A forensic science student locates a fingerprint using a Crimescope laser.
When selecting a university, science students may think they only have two options – attending a small college with a strong focus on teaching or a large university that offers the excitement of innovative research.

At Duquesne University’s Bayer School of Natural and Environmental Sciences, you can experience both! You benefit from faculty who are passionate about teaching and mentoring students. Yet you also have opportunities to participate in breakthrough research and gain hands-on experience with all the latest laboratory instrumentation.

And at Duquesne, the opportunities for undergraduate students to participate in research are far greater than at other universities because of our favorable student-to-faculty ratio and the strong emphasis that we place on research at the undergraduate level. These opportunities give Duquesne students a dramatic advantage when competing with their peers for jobs or admission into top-level graduate programs.
A Tradition of **Educational and Ethical Excellence**

Founded in 1878 by the Spiritans (the Congregation of the Holy Spirit), Duquesne boasts a proud legacy of providing an exceptional education with an emphasis on moral values, a dedication to quality teaching and a commitment to service.

**The Ideal Setting for Science Success**

Duquesne’s urban setting places its students in close proximity to a wealth of science-based internship opportunities at corporations and agencies throughout the region. Although it is located in the heart of downtown Pittsburgh, Duquesne still preserves the feel of a small college town because of its safe, attractive, self-contained campus.

**Access to World-Class Technology and Labs**

To remain at the forefront of innovative scientific research, Duquesne continually invests in its laboratory facilities and technology. As a result, Duquesne’s laboratory equipment is comparable to and in some cases more advanced than what is available at other large universities or industrial research facilities.
Duquesne University’s Bayer School of Natural and Environmental Sciences offers a comprehensive selection of degree options for undergraduates.

Biology

Duquesne offers programs leading to the Bachelor of Science degree in Biology at the undergraduate level, as well as Ph.D. and M.S. degrees at the graduate level. In particular, our faculty members have broad interests in areas such as cell biology, molecular biology, biochemistry, microbiology, physiology, ecology, evolution, biotechnology and biomedical sciences. For the student interested in the commercial application of biological disciplines, Duquesne offers advanced undergraduate instruction and a Master of Science in Biotechnology.

For our undergraduate students, we pursue a progressive approach to teaching biological sciences that gives students real-world laboratory experience that extends beyond the classroom. Our biology program incorporates “SuperLabs” in its curriculum. These labs are designed to give students a thorough comprehension of the scientific process through an intensive seven-hour-per-week laboratory experience that emphasizes the development of interpersonal and presentation skills, as well as laboratory techniques.

www.duq.edu/biology
Chemistry and Biochemistry

Duquesne’s Chemistry and Biochemistry program emphasizes that “The Central Science,” as our field has been called, truly stands at the center of collaborative, multi-disciplinary research. Thus, our undergraduate students become engaged in research as early as possible and often work side-by-side with doctoral students and world-renowned faculty mentors, using the most modern instrumentation. A 4.6-to-1 ratio of Chemistry/Biochemistry majors to faculty ensures that our students receive personalized attention. The department also provides funding to help our undergraduate researchers present their results at prestigious national meetings of, for example, the American Chemical Society, the Biophysical Society and Pittcon. Many of our students also participate in the Bayer School’s Forensic Science and Environmental Science programs.

The undergraduate research experience is rounded out by an innovative integrated lab sequence where students work in teams to approach different aspects of a scientific problem. Each team designs its own experiments to contribute to the project’s success. Thus, students prepare for their careers by developing not only their technical abilities, but also communication, problem-solving and interpersonal skills. The success of this approach is evidenced by our students’ competitiveness for Fulbright, Goldwater and other prestigious national awards, as well as their successful, rewarding careers, including work as doctors, teachers, researchers and businessmen/businesswomen.

