Harnessing the beauty and power of disorder
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Washington University in St. Louis
Arts & Sciences

Spring 2022

Justice and Care at COP26

At COP26, the 2021 UN Climate Change Conference in Glasgow, Scotland, demonstrators march in support of climate justice. A surging crowd of many different ages and nationalities, drawn together by numerous causes, stands under a mural of a mother and child. (Photo by Bea Addis, second-year graduate student in sociocultural anthropology)

Spring 2022

The *Ampersand* magazine shares stories of incredible people, research, and ideas in Arts & Sciences at Washington University in St. Louis. It is published semiannually and distributed to alumni, faculty, students, staff, and friends of Arts & Sciences.

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OUR SIGNATURE INITIATIVES

- Incubator for Transdisciplinary Futures
- Transdisciplinary Institute in Applied Data Sciences (TRIADS)
- Program in Public Scholarship
- Center for the Literary Arts
- Living Earth Collaborative 2.0
- Center for Quantum Leaps
- Undergraduate Program in Global Health
- Literacies for Life and Career

Learn more about our plan.

artsci.wustl.edu/Decade

HELP ADVANCE OUR MISSION

artsci.wustl.edu/Support

We've launched a transformative decade.

Spring is here, and our campus is absolutely brimming with energy and camaraderie. Frisbee on Mudd Field, lively discussions in the Quad, sunny lunch breaks in Tisch Park – the atmosphere is truly invigorating.

The energy extends beyond the spring weather, though. This is an immensely exciting time for our school. Five months ago, we launched our strategic plan, *A Transformative Decade: Convergence, Creativity, Community*. Our plan is filled with innovative ideas and thoughtful new directions. It charts a path for the next ten years of Arts & Sciences, and it sets us up for success far beyond that decade. Our campus community is embracing this bold vision, and I hope that you, too, will be inspired as we bring our ideas to life.

We explore one of our transformative initiatives within these pages. In "A better approach to career and life preparation," page 10, Vice Dean Erin McGlothlin shares how we're reframing our undergraduate curriculum to help students develop their own personal understanding of the value of the liberal arts, further equipping them for lives beyond WashU. Our work in this initiative will empower students to pursue fulfilling careers, participate meaningfully in their communities, and navigate the world as informed and responsible citizens, for the betterment of society. It's an ambitious goal, and after you read Erin's piece, you'll know we can do it.

We'll also lead transformative research in quantum technologies and advanced instrumentation. In "The power of quantum disorder," page 17, physicist Kater Murch describes what we stand to gain by harnessing the disorder of quantum systems and the power of quantum computing. Leveraging the expertise of Kater and others in Arts & Sciences, along with colleagues in McKelvey Engineering and the School of Medicine, our new Center for Quantum Leaps will spur novel research and field-changing collaborations across an array of disciplines, from astrophysics to drug discovery.

Beyond the inspiring ideas in our labs and classrooms, we'll also bolster our physical presence on the Danforth Campus, creating new spaces to foster community and celebrate intellectual exchange. You can see a preview of what's to come on page 6, and I'm looking forward to sharing more details with you later in the year.

This transformative decade will ensure that Arts & Sciences – and Washington University as a whole – leads the way toward a better, healthier, and more equitable society for decades to come. The work we're undertaking builds on progress forged by you, our community of alumni and supporters, and I'm delighted to have you as partners in this journey toward an even brighter future.

Warmly,

Feng Sheng Hu

Dean of Arts & Sciences
Lucille P. Markey Distinguished Professor
Washington University in St. Louis

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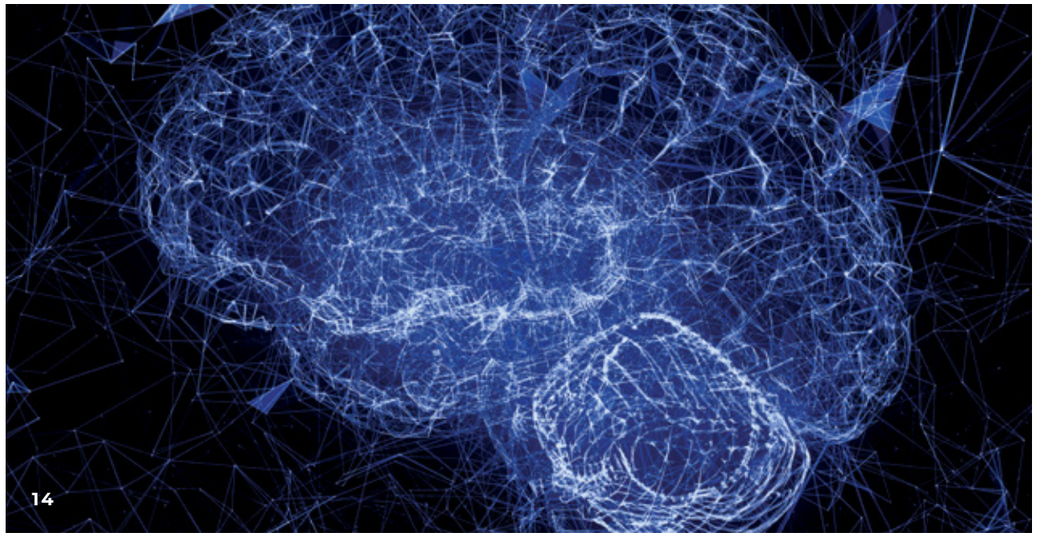

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Scholars have devoted entire careers to defining order within the world. But what can its antithesis tell us? Research from quantum computing to mass culture explores the beauty and power of harnessing disorder.

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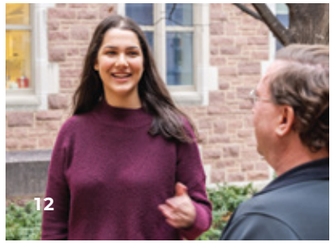
Vice Dean Erin McGlothlin explains how a reframing of undergraduate education will lead to better career preparation, more skilled and adept graduates, and a healthier society.



Student Spotlight: Biotech and beyond

Senior biology major Gaby Smith describes how the hands-on, multidisciplinary approach of the Biotech Explorers Pathway has shaped her college experience and her career aspirations.

Study Session: Think inside the box

Ian Bogost, director and professor of film and media studies, rethinks notions of creativity and play — and the false dichotomy of play and work.

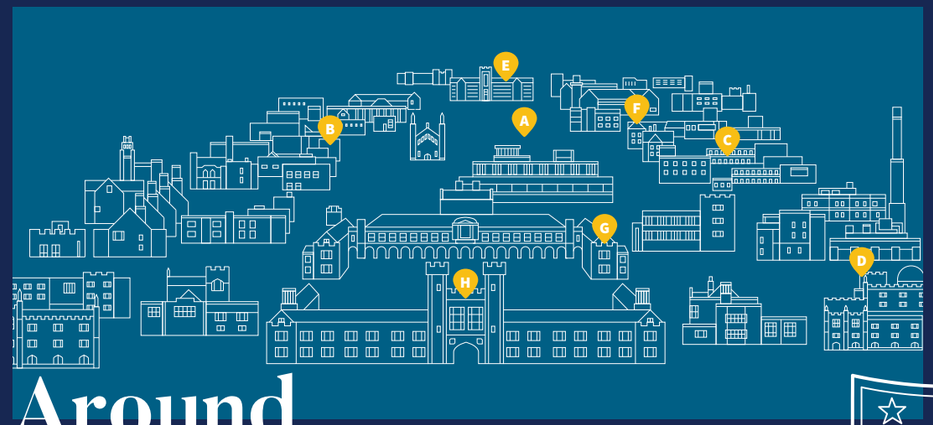
Alumni Spotlight: The interpretation of risk

Fahim Masoud, AB '13, who served as an interpreter for the U.S. Army in Afghanistan, reflects on how WashU helped shape his identity.

Faculty bookshelf

New faculty titles delve into the politics of state supreme courts, best men at weddings, a lifetime of poetry, and more.

artsci.wustl.edu/ampersand



Around the Quad

News, milestones, and spotlights from across Arts & Sciences at Washington University in St. Louis

Arts & Sciences

Building for the future A

"As an alumnus of the school of Arts & Sciences, it is with great excitement that I bring you news that will, I believe, transform Arts & Sciences at Washington University," Chancellor Andrew Martin said Dec. 6, 2021. Martin went on to announce plans for a new state-of-the-art building for Arts & Sciences at the heart of the Danforth Campus.

"The new building presents an extraordinary opportunity for Arts & Sciences to enhance its academic distinction by housing premier departments and programs, support its commitment to diversity and inclusion, strengthen student-facing academic services and resources, and showcase its vibrant intellectual community through signature event and gathering spaces," Martin added.

