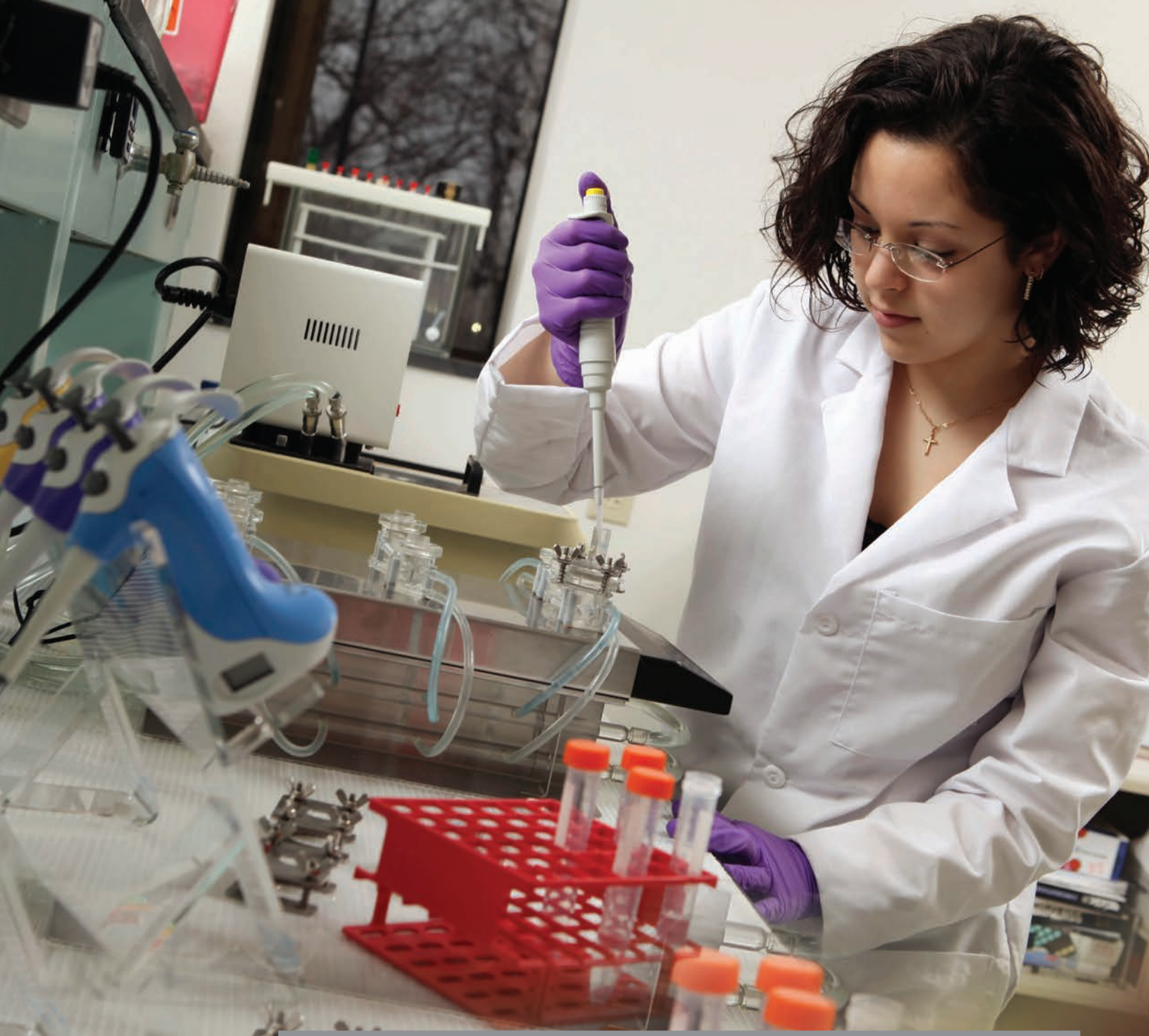
The Institute includes the Center for NanoPharmaceuticals, where investigators attack diseases ranging from cancer to macular degeneration with nanotechnology—using particles 10,000 times smaller than a human hair to steer drugs to exact targets, thereby minimizing risks and side effects.