www.duq.edu/chemistry

Environmental Science

Duquesne offers one of the few environmental programs that provides a solid foundation in science through a rigorous curriculum in both biology and chemistry at the undergraduate level. Students can also earn a graduate degree in Environmental Science and Management (ESM) through our accelerated five-year program that includes the option of a conservation biology concentration. With a unique faculty comprising research-active professors and environmental professionals, the program provides opportunities for both hands-on research experience and professional experience in industry, government agencies and non-profit organizations.

www.duq.edu/environmental-science
Physics

Along with a strong content of physics and mathematics, Duquesne’s Physics bachelor’s programs offer flexibility with a view toward long-term career plans. Students opt for a broad curriculum or a concentration in astronomy or condensed matter, while gaining valuable experience in basic or applied physics research. Computing and lab skills are integrated throughout the curriculum. Small classes and individualized instruction create a favorable learning environment where students thrive as they develop critical analytical skills of great value across the spectrum of employment opportunities. Our graduates are regularly recruited into competitive graduate programs across the country.

Dual-degree options include a concurrent second bachelor’s in Mathematics and a long-established 3-2 program with engineering schools at the University of Pittsburgh or Case Western Reserve University.

www.duq.edu/physics

Forensic Science and Law

Duquesne’s entry-level Master of Science degree in the Forensic Science and Law program enables incoming freshmen to earn a graduate degree in just five years, along with a bachelor’s degree in either Biochemistry or Biology. Now accredited by the American Association of Forensic Science, it is the only forensic science program that integrates a strong, science-based curriculum with legal proficiency, which is provided through its affiliation with Duquesne’s Law School and the Cyril H. Wecht Institute of Forensic Science and Law.

The City of Pittsburgh and Allegheny County provide a rich and diverse array of forensic experiential opportunities, many of which are available to students in the program. Duquense’s program is one of the few forensics programs with on-campus access to dedicated forensics labs.

www.duq.edu/forensic-science
Pre-Medical
Pre-Dental
Pre-Veterinary

Through our Pre-Medical Professions program, students work with a pre-health advisor to tailor their undergraduate experience to prepare them for careers in the fields of medicine, dentistry, veterinary medicine, optometry, podiatry or chiropractic medicine. Students may earn any undergraduate degree in the natural sciences in preparation for a healthcare career.

Students in the program receive counseling, advisement and support every semester throughout their four years at Duquesne. This includes helping to locate volunteer and shadowing opportunities, assistance in preparation for admission exams, practice professional interviews with our Pre-Medical Professions Committee and guidance through the professional school admission process.

www.duq.edu/premed

Secondary Science Education

Our accelerated Science Education programs give students a competitive edge when seeking positions as middle or high school science teachers. Duquesne University is the only university in the Pittsburgh region that enables students to earn a B.S. in Biology, Chemistry or Physics and an M.S. in Education in just five years.

Throughout five years and one summer, students will obtain 70 to 80 hours of field experience in the high school classroom while taking courses toward their M.S. in Education. These field hours include student teaching in the final semester. There are opportunities for year-long paid internships where students can teach a class of their own.

With both degrees, our students are highly qualified for science education positions and command more competitive starting salaries than others with only undergraduate education degrees.

www.duq.edu/science-education
Faculty members in the Bayer School of Natural and Environmental Sciences embrace their dual roles as teachers and researchers. The school recruits and promotes its professors based on their teaching ability, enthusiasm for working with students and communication skills, along with their research accomplishments. Each student is assigned to a professor who serves as a mentor. Students meet with their mentors at least once during every semester to establish goals and determine the mix of coursework, research projects or internships that will help them achieve their goals. Mentors also help students connect with faculty members who are conducting research in areas that most interest them.

“Our faculty are committed to ensuring that students receive the most modern and up-to-date education in their respective majors, while also developing the critical reasoning, communication and technical skills to enable them to become leaders in the global scientific community.”