The new 90,000–120,000 square-foot building and the surrounding landscape will create a new quad west of Olin Library and north of Graham Chapel. The announcement of the building coincided with the release of the Arts & Sciences Strategic Plan (see p. 28), contributing to a climate of excitement about the future of the school. More details, including an architect and timeline, will be shared later this year.

Four guiding principles

- **Enhance academic distinction**
- **Support diversity and inclusion**
- **Bolster student-facing resources**
- **Showcase intellectual community**

Department of Biology

Brainy birds fare better under climate change B

Many North American migratory birds are shrinking in size as temperatures have warmed over the past 40 years. But those with very big brains, relative to their body size, did not shrink as much as smaller-brained birds, according to new research from Justin Baldwin, a PhD candidate working with biologist Carlos Botero. Their study is the first to directly link cognitive power with a physical response to human-made climate change.

Arts & Sciences

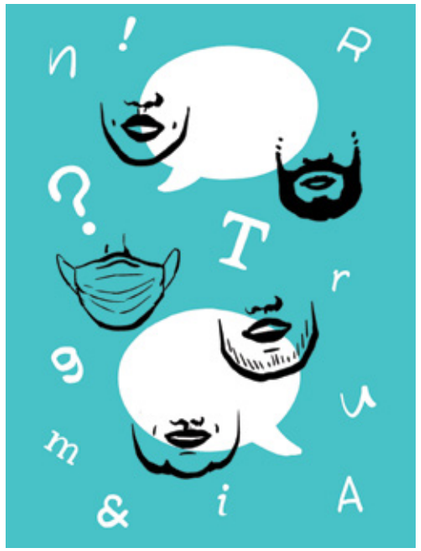
Office of Graduate Studies in Arts & Sciences launches C

As part of an ongoing reorganization of graduate education at WashU led by the Provost's Office, the Office of Graduate Studies (OGS) in Arts & Sciences was created to enhance the administration of graduate programs and provide more targeted support for Arts & Sciences' master's and doctoral students. A hub for graduate student support, the newly launched OGS will promote a higher degree of student and faculty engagement in graduate education and professional development.

Arts & Sciences

A Marshall Scholar D

Senior Abdullah Kuziez, a biophysics and biochemistry major, has received the prestigious Marshall Scholarship. This highly competitive award provides a select number of American students the opportunity to earn an advanced degree in the United Kingdom. At Oxford University next year, Kuziez plans to investigate the intersection of what he calls his passions – cancer science and synthetic biology. While at Washington University, he has also shown deep commitment to the St. Louis community, providing comfort to cancer patients at Siteman Cancer Center and teaching AP chemistry and Arabic to local high school students.



(Illustration: Leon Zhao)

Read about Lucas' research.

artsci.wustl.edu/speech

Department of Political Science

It's not what you say, it's how you say it

Christopher Lucas situates his research at the forefront of big data and political science, addressing long-standing questions using new computational methods and previously untapped datasets – including the sound of political speech. Lucas developed a tool that extends approaches in statistics and computer science to analyze the speech and dialogue at the heart of political communication. His audio-based measurements significantly outperformed earlier text-based work on predicting judicial behavior based only on a justice's expression of skepticism during oral arguments.

> It's not an exaggeration to say there's been a revolution in the study of political science in the last two decades.
>
> **CHRISTOPHER LUCAS**
> Assistant Professor of Political Science

Departments of Chemistry and Earth and Planetary Sciences

Diversifying STEM

With the support of the David and Lucile Packard Foundation, climate scientist Bronwen Konecky and chemists Jonathan Barnes and Richard Loomis are launching new initiatives to increase diversity in STEM. Konecky is piloting a new program to attract and support underrepresented students in the geosciences and prepare them for further studies and careers in the field. Barnes and Loomis are expanding chemistry's efforts to recruit, mentor, support, and train outstanding scientists from diverse backgrounds.

Department of English

Bucking the trend

Over the last three years, WashU's undergraduate English major has grown by about 30 percent – defying nationwide narratives. The department changed the way it recruits, supports, and communicates with students, building interdisciplinary programs and helping current students connect with alumni in numerous fields. Students can now also major in creative writing within the English major, which allows students to take classes with faculty from one of the country's top-ranked writing programs.

Vince Sherry, chair of English in Arts & Sciences, leads an undergraduate seminar on modern literature in Wrighton Hall. (Photo: Erin Lewis)

Rochelle P. Walensky, AB '91, MD, MPH, director of the Centers for Disease Control and Prevention, joined Dean Feng Sheng Hu in St. Louis on March 2, 2022, to discuss how her education at WashU prepared her for her career and leadership in public health. (Photo: Sid Hastings)

Arts & Sciences

AAAS honors seven scientists

Seven faculty members in Arts & Sciences are among 564 new fellows selected by the American Association for the Advancement of Science (AAAS), the world's largest general scientific society and publisher of the Science family of journals. Being named a AAAS fellow is among the most distinct honors within the scientific community.

Leonard Green, professor of psychology and of economics, was tapped for his distinguished contributions to the fields of behavioral economics and behavior analysis.

Elizabeth S. Haswell, professor of biology, identified mechanisms by which plant cells sense and respond to physical forces and has created an inclusive and diverse group, which expands the scientific community and communicates new knowledge.

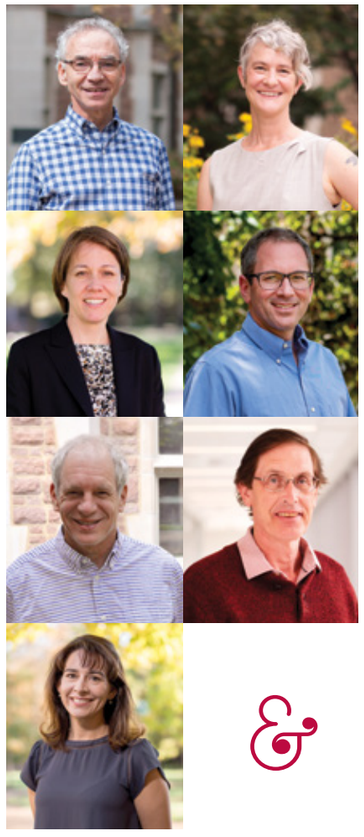
Sophia E. Hayes, professor of chemistry and interim vice dean of graduate education, is being honored for leadership leveraging solid-state nuclear magnetic resonance on collaborative teams as a resource for materials science and for science communication.

Erik Herzog, professor of biology and the Viktor Hamburger Distinguished Professor, was tapped for demonstrating the importance and mechanisms of clocks and timing to all aspects of life.

Mark A. McDaniel, director of the Center for Integrative Research on Cognition, Learning, and Education and professor of psychological and brain sciences, is being honored for contributions to the study of prospective memory and for his inspiring work on applying cognitive psychology to enhance educational effectiveness.

Jay W. Ponder, professor of chemistry in Arts & Sciences and of biochemistry and molecular biophysics in the School of Medicine, has made distinguished contributions to teaching and research in the field of computational chemistry and molecular modeling.

Crickette Sanz, professor of biological anthropology, is being honored for outstanding work on primates, particularly chimpanzees, as they relate to their environment.



CONVERSATION

A better approach to career and life preparation

Vice Dean Erin McGlothlin discusses the new literacies initiative for undergraduate education.

Vice Dean Erin McGlothlin meets with senior Gabi Senno at Whispers Cafe inside Olin Library. (Photo: Sean Garcia)

Students attend a Spanish course led by Jody Doran, senior lecturer and assistant director of undergraduate studies in Spanish. (Photo: Sean Garcia)

What does it mean to be literate in the 21st century? As part of a signature initiative of the Arts & Sciences Strategic Plan, the College of Arts & Sciences will soon begin to implement the "literacies for life and career" initiative for undergraduates. According to Erin McGlothlin, vice dean of undergraduate affairs and professor of German and Jewish studies, this seemingly simple reframing of how students and faculty approach the knowledge and skills already offered in Arts & Sciences courses will lead to better career preparation, more skilled and adept graduates, and, most ambitiously, the basis for a healthier society overall.

What are "literacies for life and career"?

The idea of a liberal arts education is that it offers more than subject-specific expertise – it prepares students to engage with the world in a complex and informed way. We already offer this kind of broad preparation in Arts & Sciences, but students aren't always aware of the skills and knowledge they're gaining above and beyond scholarly subject areas. That's where literacies come in. By associating particular courses with relevant literacies, we aim to prepare students to better articulate the fact that, in addition to learning disciplinary fundamentals, they're gaining broader, more practically applicable literacies and competencies from their coursework.

