By choosing a major in the College of Arts and Sciences, you’ve set yourself on intertwined paths: toward deep knowledge in your particular major and toward wide-ranging experience with the habits of mind unique to the arts, humanities, social sciences, natural sciences and mathematics. As you acquire knowledge and experiences, your ability to ask questions, think critically about them and produce answers will be refined and renewed by what you learn in your field and across the curriculum, transforming your understanding of your major, your minor and the ways of thinking you encounter.

Applying these habits of mind to complex problems, you will learn to integrate knowledge and skills in experiential settings, which will foster your intellectual and personal growth beyond your college years.

Our graduates have the critical skills and knowledge the world needs. As you read their stories in this issue of CAScade, notice how our students dive deep into a subject to find both a passion and a career that makes a difference.

Sincerely,
Raymond Craig, Dean
College of Arts and Sciences

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bgsu.edu/cascade

cas • cade: a process whereby information or knowledge is successively passed on; the “cascade effect”
I hadn’t known that my creative skills could be applied to something like this, she said. “The problem-solving aspect of it appeals to me. I’m an analytical person and always had an interest in technology. I thought this is something I could be good at.

Still, I had no experience in it and it was daunting because there were so few other females in the program. And this is the story of so many women in computing I talk to. I loved it and my grades were A’s but there were times when I wondered if I should continue because not having that social aspect affected my confidence.

Nevertheless, she persisted. She got involved in—and eventually served as president of—BGSU’s Women in Computing (WIC), helping to jumpstart the idle student organization. She discovered a love of leadership and outreach by participating in Women in STEM events. And when faculty member Jadwiga Carlson launched a new course—CODE4her—designed to introduce middle-school girls to computer science, Knoop took a leadership role, tackling tasks like writing grant applications, training the mentors and designing new curricula for the project’s second year.

In CODE4her, BGWIC students use robots to teach girls in grades 5-8 the basic principles of computer programming. The course uses Sphero, a tennis ball-sized robot connected via Bluetooth to a mobile device. Teams of girls use blocks of code to direct the movement and behavior of the toy to roll in any direction, spin, flip, emit and dance to sounds, change color and compete with other robots in a Sphero Olympics.

The five-session course has been wildly successful, with families from throughout Ohio flocking to BGSU to provide their daughters with lessons in computer programming.

“CODE4her is about giving girls an opportunity to find out if computer science is something they want to pursue,” Carlson said. “There’s a lot of research about why there are so few women in computer science, and a lot of it comes from early experiences that boys have and girls don’t.” Knoop said. “CODE4her is about giving girls that exposure so they can find out if this is something they want to pursue. It’s also about giving them female role models to show them that computer programming is fun.”

In her time at the university, Knoop built her own community of women by re-energizing the BGWIC group, helping to build a network of women in the Computer Science department and attending conferences like the Grace Hopper Celebration of Women in Computing, the largest gathering of women technologists in the world. There, she interacted with women from companies like Google, Apple and Microsoft and heard a keynote presentation by one of the most famous women in computing, Melinda Gates.

“I’m now connected with women across the country,” Knoop said. “Community is so important for women in this industry—having that makes all the difference.”
Until "Hamilton: The American Musical," the Marquis de Lafayette was a mostly-forgotten historical figure in the U.S. It was there, on Broadway, that Lillian King became intrigued with "America's favorite fighting Frenchman." He was a gutsy young aristocrat and military officer energized by the rebellious spirit of the Revolutionary Wars. In 1777, he crossed the ocean at age 19 to avail himself to the cause and soon became friends with George Washington, Thomas Jefferson and Alexander Hamilton. Lafayette's cunning and daring saved the war many times, and he was extremely popular for decades.

"I found him to be a fascinating historical figure," King said. "The difference between him and most of the politicians was that he was not a politician by nature, he wasn't very crafty; he was honest to a fault. He was progressive in his thinking, supporting revolutions all around the world and hiding war refugees in his home. He kept the same ideals throughout his life."