David W. Seybert, Ph.D.
Dean, Bayer School of Natural and Environmental Sciences
Faculty Profiles

At Duquesne, you’ll find many enthusiastic, accomplished scientists who have a passion for teaching and conducting ground-breaking research. Although we can’t introduce you to all of them in this brochure, we have profiled several who will help ensure your success at Duquesne.

Jeffrey Evanseck, Ph.D.

B.S. Computer Science, B.S. Chemistry, Purdue University
M.S. Organic Chemistry, University of California, Los Angeles
Ph.D. Physical Chemistry, University of California, Los Angeles
Post-Doctoral Fellow Theoretical Chemistry, Harvard University
First Lauritis Chair of Teaching and Technology

Dr. Jeffrey Evanseck, professor of chemistry, has established a reputation for innovative teaching and research. To further his research, which combines quantum chemistry and complex mathematical computations, he founded the Center for Computational Sciences, a collaborative initiative among faculty in many science and math-related disciplines. His recent research focuses on the chemical bond, how it ruptures and how it can be controlled in the design of new antibiotic drugs.

Evanseck’s students consistently give him outstanding teaching performance evaluations. He motivates students through creative teaching methods that ensure active class participation by all students.

“The high caliber of our students makes it a joy to delve into the mysteries of quantum theory and explore the paradoxes that result from the mathematical description of the quantum world,” explains Evanseck. “The students want to achieve a critical and deep understanding of the material. Their focus is intense, and, most importantly, I observe that the challenge better prepares our students for graduate studies and a professional career.”

Frederick Fochtman, Ph.D.

B.S. Pharmacy, Duquesne University
M.S. Pharmacology-Toxicology, Duquesne University
Ph.D. Pharmaceutical Chemistry, Duquesne University

Dr. Frederick Fochtman, director of the Forensic Science and Law Program and the Cyril H. Wecht Institute of Forensic Science and Law, has more than 35 years of experience as a forensic professional. Fochtman previously served as the director and chief toxicologist of the Allegheny County Medical Examiner’s Office Forensic Laboratory Division.

His experience with the county kept him up to date on new technologies and forensic techniques, which he has incorporated into Duquesne’s curriculum. Additionally, he has been instrumental in developing the experiential education program for students who are in their fifth year of study. As part of the forensic curriculum, all students acquire hands-on experience working in the forensic science lab.

“The program supplements traditional internships and gives students an easier pathway to gaining high-quality professional experience prior to graduation,” says Fochtman.
Dr. Paul Johnson, assistant professor, excels at teaching large chemistry classes and motivating students to help each other. In fact, Johnson was named “Teacher of the Year” by the national leadership honor society Omicron Delta Kappa. He also earned Apple Polishing Awards for teaching excellence from the Delta Zeta and the Gamma Phi Beta sororities.

“Students learn by listening, not by taking notes, which are a distraction,” says Johnson. “So, I’ve devised a system that allows them to avoid taking notes.”

To facilitate thorough comprehension of the course material, Johnson also emphasizes small study groups of four to five students.

“The best way for a student to learn is by teaching the material to others,” explains Johnson. “The strongest students learn more by helping the other students, which elevates the achievement of the entire class.”

Dr. Lisa Ludvico, assistant professor, is jointly appointed as a faculty member of biology and forensic science. Her teaching prowess was recently recognized by the national leadership honor society Omicron Delta Kappa, which named her “Teacher of the Year.” In particular, students appreciate Ludvico’s enthusiasm and her approach to teaching lab techniques.

“Students learn best when given the opportunity to keep trying until they get the experiment right,” says Ludvico.

Ludvico’s inspirational teaching style makes her a great fit for Duquesne’s undergraduate research program, where she shows students how to create effective poster presentations and maintain high ethical standards. She also involves students in her research projects, which vary from forensics to animal behavior.

“Students need to understand how vital biological research is to their lives,” adds Ludvico.
Brady Porter, Ph.D.