> It's not just about living a good life or having a lucrative career. It's about being a responsible and ethical agent in the world.

Let me give you an example of what this looks like. Abram Van Engen, professor of English (and one of the co-chairs of the Arts & Sciences Strategic Planning Steering Committee), is an expert on 17th-century American Puritanism. He regularly teaches a 300-level course called "City on a Hill: The Concept and Culture of American Exceptionalism," which focuses in large part on the Puritan origins of American culture through exploration of foundational texts. Students learn about Puritan history and political thought, but they also gain some grounding in the crucial economic organization of Puritan society, which helps them to understand some of the most fundamental economic concepts that underpin contemporary American cultural and economic life. His course transmits a form of economic literacy.

This initiative would ask instructors like Abram to identify, augment, and signpost existing literacies through the syllabus, assignments, and assessments. The idea is that any given course might have one or two associated literacy-based characteristics. When students engage in their coursework, they should understand that they're gaining knowledge and skills that exceed disciplinary content or methodologies.

Why is it so important that students become aware that they're gaining literacies in diverse areas?

When students learn to articulate their acquisition of literacies, they begin to purposively develop their own narrative about what they're getting from their liberal arts education that they can then take into the post-graduate world. Consciously creating that narrative allows them, even in a cover letter to a potential employer, to say something along the lines of, "Not only did I major in biology, but I have all these other things that I know and can analyze and can do. I'm someone who understands the very complex ways in which knowledge is created and disseminated."

Thinking this way may also help students gravitate toward particular careers or jobs. If a student sees their own interests and strengths in a particular set of proficiencies, they may be able to combine that into a sense of direction for their professional life. Our colleagues in the Career Center are very enthusiastic about this initiative.

How will you put the initiative into action?

The logical place for us to start is first-year seminars and lower-level classes, many of which already feature the acquisition of diverse knowledge and skills. We can then extend the approach to upper-level, major, and capstone courses. The idea is to offer incentives to faculty so that we can slowly establish this in a phased process across the board. I'd like to build this awareness into the four-year advising process, as well. The key principles here are thoughtful integration, intentionality, and sustainability rather than disruption or change for change's sake. This initiative can have a transformative impact on undergraduate education by leveraging the strengths of the existing Arts & Sciences curriculum rather than overhauling it.

How do literacies fit into the broader goals of the Arts & Sciences Strategic Plan?

I think the tide of education has turned in the last decades toward the extreme end of individualism, and it's moved away from the contribution that universities make to society through the education of our students. We've mostly abdicated the goal of bettering society through the liberal arts education – not to say that was a perfect idea before, because it had its problems – but if we are framing education as something that benefits only the individual, then we're basically asking our students to think solely in terms of what they get out of their education individually. But the goals of the strategic plan also focus on what we, as an institution, are able to contribute to the world we live in. An Arts & Sciences education can create a positive force in the world through the people we graduate, who can navigate the world's problems in informed, nuanced, and ethically responsible ways. We as an institution want our graduates to be able to evaluate arguments, political rhetoric, scientific studies, etc., and then marshal their analysis of such information in their responses and actions.

In Arts & Sciences, we can produce graduates who make an impact in the world, who can be a mitigating force against conspiracy theories, against misinformation, against bad-faith exploitation or manipulation of people. It's not just about living a good life or having a lucrative career. It's about being a responsible and ethical agent in the world. I know it sounds a little pie in the sky, but I really believe in it. We can do it through the liberal arts curriculum. We're already poised to do that. It is at the heart of who we are.

STUDENT SPOTLIGHT

Biotech and beyond

The Biotech Explorers Pathway (BEP), an Ampersand first-year program, engages students with the science of biotechnology and the process of moving discoveries from the lab into the real world. Senior biochemistry major Gaby Smith describes how BEP's hands-on, multidisciplinary approach shaped her time as an undergraduate and her career aspirations.

STORY BY SHAWN BALLARD

Photo by Sean Garcia

Senior biochemistry major Gaby Smith talks with her mentor, Joe Jez, the Spencer T. Olin Professor, chair of the Department of Biology, and leader of the Ampersand program Biotech Explorers Pathway.

Gaby Smith always knew she was interested in medicine. Four years ago, while still in high school, she spied an opportunity at Washington University that not only dovetailed nicely with her existing interest in health sciences but also offered interesting field trips and options for independent work: the Biotech Explorers Pathway (BEP). She accepted a spot in the Class of 2022 and signed up for the two-year program, not yet knowing the extent to which BEP would shape her WashU experience.

"Before Biotech Explorers, I didn't understand how a drug gets FDA approval, or the role of academia in collaborating with industry, financial partners, and legal counsel," said Smith, now a senior majoring in biochemistry with a minor in women, gender, and sexuality studies. "BEP helped me understand the big picture, key stakeholders, and what role I wanted to play as an aspiring physician-scientist in this process."

The Biotech Explorers Pathway was developed and launched in 2015 by Joe Jez, the Spencer T. Olin Professor and chair of the Department of Biology, through a Howard Hughes Medical Institute Professors grant. The program's goal is to help students understand the interconnections among science, medicine, technology, and business. With BEP, Jez saw an opportunity to correct the compartmentalization that often happens early in undergraduate STEM education, while highlighting how scientific advances lead to real-world applications and engaging students' curiosity through team-based project development.

"We tend to teach our STEM majors in a compartmentalized way and hope they see how it fits together when they're juniors or seniors," Jez said. "If you could give people a story up front about how all these things that seemed to be completely unconnected really are connected, starting their first year, would that help keep students in the sciences? Would it also influence a little bit of their future direction?"

The first year of the Biotech Explorers Pathway includes opportunities for students to study current biotechnology innovations in depth: What problem does a new technology aim to address? What are its implications in the market? What's the science behind the innovation? Smith and her classmates collaborated to look at novel drugs, therapeutics, and other technologies from multiple perspectives, leveraging their interests in various disciplines, such as computer science, economics, engineering, and of course biology, to develop a more complete view of the biotech industry.

Expanding beyond the classroom, BEP students also explore off-campus spaces that support cutting-edge research in St. Louis, such as the Cortex Innovation Community. "So many biotech opportunities are right here, just a few miles from campus," Smith said. "It was so great to go out into the community and visit this hub of innovation, see the facilities, and talk to the founders of these companies about how they got involved, how they took their ideas to reality, and how they were ultimately able to build a successful biotech company."

These observations of the people and technology behind the biotech industry led Smith into the second year of the program, when students are asked to pitch and develop their own innovations to address a pressing problem facing society. Smith's project focused on developing a fetal lactate monitor to help reduce the rate of C-sections, which carry risks for mothers and newborn babies. She saw an opportunity to develop a device that might be implemented to reduce mortality and improve maternal and fetal outcomes during labor and delivery. The experience was transformative.

"This was the first time where I independently took something I had read about that I knew was an issue in medicine, and thought to myself, what would be something that could actually help solve this problem?" Smith recalled. "It was the first and really only time in my academic career where I've had such ownership over a project and had to think creatively about how to take it from idea to implementation."

Working on the project spurred Smith's interest in interdisciplinary research in fetal medicine, which is further supplemented by her minor in women, gender, and sexuality studies. "I had the chance to learn how people's identities, such as their gender and sexuality, can influence their lived experiences," Smith explained. Her insights from the project reaffirmed her long-term goal to collaborate as a physician-scientist with partners in academia and industry to develop solutions to improve patient care, outcomes, and quality of life.

For their projects, BEP students consider granular elements like production cost and marketability, in addition to the scientific feasibility of their ideas. The process even includes a conversation with an attorney to discuss features of their innovations that may be patentable. After time spent refining their concepts, students present the projects to a panel of judges.

"BEP students are exceptional," said Marta Wegorzewska, science writer in the Department of Biology and co-instructor for the second year of BEP. "Even in the past two years, when judged presentations happened via Zoom, the students did as well as in any other year. It really speaks to how impressive BEP students are."

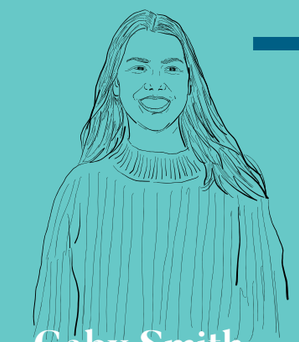
Smith credits her time in BEP with supporting her other activities around campus, including leadership positions serving as speaker of the Student Union Senate and as one of two undergraduate representatives to the Board of Trustees. She is particularly proud of her advocacy for increased student access to mental health resources on campus, which were especially critical during the "Zoom academic year."