The Research Institute for Health Outcomes (RIHO) uses statistical analysis to evaluate the results of different treatments and help determine which yield the best results. This field, often referred to as comparative effectiveness research, aims to maximize patient care with limited financial resources and has drawn increasing interest from government and private industry as the U.S. works to reform its health care system.

ACPHS is also home to groups of faculty with specialties in infectious disease and nephrology (the study of the function and diseases of the kidney). The nephrology group is the largest team of academic-based faculty in the country. The collective expertise of this group, which is called ANephRx, allows for a wide range of research projects designed to help improve the care of patients suffering from chronic kidney disease. In 2009, the National Kidney Foundation of Northeastern New York selected the College as the recipient of its "Contributions to Health Care Award." In bestowing the award, the NKF noted: "The expertise your faculty lends at the local and national level has helped us to educate thousands of health care professionals throughout the country."

**FACULTY PROFILE**
**Shaker A. Mousa, Ph.D.**

Shaker Mousa, Ph.D. is the Vice Provost for Research and Executive Vice President and Chairman of the College's Pharmaceutical Research Institute (PRI). His research has been reported in nearly 600 peer reviewed publications, and he holds more than 350 U.S. and international patents. Under the direction of Dr. Mousa, PRI has obtained research grants and equipment donations totaling more than $13 million since its formation in 2003. He has also been instrumental in forming research collaborations with organizations in more than a dozen countries. Prior to joining the College, Dr. Mousa served for more than 17 years with DuPont Pharmaceuticals Company as a principal research scientist and research fellow.



## STUDENT RESEARCH HIGHLIGHTS >

**Jaclyn Hosmer** (pictured above) presented a research paper at the annual meeting of the Controlled Release Society (CRS) in Copenhagen, Denmark. Jaclyn, who was accompanied by research advisor Luciana Lopes, discussed the anti-cancer drug paclitaxel and new approaches for minimizing the drug's harmful side effects.

**Michael Camuso** has worked in the lab of Associate Professor Richard Dearborn for the past two years. The two are working to identify ways to slow, or even stop, the growth of tumor cells by controlling a protein that plays a key role in cancer.

**Elaine Liu** was selected for a research fellowship through the Mayo Clinic Graduate School. She was just one of 80 undergraduate fellowship recipients among nearly 1,000 applicants. Liu studied molecular neuroscience.

**2015-16 Costs (Albany campus)**

| | |
|---|---|
| Tuition | $30,300 |
| Fees | $781 |
| Room | $6,700 |
| Board | $3,710 |
| Books | $1,000 |
| Tablet Laptop | $1,238 |

# Admissions

## IMPORTANT DEADLINES FOR FRESHMEN APPLICANTS

We want to make your admissions process as simple and straightforward as possible. Please take note of the following important dates and deadlines.

### EARLY DECISION

**NOVEMBER 1**
Early Decision Admission Application Deadline

**NOVEMBER 15**
CSS Profile Application Deadline

**DECEMBER 1**
Early Decision Admission Application Deadline II

**DECEMBER 15**
Early Decision Notification

**DECEMBER 23**
Financial Aid Award Notification

**FEBRUARY 1**
Deposit and Enrollment Confirmation Deadline

Free Application for Federal Student Aid (FAFSA) Deadline

### REGULAR DECISION: FALL ENTRY

**FEBRUARY 1**
Regular Decision Admission Application Priority Deadline for First Year Students

Free Application for Federal Student Aid (FAFSA) Deadline

**MARCH 1**
Regular Decision Notification for First Year Students

**MARCH 24**
Financial Aid Award Notification for First Year Students

**MAY 1**
Deposit and Enrollment Confirmation Deadline for First Year Students

**JULY 1**
Wait List Response Date

## IMPORTANT DEADLINES FOR TRANSFER APPLICANTS

### REGULAR DECISION: SPRING ENTRY

**NOVEMBER 15**
Application Priority Deadline for Transfer Students

**January 1**
Deposit and Enrollment Confirmation Deadline for Transfer Students

### REGULAR DECISION: FALL ENTRY

**MAY 1**
Application Priority Deadline for Transfer Students

**JUNE 15**
Deposit and Enrollment Confirmation Deadline for Transfer Students

### How to Apply

The Office of Admissions encourages qualified candidates who have selected ACPHS as their first choice to apply under the Early Decision program. Early Decision is a binding agreement and those offered admission are expected to submit an enrollment confirmation and non-refundable tuition deposit.