B.A. Zoology, Ohio Wesleyan University
Ph.D. Zoology, The Ohio State University
Post-Doctoral Studies, Genetics, Ecology, University of Georgia

Dr. Brady Porter, associate professor of biology, involves students from Biology, Environmental Science and Management and Forensic Science by offering hands-on experience with Duquesne’s modern equipment. Students leave Porter’s lab prepared for a variety of careers using molecular genetic techniques.

“Hands-on experience accelerates the learning process and provides students with new insight into the process of science,” says Porter. In Porter’s lab, student researchers have the opportunity to develop their own project designed to be a publishable unit. If they work hard, students can be part of the scientific process from start to finish.

“I believe this approach allows each student to personally identify with their research project and keeps them motivated to discover their own findings. I push them to present their research at scientific meetings,” says Porter. “It is rewarding when their work results in the improved management of endangered species.”

Students are responding positively to the hands-on research approach. The sorority sisters of Alpha Gamma Delta awarded Porter the Apple Polishing Award for excellence in faculty performance.

“The one-on-one relationship with the faculty has really helped me develop my skill sets, as I continue my progress toward earning my bachelor’s degree.”

Alexander Arrico, Physics Major
Laboratory Technology

The advanced technology in Duquesne University’s science laboratories rivals the resources that are available at the world’s largest universities and corporate research facilities. But, in contrast to the restrictive access policies commonly found at large institutions, the Bayer School prides itself on giving all faculty and students, even undergraduates, unimpeded access to its instrumentation.

Due to the thousands of students and hundreds of faculty members served by their labs, it is logistically impossible for large universities to provide students with the same level of access offered by Duquesne. While very few undergraduates use state-of-the-art equipment at large institutions, Duquesne strives to ensure that each student gains experience with the latest scientific technology. This hands-on experience gives our students a competitive edge when applying to graduate schools or entering the workforce.

The new Center for Excellence in Mass Spectrometry, which is housed in a clean room, enables researchers to delve further into measurements related to health and environmental issues.

(Above) A chemistry student uses the 500 MHz NMR spectrometer.

(Right) A chemistry student interprets the mass spectrum of environmental toxins found in the blood of autistic children.
“In the classroom, it is very easy to interact with the professors. It isn’t a lecture in which the students are just taking notes; it is more of a dialogue between the students and the teachers.”

Jessica Rabuck, Biochemistry Major

Sharing Facilities

In the spirit of academic collegiality, the Bayer School shares its laboratories with scientists from neighboring institutions, such as the University of Pittsburgh and Carnegie Mellon University. These scientists often find it more convenient to use the Bayer School’s labs and, in some instances, they must use our labs because of exclusive technologies available only at Duquesne.

For instance, Duquesne has the most technologically advanced “clean rooms” in western Pennsylvania. These facilities are environmentally controlled rooms that consistently maintain conditions such as temperature and pressure. The clean rooms also have powerful air-filtration systems that virtually eliminate dust and pollen, which could contaminate samples that are analyzed by highly sensitive scientific equipment.

Students must wear protective clothing in our state-of-the-art “clean rooms” to avoid contamination of the samples that can be in the parts-per-trillion concentrations being analyzed.

Improving the Image of Biological Study: Confocal Microscope Enhances Teaching and Research

New technology is improving the image of biological study in the Bayer School of Natural and Environmental Sciences. With the help of a confocal microscope valued at $300,000, Duquesne faculty and students can now see tissues and cells through images that are larger and more lifelike than ever before.

Although large research institutions rarely use confocal microscopes as teaching tools for undergraduates, virtually all Biology students at Duquesne now have opportunities to use it. Additionally, the confocal microscope dramatically increases the research capabilities of its users. For example, one type of bacteria appears as a flattened hook when viewed through a conventional microscope. However, the confocal microscope reveals the same bacteria to actually be a three-dimensional corkscrew.
Innovative Research Opportunities

The Undergraduate Research Program is held each summer between academic years. The purpose of the program is to partner undergraduate students majoring in the sciences with faculty to work in a laboratory setting. The program is 10 weeks long, and each student earns a stipend.