"I felt empowered to take on these high-profile endeavors by my mentor, Joe Jez, as well as by my experiences in Biotech Explorers presenting to large groups, speaking up for what I care about, and developing creative solutions to important problems," Smith said. "When you come to WashU, you hope to form close connections with your advisors and professors and find someone who will encourage you to be as successful as you can be. Joe has been that person for me. He has been extremely supportive of me throughout my WashU experience. That relationship started and grew from my first day in BEP."

"Gaby is probably one of the top students I've interacted with as a faculty member at WashU," Jez said. "She makes so many things look easy."

After graduation, Smith plans to spend a year conducting research in pediatric medicine before entering medical school. In her career in pediatrics, she looks forward to incorporating research and advocacy with her clinical activities.

"I want to be on the cutting edge of developing new therapeutics and treatments for children, taking what I see in clinic and bringing it back to the lab and vice versa. I want to drive innovation and collaboration to improve biomedicine at large," Smith said. "BEP has been crucial in shaping my goals as an aspiring physician. Being exposed to so many trajectories and opportunities has expanded my ideas about what I can do in the future and how I can effect change in society."



Gaby Smith

HOMETOWN:
Newton, Mass.

MAJOR:
Biochemistry

MINOR:
Women, Gender, and Sexuality Studies

BEYOND THE CLASSROOM:
Speaker of the Student Union Senate, Board of Trustees undergraduate representative, research assistant in the Lavine Lab, Chief Pediatric Emergency Medicine Research Associate

PROFESSIONAL GOAL:
Physician-Scientist

AMPERSAND PROGRAM:
Biotech Explorers Pathway

PROGRAM TAKEAWAY:

"It's the kind of experience I hope all WashU students are able to find, whether it's in Biotech Explorers, another Ampersand program, or anything else that ignites their interest. It's something that will stick with me well beyond my years here."

Join the conversation!

Learn more about the exciting connections BEP students are finding between the lab and real world. Join us for a panel with former BEP students and Joe Jez at 12 p.m. CDT on June 21. For more details and to register, visit:

artsci.wustl.edu/BiotechEvent

FEATURES

DISORDER:

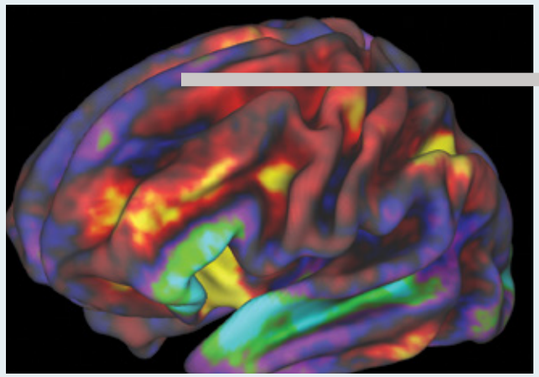
a study in five parts

Volumes of ink, hordes of data, and entire careers have been devoted to defining order within the world. But what can order's antithesis tell us? From emerging mass cultures to quantum computing, five faculty members explore the meaning of disorder – and what we can gain by harnessing its beauty and power.

Read more from our experts.

artsci.wustl.edu/Disorder

The disordered brain



fMRI image of a preteen brain while child performs a memory task from the Adolescent Brain and Cognitive Development Study, on which Barch is an investigator.

BY DEANNA BARCH / as told to Claire Gauen

The field of mental health research tends to think of mental illness as a disorder. The general perspective is that if our brains and our cognitive and emotional processes are all working as intended, we wouldn't develop things like depression or anxiety or schizophrenia. But I think that is, frankly, an overly simplistic way of thinking about mental illness. There's so much variability among humans that it is often difficult to say what is or what is not disorder.

This is especially true for children. In my lab and other labs at WashU, we've been looking into psychotic-like experiences younger and younger in life. There are many experiences that younger kids have that are typical and normative. For example, take imaginary friends. For most kids, having an imaginary friend is a really positive thing, and we would never want to say that was problematic. But if you're talking to a 12-year-old who is interacting with someone in their mind that is mean and awful to them, and it's very distressing – that's not the same experience. When these experiences aren't transient in the way that we would expect them to be, and when they start getting in the way of having the kinds of relationships that kids want to have, that's when we want to help them figure out how to either not have these experiences or change them in some way.

One complexity is that we know that there are a variety of environmental factors that can impact brain development and can put people at risk for being more likely to develop mental illness. Some of these changes in the brain might actually be very adaptive in the moment. For example, there are ways in which children cope with early adversity that likely change their brain development and the way they process things in the world. If you're in an abusive relationship with a caretaker, it's going to be protective for the brain to kind of tap itself down because it's really hard to be constantly in a high stress response situation. So, is that disorder? Or is it that your brain and mental systems have adapted themselves to challenging situations?

In my lab, we are trying to understand when we should be concerned about these experiences. We're identifying factors like whether the experiences last over multiple years, whether they are distressing to the kids, and whether they are getting in the way of them being able to concentrate at school. From there, we're starting to think about how we could better screen for kids who are having these early experiences that might be problematic. We do a better job as a field, in schools and pediatricians' offices, at screening for signs and symptoms of autism, depression, and suicidality, but we very rarely ever screen for problematic early evidence of psychosis. We are trying to develop tools that would be useful in that regard – short, accurate predictors – and thinking about how we can work with public health systems to start to incorporate that kind of screening early on.

The earlier we think about prevention or intervention to help tip kids back into pathways that help them have experiences that promote healthy development, brain development, social development, and educational development, the more likely it is that we're going to be able to help them live the lives that they want to live.

Professor Barch studies brain function and cognitive and language deficits as well as the neurobiological mechanisms that contribute to such deficits.

Urban disorder at the turn of the century

BY DOUGLAS FLOWE / as told to John Moore

A busy street outside Public School 89 in Harlem in 1929. (Photo: Irving Browning/Patricia D. Klingenstein Library, New-York Historical Society)

In the early 20th century, a new mass culture emerged in the United States. Amid theaters, bars, saloons, and amusement parks, people discovered spaces where different races and genders sometimes came together that had previously lived separately. Although African Americans were not always invited to the party, ethnicities and cultures mixed in ways rarely seen before. For some, this new culture made a city like New York an amazing mecca of modernity. For others, it was a dangerous, unfamiliar culture of amalgamation, interracial sex, and moral decay. In short, they saw the new mass culture as urban disorder that needed to be reorganized.

In my first book, *Uncontrollable Blackness: African American Men and Criminality in Jim Crow New York*, I explore how Black men responded to the tactics civic leaders, reformers, and police officials employed to resegregate the crowds and patrol the boundaries between them. Worried about interracial closeness and the behaviors they associated with it, progressive reformers and politicians used private and public resources to transform the lives of New Yorkers whom they saw as disorderly. Modern police forces as we know them today also emerged at that time, and Black men could be arrested for disorderly conduct for something as simple as standing on the corner in the wrong neighborhood.

Reformers were worried not only about racial plurality but also about how these new urban spaces brought down gender barriers. As single wage laborers, women entered the public realm in new ways, looking to enjoy urban amusements like everyone else. Race made this phenomenon even more alarming for reformers since they dreaded the idea those women might come into contact with Black men.

> They saw the new mass culture as urban disorder that needed to be reorganized.

I write about Roosevelt Sharp, an African American man who was charged in 1906 with abducting white women and forcing them into sex slavery in places typically called "disorderly houses," in the legal and popular parlance of the day.

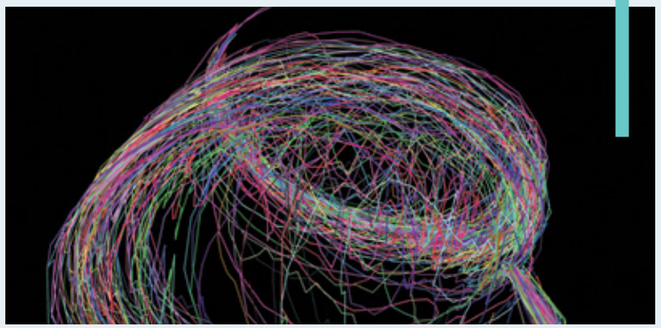
Sharp indeed ran a brothel and likely had exploitative and violent relationships with the women in his house. Yet, as my research discovered, within that lopsided relationship, the women and Sharp worked together in ways white slavery crusaders wished to ignore. Anti-prostitution organizations reinterpreted their relationship – which was most likely an uneven yet consensual business arrangement – as sex slavery because it conformed to their ideas about urban disorder.