To ensure full consideration and a place in the incoming class, we highly recommend that the completed application be submitted for Regular Decision by the priority deadline of February 1. We will continue to process and accept applications after the priority deadline as long as space remains available.

Both Early Decision and Regular Decision applicants must complete and submit an application form to the College with the required $75 non-refundable fee. Students must submit the Common Application, available on our web site. The following materials must also be sent to the Office of Admissions:

> Official high school transcript
> Two (2) letters of recommendation (one from your guidance counselor and one from a mathematics or science teacher)
> Scores from the Scholastic Aptitude Test (SAT) or American College Testing Program Examination (ACT), which also must include the writing section

### How to Contact Us

Our mailing address is Albany College of Pharmacy and Health Sciences, Office of Admissions, 106 New Scotland Avenue, Albany, New York 12208. You can reach us by phone at 518.694.7221. You may reach us by e-mail at admissions@acphs.edu.



# Financial Aid

Over 98 percent of students at Albany College of Pharmacy and Health Sciences are assisted by grants, scholarships and loans from state and federal governments, the College and/or other private agencies. Students must file the Free Application for Federal Student Aid (FAFSA) by February 1 each year in order to determine financial aid eligibility.

**Federal Student Aid >** Several types of federal student aid are available to students to help meet educational expenses including: Pell Grants, Supplemental Educational Opportunity Grants, Veterans Administration Educational Benefits and Bureau of Indian Affairs Scholarships. In addition, Federal Direct Student Loans (subsidized or unsubsidized), Parent Loans for Undergraduate Students (PLUS), Health Profession Student Loans (HPSL) and Perkins loans are available.

**State Student Aid >** Financial assistance is available to undergraduate students from the states of New York and Vermont through state scholarship and award programs which are subject to change each year. Additional information about these programs is available online at www.acphs.edu.

**ACPHS Scholarships and Grants >** In addition to federal and state aid, ACPHS offers numerous institutional scholarships and grants. All awards are based upon full-time enrollment each semester, unless otherwise indicated. Need-based scholarships require the student to file the FAFSA each year by the published priority deadlines. A list of scholarships and grants offered by the College may be found in the Financial Aid sections of the ACPHS web site and college catalog.

**Work Study and Student Employment >** Work study and regular student employment positions are also available, some on campus and at approved off campus sites. Students working in positions are paid hourly and typically work three to six hours per week during the academic year.