Aside from research, students also participate in the Ethics Forum, Speaker Series and community service projects and present a research poster at the Summer Undergraduate Research Symposium.

The Summer Undergraduate Research Symposium, hosted at Duquesne University, is one of the largest gatherings of undergraduate science students presenting their research. Typically, more than 110 students from over 50 colleges and universities throughout the U.S. are represented at this event each year. It is a true celebration of the sciences.

Faculty Research Profiles

From unlocking the secrets of DNA to mapping uncharted regions of the cosmos, there are many exciting, original research projects taking place at Duquesne. As a new student, you will work with your mentor to match your research interests with those of our faculty. To give you a better understanding of the types of research we conduct, we have profiled several examples of ongoing projects.

Mapping the Universe Through Gravitational Lensing

Dr. Simonetta Frittelli, an associate professor of physics, researches cosmological distances and galaxy structures. Many large, distant objects, such as galaxies, are blocked from view by closer space matter. When a closer intervening object blocks the light emitted by the distant galaxy, the gravitational field surrounding the closer object distorts the light. This process is called gravitational lensing because gravity works like a glass lens to bend light that shines through it. Gravitational lensing creates arc-like patterns of light from the distant galaxy that are simply optical illusions. However, by measuring the angle of the arcs, scientists can determine the mass of the galaxies.

Frittelli develops methods to measure and map these hidden galaxies. Undergraduates help Frittelli prove her theories by calculating estimated measurements of the hidden galaxies. Using photographs taken by the Hubble Space Telescope, students compare their measurements with the gravitational lensing images to determine their accuracy.

“It’s very rewarding for them to see the results and understand it well enough to explain it to others,” says Frittelli.

Identifying New Breast Cancer Treatments

For more than 10 years, Dr. Kyle Selcer, associate professor of biology, has researched new treatments for breast cancer. He has developed a patented drug concept that was licensed to a Japanese pharmaceutical company overseeing its development.

Currently, he is investigating how the body regulates a key enzyme involved in breast cancer, so that he can develop ways to block the enzyme. His work also could result in easier, more reliable ways to diagnose different types of breast cancer.
Selcer’s research also focuses on the possible role of this enzyme in maintenance of bone in post-menopausal women. Osteoporosis often occurs due to a lack of estrogen stimulation of bone. Selcer is testing whether this enzyme’s activity can be manipulated to provide estrogen to bone cells without stimulating breast cancer cells.

Enabling the Body to Heal Itself Through Regenerative Medicine

Although physicians have been using medical implants, such as knee and hip replacements, for decades, there is a great need to improve the technology. Current implants fail over time and have to be replaced. This process can be particularly problematic for younger people who must cope with multiple replacement surgeries throughout their lives.

Dr. Ellen Gawalt, assistant professor of chemistry, is improving implant technology by harnessing the human body’s tremendous ability to heal itself. For example, if part of a soldier’s leg bone is destroyed in battle, it may be possible to implant a type of man-made scaffold that will help his or her body grow new bone to replace what’s missing. Gawalt develops special coatings that modify the implant’s surface, encouraging healthy cells to attach to the implant and grow new tissue.

“Students really enjoy this research because they can understand its direction and application,” says Gawalt.

Pioneering New Technology to Safeguard the Environment

If you recently checked your home for radon gas, you’re familiar with the work of Dr. H.M. “Skip” Kingston, professor of chemistry and environmental science. In the 1980s, as a congressional science fellow, he pioneered the scientific assessment that led to the current radon measurement laws. Today, he helps his students develop their skills and build their resumes by identifying new methods to measure environmental toxins.