Sharp was convicted and received 20 years in prison, and his case became a landmark trial in the narratives about white slavery. Progressives used it as a cautionary tale for single white women, a kind of film noir about the pitfalls of interracial sex and the disordered urban spaces that might encourage it. They also seized the opportunity to ideologically reimagine the world of interracial prostitution and consensual sex as forced, thereby decontaminating the white women involved. Sharp's guilty verdict ultimately fortified the barriers between white women and Black men – which progressives hoped would hold off that urban disorder a little longer.

Professor Flowe's research and writing concern themes of criminality, illicit leisure, and masculinity and how they converge with issues of race, class, and space.

The power of quantum disorder

BY KATER MURCH / as told to Shawn Ballard



Using a superconducting quantum device, physicists can record the many tremulous paths a quantum system takes between two points in quantum state space. (Image: Murch lab)

Quantum mechanics entails clearly defined units and rules, so it isn't really disordered. However, there is a sense of disorder that has to do with the complexity of quantum mechanics – and that's actually really important for how we can apply it.

When physicists say "disorder," we're probably talking about uncertainty and entropy. The Heisenberg uncertainty relation is one of the first and most surprising things you learn in quantum mechanics. Basically, you can't know the position and momentum of a particle at the same time. In a classical world, we can know where something is and how fast it's going – of course we can; we do that all the time. But that's impossible to do exactly in quantum mechanics. Even if you know everything you can about a quantum particle, there are still unknowns. The disorder is built into the structure of the theory in the form of uncertainty.

The simplest quantum building block is just one quantum system, what I'll refer to as a quantum bit or qubit. When I look at the position, momentum, or some other quantity of any qubit, I'll see randomness in the measurement because the qubit embodies the uncertainty principle. So, while the quantum state of a qubit can be exactly a specific combination of its two states – for example, state zero plus state one – a measurement of its state will randomly give zero or one with equal probability because the qubit occupies a superposition of the two states. Disorder!

That's how we think about disorder in one quantum system, or one simple quantum state, but quantum mechanics becomes really interesting and powerful when you start talking about larger quantum systems. That's what people are excited about when they hear the word "quantum."

Imagine taking two, three quantum bits or more and writing down one quantum state to describe them all together. Very quickly, the number of combinations becomes fantastically large. By the time you reach 268 qubits, the number of terms you'd need to write down is larger than the number of particles in the observable universe.

At some point you have to say, okay, it's not possible to write down exactly what it is because it's unfathomably complex, even though there's no disorder. And that's what's so exciting about quantum mechanics. We're describing something so complicated that if you look at it wrong, you just see disorder. But if you look at it right, you might be able to harness that incredible complexity in some useful way. That's the basis of the power of a quantum computer.

Building the hardware for quantum computers is a huge challenge, but finding clever ways to use them is just as challenging. In the last decade or two, we've been slowly getting control over quantum complexity. Our goal with the new Center for Quantum Leaps, which we're developing as part of the Arts & Sciences Strategic Plan, will be to find places where we can use the quantum advantage to benefit research at WashU.

Professor Murch's research addresses atomic, molecular, and optical physics, condensed matter physics, and fundamental questions in quantum mechanics.

The political use of disorder

Three Civil Rights protesters sit-in at Woolworth's in Durham, NC, on Feb. 10, 1960. (Photo: State Archives of North Carolina)

BY CLARISSA RILE HAYWARD / as told to Claire Gauen

I'm interested in questions about the strategic use of disorder. How do actors who are intending to affect some kind of a political outcome use the power of disorder in a way that promotes change?

One tactic I've written about, called "Black Brunch," began in 2015, when multiracial groups of protesters disrupted brunch-goers in affluent areas and confronted them with facts about state-enacted and state-sanctioned racial violence against Black people. At the time, many people critiqued this practice, saying that it wouldn't persuade anybody. But I had the intuition that it was still doing important political work – even if the critics were correct and it wasn't persuasive, and even if it was making people angry.

I wrote an article called "Disruption: What is It Good For?" A central argument is that this kind of disruptive protest can exercise what political scientists call agenda-setting power. It can get an issue on the agenda and in front of people. And that changes the incentive structure for political elites. Disruptive protests are a way for citizens to say, "We're going to put our question out there, and you're going have to tell us where you stand."

When there's a critical mass of people who will answer a question a certain way if compelled to choose, but who would prefer not to look at the question at all, that's when the agenda-setting effects of disruptive protests can have the greatest power. The political work of tactics like "Black Brunch" isn't persuading the recipients of the disruption to believe something different than they already believe. It's to make them reflect upon beliefs that they already have and face the ways that they are complicit in practices violating their values. More so than news reports, disruptive actions like interrupting a meal or blocking a highway can compel people to pay attention.

Professor Hayward, a contemporary political theorist, focuses her research on theories of power and identity, democratic theory, and American urban politics.

> "We're going to put our question out there, and you're going have to tell us where you stand."

Join the conversation!

Learn more about Clarissa Hayward's research at a virtual Q&A on Sept. 8 at 4 p.m. CDT. For more details and to register, visit:

artsci.wustl.edu/DisorderEvent

Literary invention in the age of disorder

Jan van Huysum's "Vase of Flowers" exemplifies infinite variety through its combination of flowers that bloom in different seasons and regions in a single painting.

BY WOLFRAM SCHMIDGEN / as told to John Moore

In my research on early18th-century literature, theology, and philosophy, I examine how writers in Europe began to realize that disorder – more so than order – is fundamental to how the world works. In this era, political revolutions had overturned established regimes, and an explosion in religious sects disrupted the idea of a single, shared religious worldview. As they looked around at the social and religious turmoil of their time, many observers began to wonder if disorder were the basic condition of human life.

In *Infinite Variety: Literary Invention, Theology, and the Disorder of Kinds, 1688-1730*, I explore how, as frightening as this new reality was, writers like Richard Blackmore were keen to exploit and explore its aesthetic possibilities.

Most Christian thinkers previously assumed that God created the world with a discernible order. But as social unrest increased, many writers and thinkers, both liberal and conservative, embraced voluntarism. According to this theology, God did not imprint his image on the world. He created it arbitrarily. As a result, there was no order inherent in nature. God could easily have created the world in a different way.

In his 1712 poem *Creation*, Richard Blackmore crafted a demonstration of disorder. *Creation* describes the work of the woodcarver Grinling Gibbons, whose creative power came from the way that he transcended the order of species by combining things that do not coexist in nature. Gibbons carved from cedar, but his work depicted flowers and trees that were unrelated to the cedar. Trees feature blooms that do not belong to them. Flowers from geographically distant regions appear alongside each other in the carvings.

> "Many observers began to wonder if disorder were the basic condition of human life."

I call this artistic practice the aesthetic of infinite variety, and it is a prime example of the creative uses and possibilities of disorder. Reading Blackmore's celebration of Gibbons' carvings, you leave behind what you thought were the subtle distinctions between different things. You celebrate the dissolution of categories and the emergence of more hybrid kinds of creatures.

Many writers found a disordered world liberating. If nature was no longer an ideal order, then beauty becomes arbitrary, as well. There is no universal standard for beauty, and there is no longer a sharp distinction between form and deformity.

Professor Schmidgen's work marries intellectual and literary history, seeking to reconstruct cultural histories that bridge the past and present.

SNAPSHOT

Rising with the thaw

On the drive west from the Patagonian Desert, Cerro Chaltén, also known as Mount Fitz Roy, and its surrounding monolithic peaks create a spectacular vista. In one of the first seismic studies of the Patagonian Andes, a team led by Douglas Wiens, the Robert S. Brookings Distinguished Professor in Arts & Sciences, found a link between recent ice mass loss, rapid rock uplift, and a gap between tectonic plates that underlie Patagonia. In 2019, undergraduate field geology students explored the region with Wiens and fellow Earth and planetary sciences faculty members Alex Bradley and Philip Skemer.

(Photo: Ben Tiger, AB '19)

What big data reveals about modern-day housing segregation

In the Neighborhood Branding Project, Ariela Schachter combs through Craigslist ads to uncover how the online rental market reflects and intensifies inequality along racial, ethnic, and socioeconomic lines.

STORY BY SCOTT HERSHBERGER, AB '20

FEATURES

See more on Schachter's research.

artsci.wustl.edu/NeighborhoodBranding

When you're looking for an apartment or house to rent, how do you find out what options are available? If you're like a growing number of Americans, you turn to the internet, browsing sites like Craigslist, Zillow, or Facebook Marketplace. On the surface, these platforms may seem to expand equitable access to information, reducing the cost of your housing search while broadening the menu of neighborhoods and homes that you can explore. But when you take a closer look at ads for apartments in St. Louis, you will notice a difference.