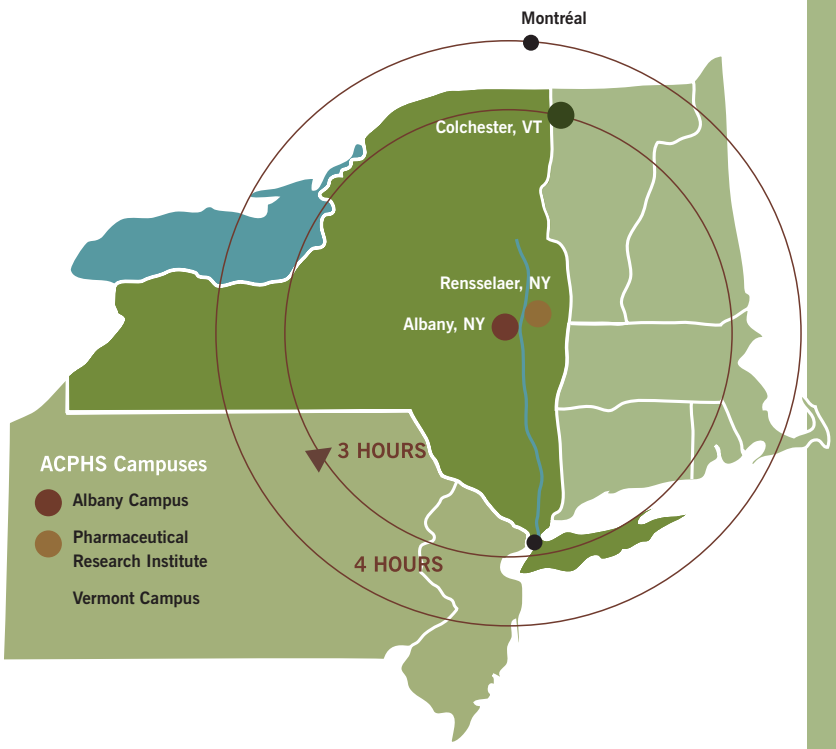
# Visiting Campus

Please contact the Office of Admissions to schedule a campus tour with a current ACPHS student. You can schedule an appointment at acphs.edu/visit or by calling the Office of Admissions at 518.694.7221. Please note:

> Campus tours are available Monday through Friday at 10am and 2pm

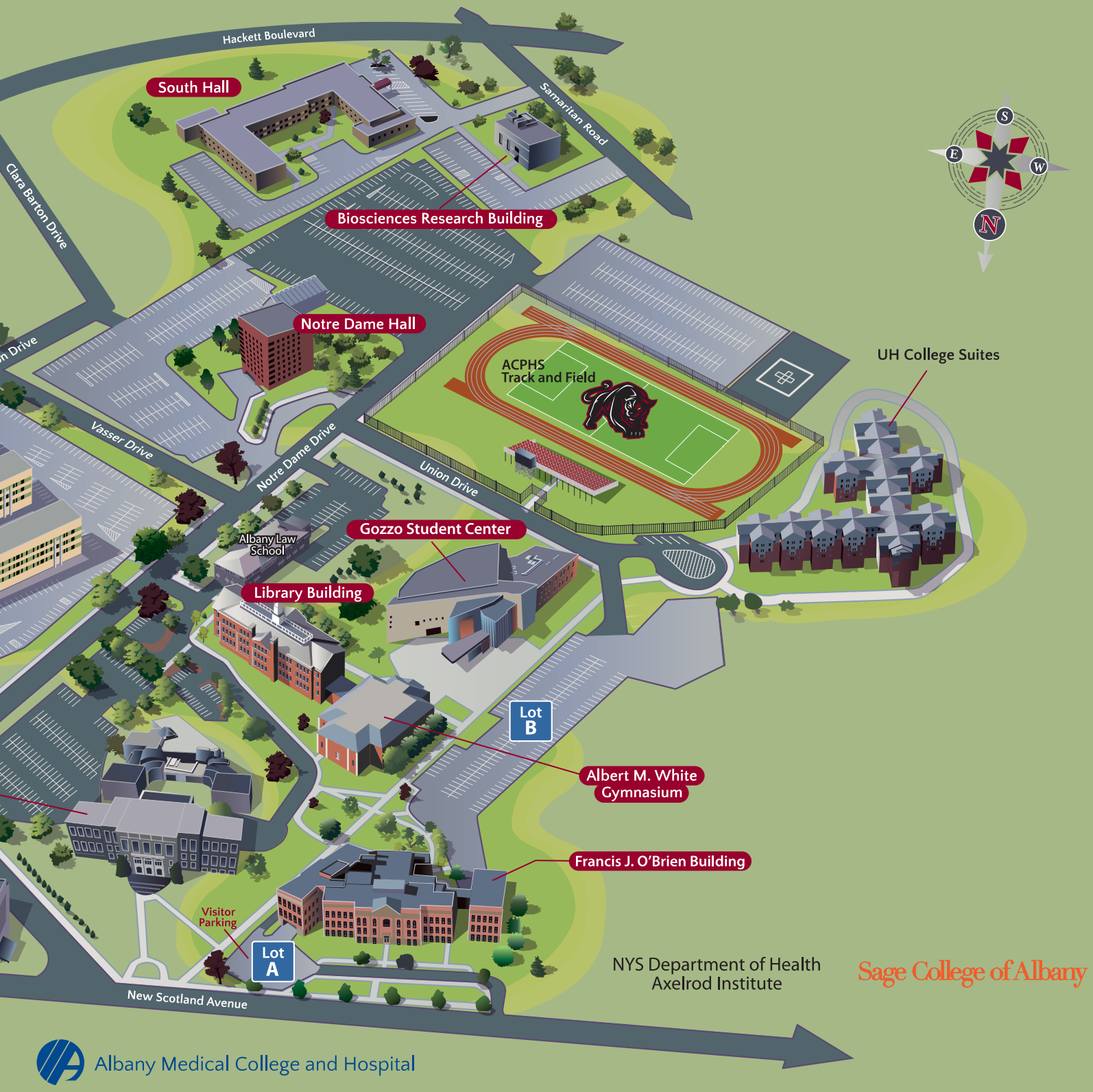
> Weekend and school holiday appointments may also be available by appointment.