Throughout his career, Kingston has developed many groundbreaking environmental testing techniques that have been adopted by the Environmental Protection Agency (EPA). For example, he established accurate methods for detecting chromium 6, the toxic material made famous in the movie Erin Brockovich.

His high-profile research has earned three spots in the R&D Magazine Top 100, which is an annual list of the top 100 scientific ideas. This recognition is a remarkable achievement, as the list has never featured research from any other university in the Pittsburgh area.

In fact, the EPA recently described one of his environmental tests as “revolutionary technology” and praised it for allowing the agency to “circumvent many obstacles that appeared insurmountable.”

“My responsibility is to make my students competitive,” says Kingston. “So when 100 resumes land on someone’s desk, my student is the one who is chosen.”
Professional Student Organizations

Science students at Duquesne come together in award-winning professional organizations, honor societies and other student groups.

Additionally, many students attend regional and national meetings for professional organizations. Some even present their undergraduate research in student poster sessions. These presentations introduce students to different views on their research and teach them how to defend their work. Many return to campus energized and focused by the new opportunities and ideas they discover at such meetings.

For example, Duquesne’s student chapter of the American Chemical Society has been winning accolades for more than 20 consecutive years. At the organization’s annual meeting, Duquesne students re-establish their outstanding reputation each year by earning awards for their research.

- Alpha Chi Sigma
- American Chemical Society Student Members
- Beta Beta Beta National Biological Honors Society
- Phi Sigma Lambda
- Society of Physics Students

Service Learning and Outreach

Service Learning is incorporated throughout the science curriculum, with the University Mission Statement in mind. Service Learning is a teaching methodology that combines three key concepts to enhance student learning and social responsibility.

- Academic instruction
- Meaningful service
- Critical reflective thinking

Because of its particular emphasis on students’ civic development; use of ongoing, structured reflection; and sustained, reciprocal partnerships between faculty and community partners, Service Learning differs significantly from other forms of community engagement such as volunteerism, internships or practicums.

The Project SEED program, run by the Department of Chemistry and Biochemistry, with funding from the American Chemical Society, offers research experiences to high school students in Pittsburgh from socio-economically challenged backgrounds. The program frequently results in these students choosing undergraduate study (majors) in the sciences.

A Project SEED participant presents her research at Duquesne University symposium.
Internship Opportunities

Pittsburgh’s scientific community provides an invaluable resource for the Bayer School of Natural and Environmental Sciences. Greater Pittsburgh is home to a number of research and industry giants, as well as a vast biomedical community, which welcomes Bayer School students for internships and employment.

Duquesne’s urban location, within a few miles of many corporate research centers, makes it feasible for students to participate in internships during the summer as well as throughout the school year.

Science Goes Hollywood:
Medical Film Series Educes General Audiences

You won’t rub elbows with A-list actors or attend red carpet premieres, but you will get a taste of film production if you participate in a community education project led by Dr. John Pollock, associate professor of biology. For several years, Duquesne students have collaborated with artists and technologists to produce planetarium films about tissue engineering for the Carnegie Science Center. Through computer animation technology, the films take viewers on a journey through the human body to understand how modern medical techniques can help the body repair itself. Students who work on the films learn to make complex medical concepts entertaining and easily understandable for general audiences.

China Trip Promotes Science and Culture

In addition to university-wide study abroad opportunities, the Bayer School of Natural and Environmental Sciences organizes its own international academic experiences. For example, science students have the opportunity to visit the People’s Republic of China, accompanied by Duquesne faculty, as well as faculty and students from several Chinese universities.

The agenda for the program is carefully designed to combine cultural experience with an academic curriculum. For instance, Duquesne students spend time testing the effects of acid rain on water and soil in the shadow of the ruined Great Wall. Students then compare these results to information gathered while in Pittsburgh.