An ad for an apartment in a predominantly white neighborhood will often emphasize the "wonderful" amenities and "hustle and bustle" of the area. An ad for an apartment in a predominantly Black neighborhood will more likely emphasize requirements that prospective tenants must fulfill, like "proof of income" and "no evictions" – even if both neighborhoods have relatively high poverty levels. According to Ariela Schachter, an assistant professor of sociology, this information disparity is no coincidence. Rather, it demonstrates the persistent influence of structural racism and inequality in the modern rental market.

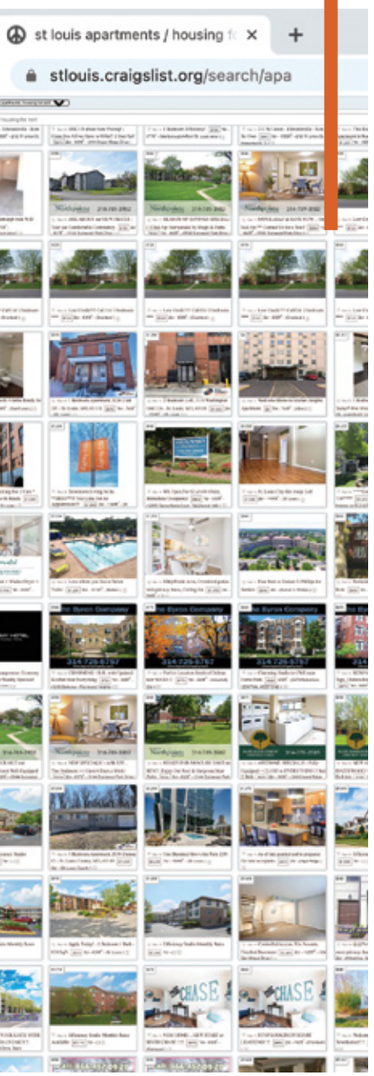
"If people are being exposed to fundamentally different kinds and amounts of information as they're looking for housing, we hypothesize that that could then shape where people end up living," she said. "If ads in predominantly non-white neighborhoods are not emphasizing the attractive qualities of housing, even though that housing stock might have lots of attractive qualities, that could be something that's preventing desegregation."

Schachter is one of the lead researchers of the Neighborhood Branding Project, an interdisciplinary collaboration using big data to examine the online rental market in cities across the United States. Harnessing tools developed by computer scientists, statisticians, linguists, and social scientists, she and her colleagues are probing the ways that seemingly neutral open-access platforms like Craigslist perpetuate housing segregation.

In one recent study, the team analyzed 1.7 million Craigslist ads across the 50 largest metropolitan areas in the country, uncovering widespread information discrepancies at the intersection of race and poverty. Compared to listings in nonpoor neighborhoods, those in poor neighborhoods tend to contain fewer words and thus provide less information. At the same time, listings in predominantly Black or Latino neighborhoods tend to provide less information than those in predominantly white neighborhoods of the same income level.

The type of information provided depends on the neighborhood demographics, too: As in the example from St. Louis, ads in predominantly Black or Latino neighborhoods often focus on renter requirements and qualifications at the expense of describing the positive characteristics of the housing unit itself. And in neighborhoods undergoing gentrification, listings for higher-rent units tend to include more information about neighborhood amenities.

Schachter noted that her team does not assume malicious intent on the part of individual property owners. "Most landlords are posting in a way that they think will help them find someone quickly," she said. "I think this is much more about these broader market forces. In general, unregulated private markets are going to reflect the segregation and inequality they are operating within."



Online rental listings provide large volumes of data for researchers to analyze.

The tools of big data

In decades past, renters found housing mainly through classified ads in newspapers – a format ill-suited to large sociological investigations. But now, the proliferation of online listings has enabled researchers like Schachter to access and analyze massive volumes of data with the help of computers. Meanwhile, the rental market has grown to include nearly half of central city residents and 36% of all Americans, making the Neighborhood Branding Project even more timely.

A big data technique for analyzing text known as structural topic models allows Schachter to identify common themes across thousands or millions of rental ads. "The computer doesn't actually understand the content of the words," she said. "It's using an algorithm to see what words tend to co-occur with one another and what kind of patterns it can identify. And then we as the researchers are the ones who actually find the meaning there."

Schachter also examines one word or phrase at a time. For example, she has found that in many cities, the mention of "evictions" is correlated with a high percentage of Black residents, the mention of "campus" is correlated with a high poverty rate, and the mention of "rooftop" is correlated with a high percentage of college-educated residents. But as she is quick to point out, "all these techniques are only as good as the data that you're using to begin with." The team constantly works to refine its methods for filtering out spam posts and duplicate ads that could skew the results.

While Schachter's research has revealed broad patterns in rental markets across the U.S., it has also highlighted the importance of studying each city's unique circumstances. Lydia Ho, AB '21, is working with Schachter and John Kuk of the University of Oklahoma (until recently a postdoc at WashU) to explore which St. Louis neighborhoods are mentioned most often in Craigslist ads – and whether the claimed neighborhoods match the actual addresses of the listings. Ho began this work as a senior and continues to be involved with the project.

"Living in St. Louis, we've heard about the Delmar Divide, and there's a lot of segregation within the city itself," said Ho. "Do these neighborhood claims map to racial differences, or education, or poverty level? Are there certain trends?"

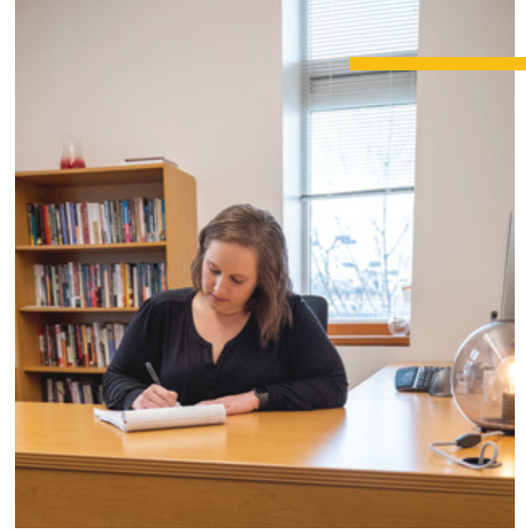
Ho has leveraged her programming skills to analyze about 30,000 Craigslist listings, using geographic information system (GIS) tools to figure out, for instance, whether a house listed in the Central West End actually sits outside the neighborhood boundaries. The team found that ads for rental housing in North City neighborhoods are less likely to mention the area by name, suggesting that some neighborhoods come with a stigma that landlords are trying to avoid. The results, while still preliminary, suggest that neighborhood claims do vary with demographics.

Quantifying these disparities is just the first step in understanding how the online rental market perpetuates housing segregation. Faced with incomplete information, how do renters ultimately decide where to live?

Join the conversation!

Learn more about the Neighborhood Branding Project at a virtual Q&A with Ariela Schachter on Aug. 30 at 4 p.m. CDT. For more details and to register, visit:

artsci.wustl.edu/NeighborhoodEvent



Ariela Schachter uses big data to understand how language in rental ad listings may perpetuate housing inequality. (Photo: Sean Garcia)

> I do think there is still this kind of idealistic view that if we just get rid of discriminatory real estate agents and landlords, we can get rid of segregation.

From Craigslist to conversations

In the next phase of the project, Schachter and Max Besbris, an assistant professor of sociology at the University of Wisconsin–Madison, plan to talk with renters directly. With funding from the National Science Foundation, their team is conducting surveys in the San Francisco Bay Area, Los Angeles, Houston, Chicago, and New York City. The respondents will be randomized into groups that will see ads with different types and amounts of information, allowing the researchers to disentangle the content of the ads from the characteristics of the neighborhoods.

"Understanding how different people view the trade-offs between the housing amenities and underlying neighborhood demographics will speak to those questions about how gentrification is happening and why," Schachter said. The experiment, she hopes, will cast light on individual decision-making in a way that the Craigslist data alone cannot.

"Something I love about sociology is having these findings that are coming from this big data project to be constantly in conversation with research that's using ethnography, participant observation, interviews, other methods that are going to capture nuances that our research approach is not," she said. "When we can look at all those findings together, that's where we have the richest understanding of our social world."

In recognition of the value of such interdisciplinary work, WashU launched its Center for the Study of Race, Ethnicity & Equity in August 2020. This spring, the center is supporting the Neighborhood Branding Project, along with the work of four other WashU scholars, through its faculty fellowship program. As a fellow, Schachter has the opportunity to focus exclusively on the project for a full semester, as well as participate in and lead collaborative workshops and seminars.