Special events and visit days are scheduled throughout the year to meet the needs of students at every point in the college search process. Students who have met or will meet the prerequisites for transfer into the Pharm.D. program or who are interested in the M.S. in Pharmaceutical Sciences are encouraged to visit our Vermont campus.




## Albany Campus

# Albany College
## of Pharmacy and Health Sciences



Albany College
of Pharmacy and Health Sciences

# At a Glance

**2014-2015 Data:**
ACPHS is one of the nation's first pharmacy schools, founded in 1881.

**Enrollment:**
Approximately 1,370 students in Albany and 215 students in Vermont.

**Student to Faculty Ratio:**
13:1

**Our Campuses:**
Albany, the capital of New York, is located at the crossroads of the Northeast within a three-hour drive from New York and Boston.

Located in Colchester, Vermont just minutes from Burlington and Lake Champlain, the campus offers a four-year professional pharmacy curriculum and master's program in pharmaceutical sciences.

**Activities:**
More than 30 clubs and organizations.

**Athletics:**
The College's basketball, cross country, soccer and track and field teams compete in the Hudson Valley Intercollegiate Athletic Conference and nationally as a member of the United States Collegiate Athletic Association (USCAA).

**Scholarships and Financial Aid:**
Nearly 98 percent of students are assisted by grants, scholarships and loans. Awards are based on need and/or academic performance.

**Housing:**
About half of our students live in one of the campus' three residence halls.

**Facilities/Resources:**
Student Center (includes Bookstore, Dining Hall and Student Lounge), Pharmaceutical Research Institute, IT Support Center, Gymnasium, Fitness Center and Outdoor Track.

**Entertainment:** Restaurants, theaters, shopping, museums and outdoor recreation are all within a short distance from campus.

**2015–16 Costs (Albany)**

| | |
|---|---|
| Tuition | $30,300 |
| Fees | $781 |
| Room | $6,700 |
| Board | $3,710 |
| Books | $1,000 |
| Tablet Laptop | $1,238 |

## PROGRAMS

- **B.S. in Biomedical Technology**
- **B.S. in Chemistry**
- **B.S. in Clinical Laboratory Sciences**
- **B.S. in Health and Human Sciences**
- **B.S. in Microbiology**
- **B.S. in Pharmaceutical Sciences**
- **Doctor of Pharmacy (Pharm.D.)**
- **M.S. in Molecular Biosciences**
- **M.S. in Clinical Laboratory Sciences**
- **M.S. in Cytotechnology and Molecular Cytology**
- **M.S. in Pharmaceutical Sciences**
- **M.S. in Health Outcomes Research**
- **Joint Degree Programs**
  Additional joint degree programs are available with area colleges for those interested in pursuing graduate degrees in medicine, law and business (P.A., M.D., J.D., M.S., M.B.A.).



106 New Scotland Avenue, Albany, NY 12208-3492 > 1.518.694.7221 > admissions@acphs.edu > **www.acphs.edu**

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