In addition to making educational visits to facilities for wastewater treatment, garbage disposal, wildlife preservation and traditional Chinese medicine, they also make time for learning about the Chinese culture. Most participants gain three credits in Chinese Cultural Experience, a new course developed in response to the program, and an additional three science credits.
Success Awaits You

When you become a scientist, you join an elite group of highly skilled professionals who have the tools to succeed in a knowledge-based global economy – ensuring your skills will be in demand for decades to come.

According to the National Science Foundation’s National Science Board (NSB), which collects data on science and technology trends nationwide, three key trends will lead to a shortage of scientists and engineers:

- The number of jobs in the U.S. economy that require science and engineering training will grow,
- The number of U.S. citizens prepared for those jobs will, at best, remain level, and
- The availability of people from other countries who have science and engineering training will decline.

The NSB estimates the number of jobs requiring science and engineering skills in the U.S. labor force is growing almost five percent per year, compared with a little more than one percent growth for jobs in the overall economy.

Critical Nationwide Demand for STEM Teachers

As school enrollments surge and the baby-boom generation retires, the U.S. faces a teacher shortage – especially in math and science. Jade Leung, a 2005 Biology graduate, is a biology and physics teacher at Shaler Area High School, north of Pittsburgh. Leung enjoys teaching in a dynamic classroom setting where students are asking questions and performing lab experiments to gather and analyze data. “Education is very much like the field of science, because there is a constant pursuit of knowledge, because the field is always changing and growing as new ideas are explored and discovered,” says Leung.

In choosing one of the three tracks (Biology, Chemistry or Physics), students will combine a rigorous background in the basic science discipline with strong teacher training that together will enable them to become leaders in science education.

According to Leung, science teachers today need to be very energetic and dynamic. “In our world, science is expanding at a rapid rate, and teachers must be able to relate science to real world applications to motivate students,” Leung explains. “Teachers cannot expect students to be able to acquire these skills unless they have mastered them first in their university studies. Rigorous science programs are able to produce the best science teachers because these educators are coming from a background in which they have been fully immersed in hands-on research and understand how to set up experiments.”
Alumni Profiles

To show you how a science education from Duquesne transforms lives, we want to introduce you to some of our graduates.

Lauren Matosziuk

Lauren Matosziuk, B.S. Chemistry, 2008, is enrolled at Northwestern University, earning her Ph.D. in Chemistry, with a focus on theoretical chemistry and organic synthesis. A native of Altoona, Pa., Matosziuk chose Duquesne for undergraduate studies because it was a school that had a large number of scientific resources at its disposal, but in a smaller setting. “I liked that I could have science classes with fewer people, as most of my chemistry classes had around 15 or 20 students,” says Matosziuk.

As Matosziuk looks back at her experience at Duquesne University, she strongly feels the B.S. in Chemistry was extremely valuable, especially her relationships with the professors. “The faculty in the Department of Chemistry and Biochemistry are truly incredible – they place a lot of emphasis on teaching and helping their students, but still manage to be leading researchers in their fields,” explains Matosziuk.

When Matosziuk originally began undergraduate research, she was given a graduate mentor who taught her a tremendous amount about how to carry out and present research, always challenging her to try harder and achieve more than she could ever imagine.

“Today when I’m having an issue with my research, my first reaction is to consider what my advisor or my graduate mentor from Duquesne would say if I asked them what my next step should be,” Matosziuk said.

Upon completing her dissertation at Northwestern University, she is considering a career as a scientific journalist, where she can communicate scientific ideas and discoveries to the public.
Laramey Dille

Laramey Dille, B.A. Biochemistry, 2006, M.S. Forensic Science and Law, 2007, is a fingerprint examiner for Ideal Innovations Inc, a Department of Defense contractor in West Virginia.

“Along with being a fingerprint examiner, I also deal with other biometrics including face, palm and iris recognition,” explains Dille. “Duquesne prepared me for this job by giving me a wide range of knowledge within the science field and a well-rounded education from the Honors College.”