For those searching for a place to rent, Schachter recommends looking beyond the few neighborhoods that you and your friends are familiar with. While no individual's actions will solve a structural problem, she said, being aware of how race is entrenched in our cities is an important first step. On the policy side, she suggests that city governments could maintain centralized housing websites or require landlords to provide more information when listing online. Building online platforms with equity in mind could help mitigate the problems that her team has identified. Still, housing segregation is a complex issue with no panacea.

"I do think there is still this kind of idealistic view that if we just get rid of discriminatory real estate agents and landlords, we can get rid of segregation," Schachter said. "I think it's much more complicated than that, and our research is just one way of showing that segregation continues to be reflected in how we think about and talk about places and housing."

Scott Hershberger graduated from the College of Arts & Sciences in 2020 with majors in physics and math and a minor in Spanish. Hershberger, a former *Ampersand* intern, is currently a writer at the American Mathematical Society and will pursue a master's degree in science communication at the University of Wisconsin–Madison in the fall.

STUDY SESSION

THINK

(inside the box)

STORY BY JOHN MOORE

Media studies scholar Ian Bogost explores new ways of thinking about creativity and play.

To be creative, the old adage goes, you have to think outside the box. Creative thinkers bring something new to the problem. For Ian Bogost, however, creativity is not something we bring to the world – it's a feature of the physical world itself. To be creative, he argues, you have to learn to think inside the box.

Bogost, director and professor of film and media studies in Arts & Sciences and professor of computer science and engineering in the McKelvey School of Engineering, is an award-winning game designer and author, most recently of *Play Anything: The Pleasure of Limits, the Uses of Boredom, and the Secret of Games*. In a series of three talks for the 2021 Humanities Lecture Series, hosted by the Interdisciplinary Project in the Humanities, Bogost challenged members of the audience to rethink their notions of creativity and play – especially the false dichotomy of play and work.

"Play is the feeling of using something, of exploring what an object, experience, or relationship can do," Bogost said. This approach is liberating, he explained, because it frees us from dividing our lives into productive and unproductive areas. "We can think and play without worrying that play is some kind of indulgence," he said.

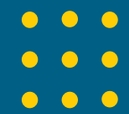
Bogost's research into play comes out of his longstanding interest in video games, as a game designer as well as player and scholar. Fascinated by the joy found in repetition in games, like when players make Mario leap over obstacle after obstacle for hours, he wondered if the pleasure of repetition could also be applied to everyday life.

"What if you could see your morning breakfast or dishwasher routine as having the same potential for delight as a game, like the popular multiplayer game "Overwatch" does? The more playful we can get in more circumstances, and the more we experience the delight or fun that we've relegated to specific domains, the better we get at it in everything else."

For more insights, view Bogost's full "Thinking inside the box" lecture.

artsci.wustl.edu/Bogost

> When you are creative, it's not the case that your cleverness is shining through the muck. Rather the world's unconcern for you is vibrating through its surface. Play isn't about you. It's about everything else and what you manage to do with it.



The psychologist J.P. Guilford created the nine-dot puzzle as a way of measuring creativity. The player is asked to connect all the dots with as few straight lines as possible.

Guilford's famous solution involves connecting the lines to points outside of the dot matrix. Bogost argues that instead of thinking outside the box, those who solve the problem correctly have simply identified a larger box.

Citing an influential text in game design theory, Bogost suggests that instead of boxes, we could think of what Johan Huizinga calls "magic circles" – boundaries that separate the ordinary world from the game.

These circles are playgrounds – the literal grounds marked off for play. "Anything can be construed as a ground for play once the materials are established," says Bogost.

"As adults we mistakenly think that childhood is fun because there are no limitations. In reality, a playground is a kind of prison. Children are fully aware of this fact and use the limitations of their world to create games."

For Bogost, play is the aesthetic version of a very basic way that we interact with the world – a system that has limitations we can engage with and from which creativity can arise.

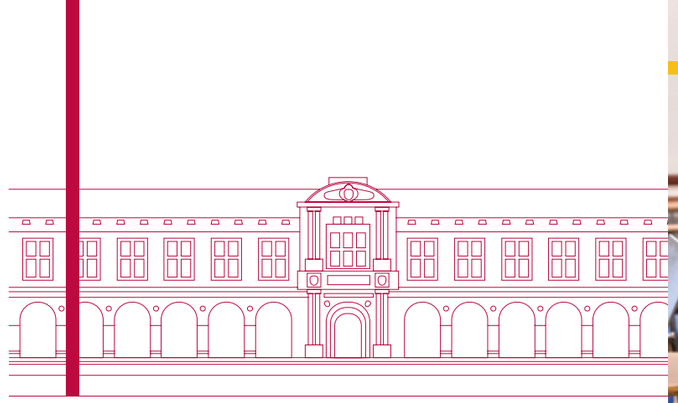
FEATURES

Group Project:

The story of the Arts & Sciences Strategic Plan

It took ten months and hundreds of voices to craft a shared vision for the next decade of Arts & Sciences. Here's how it happened.

STORY BY CLAIRE GAUEN
Photos by Sean Garcia



Left: Students review an assignment in a spring 2022 Spanish course. Right: Thomas Bakupog (foreground), lecturer and director of the peer-led team learning program in chemistry, meets with Richard Mabbs, associate professor of chemistry.

The assignment

Less than a year after setting up his office in Brookings Hall as the incoming dean of Arts & Sciences, complete with maps and photos from research expeditions around the world, Feng Sheng Hu voiced an audacious set of goals.

"Our aspiration is to become a global model of an arts and sciences school," said Hu, who also serves as the Lucille P. Markey Distinguished Professor in Arts & Sciences. Hu described his vision for an elevated Arts & Sciences, an institution with a world-class research enterprise, a first-rate liberal arts college, and a diverse and inclusive community whose work is driven by creativity and convergence. Furthermore, he aimed to make bold progress in all these areas within the next decade.

Academia is no stranger to long-term planning, but Hu's charge called for a shift in mindset – simultaneously broad and detailed, forward thinking and of the moment. Any progress toward the stated goals meant first addressing a series of staggeringly open-ended questions: What steps would raise Arts & Sciences' already impressive standing? How should investments be allocated? Which overarching values would guide decisions?

With no syllabus or grant proposal at hand, this undertaking would require a different sort of guiding document. The school had been assigned the ultimate group project: the Arts & Sciences Strategic Plan.

Partnering up

With most group projects, a handful of people collaborate to get the job done. Creating a 10-year plan for a 175-year-old institution with more than 40 academic units, however, necessitates a bit more brainpower and organizational infrastructure. To get the process started, leaders from across Arts & Sciences stepped in and teamed up to drive the effort.

Heading into the strategic planning process, Dean Hu noted the fortuitous timing and extensive institutional support for his school. In their current and previous roles, both Chancellor Andrew Martin and Provost Beverly Wendland have a history of advocating for the liberal arts. WashU had also recently embarked on a university-wide strategic planning process, offering opportunities for convergent collaboration.

As a preparatory step, Arts & Sciences engaged the services of a consulting group with extensive experience in higher education to help shape goals for each of the project's five phases and conduct extensive analyses to help clarify where Arts & Sciences might make the most distinct impact in the years ahead.

With this support in place, Hu invited 12 faculty members to serve as the strategic planning steering committee. Carefully selected to represent areas across the humanities, natural sciences, and social sciences, as well as intentional overlap with the university-wide strategic planning effort, this group would meet regularly over the coming months to shape the Arts & Sciences plan.

For a project this large, still more leaders were needed. Hu solicited nominations for working groups focused on areas of critical importance, including undergraduate education and research, scholarship, and creative practice. Recommendations poured into the office. In the end, 20 faculty and staff members became co-leads of these groups, which were tasked with collecting and synthesizing feedback from the community at large.

Finally, with leaders at the ready and initial conversations about priorities and goals well underway, it was time for the research phase. For the next two months, the number of strategic plan contributors would spiral out to include hundreds of voices and thousands of opinions.

Research

When Arts & Sciences first interviewed consultants to help with the project, most firms offered to run only a few focus groups to gather community feedback – maybe as many as three or five.

"That's when we would start telling them, 'You don't understand Arts & Sciences,'" said Ebba Segerberg, associate dean and chief of staff in Arts & Sciences. As project lead for the strategic planning process, Segerberg served as the main point of contact with both the consultants and the internal committees.

"We have all these different populations, and they all matter," Segerberg said. "We realized that we needed to scale up that part of the project so that anybody in Arts & Sciences who wanted to take part in a focus group would have that chance."

The result? Instead of a dozen conversations, the working groups hosted 56 hour-long discussions and took meticulous notes detailing all the concerns, hopes, points of pride, and ideas – big and small – that emerged. Some faculty advocated for formal interdisciplinary centers to encourage research collaboration; others thought a campus bar for socializing over beers would have the same effect. All opinions were welcome.