A key player in both the American and French Revolutions, Lafayette crossed the Atlantic many times. King's quest to learn more about the "hero of two worlds" took her across the pond as well, as she set out to literally walk in his footsteps. With a major in Creative Writing and a minor in History, her Hoskins Global Scholarship project combined both of these interests: a journaling endeavor inspired by her travels, known as landscape writing.

She embarked on a month-long trek through France, Switzerland, Poland, Germany, Austria and the Czech Republic to get a sense of what it was like to travel as a nobleman through the European countryside. She went to palaces, prisons and cemeteries—places that represented key moments in Lafayette's life, and she had the sensation of him coming to life nearly 200 years after his death. She journaled as she journeyed, recording observations, facts and discoveries, anecdotes and poems. The expedition provided not only story ideas, but unfettered time to write in fresh environments. "I did lots of reading on the trains and got inspired by other books," King said. "I filled an entire moleskin journal that month. We get energized by our experiences, and I would not have been able to produce the material I did if I hadn't been there."

It was a productive trip from which she will continue to draw creatively for years. History continues to influence her work as she moves toward a career in fantasy fiction writing. Many of King's characters are contemporary yet buoyed by her interest in the past, often sharing names with famous figures.
Adam Smith's passion for nature and his desire to build a career around it might have prompted him to major in earth sciences. He decided to approach it from a different perspective. "Communities construct our surroundings," he said. "I chose Sociology because it studies society, processes, norms, why things happen at the group level. Environmental sociology looks at how communities can better use the environment."

With an individually planned minor in Sustainable and Environmental Development and Activism, he has immersed himself in experiences that fuel his interests. "I want to see how people and groups experience nature, how we form attachments to specific places, how we can preserve what we have," he said.

In addition to an internship in the BGSU Office of Sustainability, Smith landed a job he loves at Inspired by Nature, a permaculture farm in Weston, Ohio. A fusion of "permanent" and "agriculture," permaculture refers to using the land in ways that respect its natural ecosystem rather than extracting and depleting natural resources.

Working with freshwater, red-claw lobsters is one of his favorite duties at Inspired by Nature permaculture farm.

Food insecurity—unreliable access to healthy food—and how communities can help was the focus of an Alternative Break in Ann Arbor.

Exploring the Social Side of Science

Smith hiked the Appalachian Trail for 100 miles, crossing from Georgia into North Carolina before a knee injury forced him off the trail for now. "Around the Industrial Revolution, people were noticing that the things Emerson and Thoreau had written about were starting to disappear," he said. "Writers like Rachel Carson began talking about how economics and policies were negatively impacting the health of our environment and our opportunity to form a bond with nature the people did in the past. And that's where sociology starts to come in."

Exploring that very bond led Smith to embark on the Appalachian Trail in spring 2018. "I wanted to understand: What attaches a hiker to the trail? Is it the fellow hikers? The idea of the A.T.? The place itself? And I wanted to try to understand how the trail forms the surrounding communities, and how those communities form and maintain the trail."

He got heavily involved in BG Alternative Breaks (BGAB), in which students travel and immerse themselves in community projects. In 2017, his team worked with urban food providers in Ann Arbor, Michigan to re-roof a greenhouse while learning about the implications of food insecurity. In 2018, he stayed and worked with a family living "off the grid" on a North Carolina farmstead that produces all of its own food and energy.

"Working hands-on with community partners and as part of a team with other students has given me new perspectives on the issues we face in our communities and the solutions we can implement," he said.

Inspired by the experiences, he took a leadership role in BGAB and will be the site leader for a Break Away trip to Prince William Forest Park in Virginia, a program that will address the future of public lands and environmental stewardship.

Smith envisions a career in sustainability or urban planning. "I want to work alongside people who want to preserve what we have, and focus on local initiatives to create tight-knit communities that live closer to nature."