Dille chose Duquesne because it is one of few local schools that offers a forensic science program and has the added benefit of obtaining a Master of Science degree in five years instead of six. She credits the volunteer opportunities and social activities at Duquesne for helping her to develop leadership and communication skills and teaching her valuable life lessons.

In fall 2007, Dille taught her first course at Duquesne. Latent Fingerprint Analysis is about the comparison of fingerprints, as well as the biological formation of fingerprints and methods for developing latent prints.

Will Largen

Will Largen, B.S. Biology, 2007, is enrolled in the M.D. program at Temple University School of Medicine. Largen entered the Duquesne Medical Scholars Program, a competitive B.S./M.D. medical scholars program affiliated with Temple University. Knowing he has always wanted to practice medicine, he wanted an undergraduate experience in biology in a setting containing a high quality of research laboratories and where Ph.D. professors teach the science courses, with a large focus on education.

Having grown up in Millstone, N.J., Largen was impressed with Duquesne University, and with what the campus and the City of Pittsburgh have to offer. “I was uncertain as to which university was the best choice. Duquesne University was foreign to me, a mid-sized Catholic university in a city I had never visited.” He discovered that Duquesne was the appropriate choice. “As medical school continues to get harder and harder to gain acceptance to, this preliminary acceptance program sounded like the right fit for me,” says Largen.

Largen is grateful for his undergraduate preparation for a career in medicine. “Perhaps the most valuable aspect of my degree is that it instilled in me an insatiable curiosity for physiology, to further learn how life functions and adapts to its changing environment. My degree is essentially a springboard that rendered me excited to delve deeper into science.”

He offers serious advice to all science students. “The barometer of this degree’s value is in how well you take advantage of the opportunities Duquesne offers. Get involved in research, science honor societies, the summer undergraduate research program and the science-related abroad experiences.”

After completing his M.D. degree, Largen’s next steps are a residency in internal medicine, with the intent of fellowship training in infectious disease. His ultimate career goal is to operate a travel clinic geared toward patients who travel abroad.
Paul Stumpf

Paul Stumpf, B.S. Physics, 2002, S’02, has always been fascinated by the solar system, dating back to his first trip to Pittsburgh’s Buhl Planetarium. It led to his earning a bachelor’s degree in Physics from Duquesne University and his graduate degree in Aerospace Engineering from George Washington University. He fulfilled his goals and joined NASA’s Jet Propulsion Lab in California in 2004, and works on the Cassini project, the NASA mission to study Saturn.

Stumpf is a navigator of the robotic spacecraft. In this position, he works with models and software to determine the various maneuvers for the remote craft, then figures out the path to get the work done on the faraway planet. With an excited tone in his voice, Stumpf explains about fly-bys of the planet’s moons; experiments to determine the makeup of the rings and the atmosphere of Titan, the planet’s largest moon; and observations of the smaller moons of the Saturnian system, such as Enceladus, Rhea and Dione. “We can learn so much about the solar system from Saturn,” notes Stumpf, as he explains the importance of the mission. “We believe there are clues from Saturn on how our early solar system was formed.”

While at Duquesne, he delved into his studies and also found time to get intimately involved with the Department of Physics. He set up labs for student experiments and tutored other physics students. During this hectic time, he continued to volunteer at the Buhl Planetarium and was eventually hired to do various jobs at Pittsburgh’s Carnegie Science Center, including working on the laser and planetarium shows. “It was exciting to work at Buhl,” says Stumpf. “It had an aspect of space that fascinated me. It really was a dream come true.” Coincidentally, one of the shows that Stumpf produced and narrated focused on the Cassini mission, which was new at the time.

No matter where his career takes him, Stumpf makes time to keep in touch with Duquesne professors who taught him physics. “I learned the fundamentals at Duquesne,” explains Stumpf. “The interaction I had with the teachers and the hands-on approach – that’s where my education came from most.”
www.duq.edu/science

For more information or a personal tour, contact:

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