Working with Franklin, a red-claw lobster in one of his favorite duties at Inspired by Nature permaculture farm.

Food insecurity—unreliable access to healthy food—and how communities can help was the focus of an Alternative Break in Ann Arbor.

Dig it! The crew works on a gray water reuse system at an "off-the-grid" farm in the Appalachian Mountains.

The Culture of Nature
Clara Delgado always enjoyed art classes in high school. In fact, it was the class she liked best, which gave her reason to pursue an art degree in college.

But even knowing that she liked art didn’t give her—the daughter of Peruvian immigrants living in Toledo, Ohio—a clear career path. When she arrived at BGSU in 2015, she wasn’t sure where a college degree was going to lead her until someone put a camera in her hands. Instructor Chris Ridgeway was the first to teach her the language of photography. While Delgado saw herself as an “average student,” it wasn’t long before Ridgeway realized she had a knack for taking photographs.

“He ignited her complete attention to the medium,” said Lynn Whitney, chair of the studio division and head of the photography area in the School of Art.

In the “Sequential Photography” class, Delgado was introduced to the large format camera, which is physically and mentally demanding. Like a painter’s brush or a sculptor’s chisel, that camera quickly became the mainstay in her toolkit. It also became her voice. Quiet and soft-spoken, Delgado used the camera to make sense of two disparate worlds of a young Latina woman growing up in the Midwest. “The large format camera has been a stand-in for Clara’s insistence to be heard and understood,” Whitney said.

Delgado’s signature black-and-white photographs make a statement. Ambiguity is often captured in her photographs that depict regular moments in life. One of her favorite images is of her good friend and fellow art student Truman, as he sits in a stark bedroom with a light bulb glaring nearby.

She also learned a lot in one of Whitney’s special photography classes, “Community Projects in Photography,” that pairs BGSU students with individuals assisted through the local board of developmental disabilities. The class, which is as much about service learning as about photography, encourages the students to bring visibility to these individuals who lead full and productive lives but who are often overlooked in society.

The Mamiya C220, manufactured in Japan during the 1970s, is a medium format film camera that takes square photos.

Clara Delgado

His Bedroom, 2018
Gelatin silver print

Clara Delgado

Apex, 2018
Gelatin silver print

Clara Delgado connected with Stephen at a local coffee shop and with the camera. “We would just talk and make pictures,” she said of the friendship that developed throughout the class. “One of my favorite photos was of him leaning against a wall. It captures his personality honestly and authentically.”

Stephen’s portrait is a perfect example of Delgado’s talent. Whitney described her work: “She offers her images humbly, honestly and without pretense.” Her ability to take photographs with such depth contributed to her being selected to participate in the prestigious Yale Summer School of Art and Music in Norfolk, Connecticut as one of only 26 fellows representing art schools from around the country. It was an experience she couldn’t have imagined when she started the journey, and one that will pay dividends once she graduates.
Few students fully immerse themselves in the undergraduate experience like Leigh Dunewood. Not only were her four years at BGSU chock full of campus-related activities, her academic research and career plans are all related to the student experience.

A master’s degree in student affairs in higher education is the next step for the double major in Women’s, Gender & Sexuality Studies and Ethnic Studies.

“These two disciplines are so intertwined in me as a person—it’s a perfect fit,” she said. “The School of Cultural and Critical Studies [under which these programs are housed] asks us to center our identities and our histories at the forefront of all of our learning, to bring ourselves to the table. So in some respect I’m always bringing me to my work.”

Her ongoing research project involves studying the experiences of high-achieving students of color at predominantly white institutions.

“Honors education is not a space that was historically made for people with minoritized identities,” Dunewood said. “So often, a student of color will go through their university experience with no faculty members or peers of color. I’ve been looking at social and other support systems these students find to persist in environments that typically don’t reflect their identities.”

The high-energy McNair Scholar and Honors student held internships in the Office of Multicultural Affairs and Mercy College of Ohio Student Affairs, and jobs at the BGSU Career Center, Student Affairs and Academic Assessment offices. Volunteer roles included Resident Advisor, Ambassador and Student Orientation Advising and Registration Leader, which involved a year-long training culminating in an exhilarating day of student interaction.

“The goal is to make SGAR interesting and comfortable,” she said. “Of course, some students are nervous; it’s their first time away from home and they just want to talk about that, they want to make the connection and feel that they’re not alone. We’re trained how to facilitate those conversations and be that person who will listen to them.”

In 2016, Dunewood received the Rising Star Award from the National Association of Student Personnel Administrators. She attributes her success to the support she received at BGSU and she plans to pay it forward.

“All my mentors on campus have seen different things in me and have fostered it and helped develop me,” she said. “It’s great to have that village of support and I want to be a part of that for future students. I enjoy helping people figure out what they want to do, what makes them happy and how to get where they want to go.”

“The undergraduate experience can be really magical you get to be the driver’s seat of your life and learn about things that fulfill you and give you meaning. That’s called empowerment.”

RISING STAR
IN STUDENT AFFAIRS

“RISING STAR IN STUDENT AFFAIRS This busy dynamo identifies as an introvert. “One-on-one genuine connections give me the most energy.”

“Follow the leader” SGAR is a crash course in one day, making sure students are getting connected to people in their colleges, learning about financial aid and different resources on campus, making sure they see what college food looks like. We escort students everywhere so no one gets lost.”

This busy dynamo identifies as an introvert. “One-on-one genuine connections give me the most energy.”
An interest in forensic science brought Noah Froelich to BGSU. Degree programs in forensic science were launched in 2016, two years after the university and the Ohio Attorney General’s Bureau of Criminal Investigation (BCI) partnered to form the Center for the Future of Forensic Science on campus as a collaborative resource for teaching and research.

Froelich knew he would pursue a path in science and was intrigued by the new program. Together with a deep interest in chemistry, he opted for both and settled on a double major in Chemistry and Forensic Science with a specialization in trace evidence, small fragments like hair and fibers found at a crime scene that are analyzed to try to form a picture of what took place, when, by whom and how.

Shortly after beginning work on a 2017 summer undergraduate research fellowship with Dr. Travis Worst, a chemistry instructor and pharmacologist formerly with the FBI’s Counterterrorism and Forensic Science Research Unit, they were approached with a pressing issue.

Opioid overdoses kill 5,000 Ohioans each year. Fentanyl use spiked as prescription opioids were reigned in, and when the epidemic became a health emergency in 2017, it affected not only users but first responders like police officers and medical technicians. The powerful narcotic is a hundred times stronger than morphine and quickly absorbed through the skin, which means even curious contact can cause an adverse reaction. As the number of occupational overdoses rose in response to inadvertent exposure to fentanyl, the BCI reached out to BGSU researchers for help.

“We had a paper from China and knew there was a way to break down fentanyl, so we looked for commercially available products in the U.S. that might contain the active ingredient sodium percarbonate. We found it in OxiClean,” Froelich said.

Worst and Froelich designed a study and found the laundry detergent to be effective in cleaning up fentanyl spills. The BCI promptly issued a bulletin to more than 900 law enforcement agencies in Ohio recommending that OxiClean be on hand whenever the drug might be encountered.

Being involved in headline-making research is uncommon for an undergraduate student, as is co-authoring a related piece in the Journal of Forensic Sciences. “I really enjoy doing the research,” said Froelich. “The better we can make forensic science, the better our criminal justice system will be. When there’s less ambiguity, more bad guys go to jail, the innocent man is freed. It’s fulfilling that I can help with that.”

He’s currently driving research to find faster ways to analyze compounds that have been tweaked by clandestine labs to produce illicit street drugs chemically different enough from controlled substances to be considered legal.
Small-town roots provided both the impetus and the inspiration for McKayla Raines to travel. “I always felt like there was a world waiting for me outside of Canton and outside of Ohio,” she said. “After high school I didn’t know what I wanted to do, but my French teacher had talked about living in France and it made me crave that type of experience. So I took a gap year and went to Europe.”

Returning from France and Germany and eager to experience more, Raines chose a major in International Studies, with a focus on languages and education abroad already in her wheelhouse. She was drawn to BGSU because of La Maison Française (The French House), one of the living/learning communities on campus where students with shared interests share lodging and experiences.

For her Givens Fellowship, she traveled to Palestine to practice her Arabic, teach English and learn more about the Palestinian/Israeli conflict. She lived and bonded with a host family, participating in road trips, barbeques and weddings. She also visited refugee camps including al-Fawar, which houses 10,000 Palestinians who have been displaced from their homes. Listening to their stories, she learned that conditions are cramped and chaotic, with water shortages and random bouts of violence making it difficult to find real comfort in day-to-day living.

“I’m always in my element when I can see a city—like Bologna, Italy—from the highest point.”

“I’m drawn to working with populations in need,” Raines said. “I’ve had opportunities to meet and work with a variety of nationalities and ethnicities of asylum-seekers.”

For an Alternative Spring Break, she worked with the International Rescue Committee to help acclimate Syrian and Afghan asylum-seekers in Richmond, Virginia. She visited refugee homes, becoming close to a Syrian family whose father was learning English. She accompanied him to a job interview in order to assist with Arabic translation and helped him learn his numbers. Her junior year was spent studying abroad in Europe and volunteering with refugee organizations there. In France Raines met Kurdish people from Syria who were denied citizenship in their home country, many of whom crossed the Mediterranean on small boats without any guarantee what they might find on the other side. At the Berliner Stadtmission (Berlin City Mission), she worked in the daycare section of a refugee camp. It was eye-opening to realize what it must be like for young children to leave their homes, learn a new language and try to make sense of what’s happening.

“I want to have an impact on the lives of people who come from areas of conflict,” she said. “Lately, I’ve been thinking about persecuted ethnic minorities, stateless people, indigenous groups. I began to look at these people differently when I actually met them, and I want to help other people understand that refugees are just trying to live life as we all are.”
Ancestors of the native Anishinaabe people traveled west from the Atlantic coast, following a prophecy to find “a food that grows on water.” In the Great Lakes region, they found an aquatic grass that grows in shallow lakes and rivers, with an edible grain. This area has been inhabited by Chippewa, Ottawa, and Potawatomi tribes for centuries. Wild rice is not only at the heart of their migration story, it’s an integral component of their diet and culture.

A 2010 oil spill on the Kalamazoo River in southeast Michigan was a catalyst to take a more conclusive inventory of its wild rice beds. Though there was no record of rice beds in the spill area, there likely had been at one time and could be again. As part of the ongoing restoration project, BGSU is working with the Nottawaseppi Huron Band of the Potawatomi tribe to help reintroduce wild rice to rivers and streams near its reservation.

Kaylee Luke was on the way to completing her bachelor’s degree in Biology when she joined the conservation genetics project. In the field she collected leaf samples, and in the lab she put them through a process in which the material was liquefied, then rapidly heated and cooled to break apart the DNA. Then, individual segments were used to generate millions of copies of a DNA sequence to analyze the genetic diversity of the rice. There are two types of wild rice in the Kalamazoo River area and potentially a third, hybrid type.

“We have a large, robust data set,” Luke said. “We’re finding that the river’s ecosystem has high heterozygosity (genetic diversity), which is good in terms of helping to maximize the yield of the plants. The people want to preserve their culture and history, and we’re helping them better understand the rice; what they have, where it comes from, how sustainable their harvesting practices are. This work is in service to both an ecosystem and to a large group of people whose relationship to the land I really admire.”

Luke had such passion and aptitude for the work that her professor encouraged her to consider the Accelerated Bachelor’s to Master’s Program—also known as the “4+1 Program”—in which a graduate degree can be attained in one additional year of concentrated study. She’s currently pursuing a master’s degree in Applied Geospatial Science.

“Highly motivated, enthusiastic students can benefit from the 4+1 Program. It gives them a head start on their research as undergraduates, a longer period of time to collect and analyze data, and a huge advantage in the job market,” said Luke.

Learn more about the Accelerated Bachelor’s to Master’s Program: bgsu.edu/acceleratedprogram

Wild rice grows 6-8 feet tall and its leaves are a rich source of DNA. Once cut, they must be sealed and dry-iced immediately to slow the decay process.
Jabri Johnson’s initiation into theatre was something of an offshoot—related to what he already knew, but different. His involvement playing violin in high school band led to connections in the choir, and eventually to an audition for a musical. He landed the role of the Tin Man in a production of “The Wizard of Oz,” which set the course for his education and career.

“Try something new” became a mantra for the Theatre major with a specialization in Musical Theatre.

“My experiences have taught me the value of trying new things,” Johnson said. “There’s so much to theatre besides acting on stage and you never know what different facets you’ll enjoy. The theatre program at BGSU gave me the opportunity and the freedom to try many things and the chance to seriously grow as an artist.”

This internship once he received the Bravo Theatre and Film Award in his junior and senior years. Recipients of the scholarship are expected to work up to 300 hours per semester, which may sound daunting but in truth is not unusual for a theatre major who might have rehearsals six days a week for eight weeks before a show opens. Johnson appeared in numerous productions as an actor, and worked on two shows in a directorial role. He worked backstage in the Wolfe Center scene shop to build sets for various productions.

Leader is another role he played, serving as president of the Musical Theatre Students organization and of Broadway Cares BG, a group that raises money for AIDS relief through an event featuring skits, cabaret performances and a Broadway memorabilia auction.

The summer before his senior year he studied at the Barn Theatre School in Michigan. Apprenticeships there are devoted to all aspects of professional theatre production like carpentry and set construction, lighting, costume and stage management. And one of the shows in which he performed involved expanding his repertoire even further, into dancing.

“Disney’s ‘Newsies’ was such a fun show,” he said. “Normally you have to be an experienced dancer with all the acrobatic moves, so just to get the chance to do it was cool.”

Following graduation he accepted a year-long apprenticeship at Florida Studio Theatre where his focus will be on performing, new play development and secondary roles such as scene carpentry and backstage hand.

“I want to be a jack of all trades in the industry,” said Johnson. “Maybe for a month I have an engagement as an actor in a show, and the next month I’m directing something. Then I work backstage for another show, and then I get a gig to do some voiceover work. The more you know how to do, the more marketable you are and the more jobs are available to you.”
Undergraduate Majors

BGSU College of Arts and Sciences

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Art

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Biochemistry

Marine

Hydrogeology

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Economics

English

Latin

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Psychology

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Pre-Professional Preparation

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Pre-Oberal

Pre-Law

Pre-Medicine (M.D. or O.D.)

Pre-Mercury Science

Pre-Ocupational Therapy

Pre-Optometry

Pre-Pharmacy

Pre-Physician Assistant

Pre-Veterinary Medicine

German

History

International Studies

Journalism

Broadcast

Multimedia

Public Relations

Latin

Liberal Studies

Mathematics

Music

Natural Science

Philosophy

Philosophy, Politics, Economics & Law (PPLE)

Physics

Political Science

Popular Culture

Psychology

Sociology

Software Engineering

Spanish

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Acting/Directing

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Music/ Theatre

Women’s, Gender & Sexual Studies

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National leader in faculty research;

More than 9,000 enrolled;

90% of entering freshmen receive financial aid;

More than 25 million in scholarships offered to incoming students;

Students from 50 states and 70 countries;

Nearly 80% of population is ethnic and racial minority;

Students from 50 states and 70 countries;

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