"I think one of the biggest goals was to hear from as many voices as possible across Arts & Sciences and really just get a feel for the current culture. Where are we falling short, and how can we improve? Where are we really successful, and how can we elevate those successes?" said Amanda Albert, one of the co-leads of the community and climate working group.

As an instructional specialist, Albert assists faculty and staff with course design. In a focus group with teaching faculty, she recalls discussions about how to ensure teaching and research productivity are equally valued. In focus groups with students in the natural and social sciences, she heard undergraduates discuss the strength of mentorship in Arts & Sciences and how that could be further improved with more opportunities for peer-to-peer learning.

"The students were really enthusiastic. I think they enjoy being Arts & Sciences students, and they were really excited to be a part of the conversation and a part of building something new and exciting for the school," Albert said. It's a sentiment she shares.

"I think the work that we're doing now is really going to make an impact far, far into the future. And I'm really excited to have been a part of some of this foundational work and feeling hopeful about where we're going," she said.

As a co-lead for the graduate education working group, William Acree saw a number of items relevant to graduate students come out of the research phase and eventually into the plan itself – things like the need for better access and support for underrepresented students, more transdisciplinary connections across departments and programs, and expanded support for diverse professional outcomes.

"There are all sorts of ways where graduate education is threaded throughout this transformative vision for Arts & Sciences over the next decade," said Acree, a professor of Spanish who also serves as dean's fellow for graduate education initiatives in Arts & Sciences and as interim co-director of WashU's Center for the Study of Race, Ethnicity & Equity. "Graduate student research in many ways is really the frontier of knowledge-making. They are effectively the next generation of scholars."

In addition to all the material gathered in focus groups, an open online survey collected more than 2,000 comments from nearly 400 faculty, staff, students, and alumni. Huron conducted further one-on-one interviews with selected stakeholders, including university leadership and alumni from multiple eras. The trove of data was enormous.

"It was epic," Segerberg recalled months later with a smile. "All that scheduling and data collection in a fairly compressed time frame – that did almost kill us," she said, "but I'm proud that we did it. It fostered conversations and exchanges of ideas between people who don't normally talk to each other. That was incredibly productive and rewarding, and also very fun and inspiring. A lot of great ideas came out of this process."

Crunch time

In the next phase of the project, what started as a free flow of information began to crystallize into recognizable priorities and action items.

"It was refreshing to hear the diverse opinions from incredibly smart faculty and staff across the various disciplines," said Thomas Bakupog, a lecturer and director of the peer-led team learning program in chemistry, who served as co-lead of the undergraduate education working group. "Initially, it was a little bit of a struggle to find overlapping themes, but it all came together toward the end when we were synthesizing all the feedback from the various focus groups and surveys. At that point, it became apparent that we all wanted the same things for our undergraduate programs."

For Bakupog's group, those priorities included undergraduate preparation for post-college life and further commitments to first-generation and underrepresented students. With assistance from Huron, all four working groups waded through notes and survey results to identify such agreed-upon points. The lists were then passed on to the steering committee, which met several times to further distill the material and identify common themes. Eventually, the plan's final shape began to emerge.

> This is a time for Arts & Sciences at WashU to rise in prominence and visibility for the benefit of the entire university.
>
> **ANDREW D. MARTIN**
> Chancellor

Pen to paper

"You can't come out of this saying there's an author or even two authors. There are many authors to the strategic plan – which is how it should be, right?" said Deanna Barch, chair and professor of psychological and brain sciences. Along with Abram Van Engen, professor of English and dean's fellow for educational innovations and initiatives, Barch co-chaired the strategic planning steering committee and led the drafting of the final plan.

As with much work written by faculty and students alike, Barch and Van Engen found that the act of putting ideas into words helped clarify concepts and highlight remaining questions. The writing stage also brought into greater focus the broad significance of the plan. Beyond shaping the trajectory of Arts & Sciences and Washington University as a whole, the plan responds to St. Louis's history, great strengths, struggles, and forward progress, as well as the ongoing global challenges that students and scholars in Arts & Sciences strive every day to understand and address.

Barch remembers one weekend early in the process when she and Van Engen spent hours emailing documents back and forth to each other, editing and refining along the way. "It was a very collaborative, iterative process," she said. "I felt like we were partners in it, and we had a bunch of other partners to help us too, so that it wasn't the voice of a single person. I really felt that a collective voice was emerging through feedback from the community and writing together."

True to the collaborative nature of the project, initial drafts of the plan were treated as open books. Leadership welcomed commentary at two virtual town halls open to the entire Arts & Sciences community. The National Council, largely made up of alumni, weighed in. Hu held office hours to gather even more individualized commentary.

Like all group projects, through all the editing and refining, a deadline loomed. Dean Hu aimed to share the plan with the university at large by the end of 2021 – and the time had arrived.

Submitted

After all the planning and research and synthesis and writing and rewriting, on Dec. 6, 2021, Arts & Sciences presented its group project: *A Transformative Decade: Convergence, Creativity, Community*. The plan's overall structure includes four key foundational areas, six strategic pillars, and eight inaugural signature initiatives.

The foundational areas lay the groundwork for any future development in Arts & Sciences, articulating critical elements identified in the research phase that must be enhanced and supported for any valuable progress to occur. The pillars arise from the foundations, highlighting areas in Arts & Sciences where investment and progress will be focused in the coming decade.

Finally, eight signature initiatives represent exciting, concrete projects proposed by the Arts & Sciences community that are moving from idea to reality. For example, an expanded Living Earth Collaborative will join Arts & Sciences with St. Louis institutions to promote biological research and environmental justice; a new Center for Quantum Leaps will place Arts & Sciences at the forefront of emerging quantum technologies; and TRIADS, the Transdisciplinary Institute in Applied Data Sciences, will leverage advanced computational resources to address challenges in the social sciences. The eight initiatives chart bold next steps for Arts & Sciences, ensuring the school's continued impact as a leader in research and education.

"I knew this community was bursting with incredible ideas and phenomenal potential, and it's thrilling to see our aspirations coalesce into a plan," said Dean Hu. "This was a truly stellar effort, and we've articulated a world-class vision. But the most exciting work is yet to come."

See our plan and share your thoughts.

artsci.wustl.edu/StrategicPlan

Where do we go from here? Our strategic plan, *A Transformative Decade: Convergence, Creativity, Community*, is a living document — the starting point for ongoing conversations, additional proposals, and emerging visions for the future of Arts & Sciences.

This is a dynamic plan — it's meant to change and grow with the community, even as it fosters the growth and change needed to make us a global model for a school of arts and sciences. We have all kinds of strengths here. Some of them are well known. Others are somewhat hidden. And still others will emerge as the plan gets underway. It's exciting to see what all is happening and how the strategic plan itself will continue to develop and foster the best possible future for WashU.

Abram Van Engen

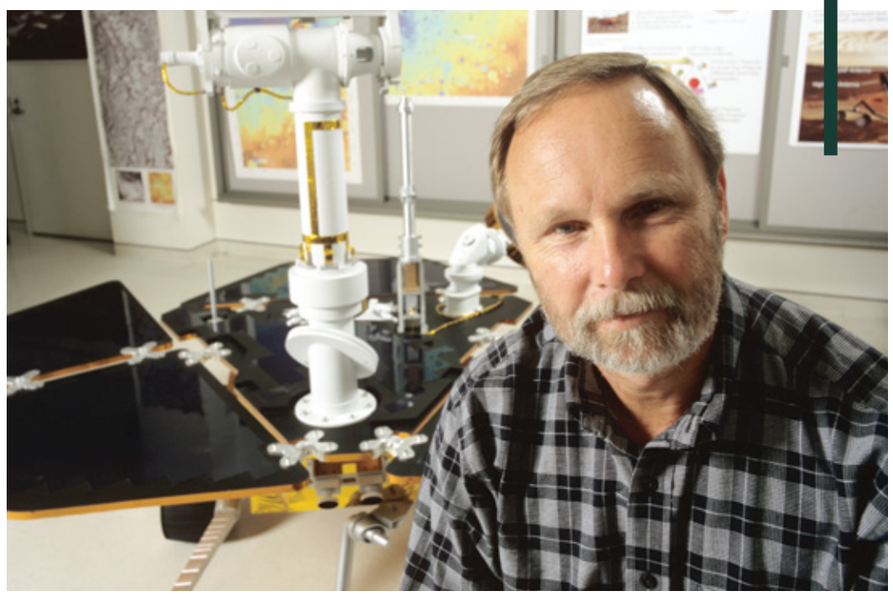
Deanna Barch (center) talks with colleagues Erin Moran (left) and Lori Ingram in the Cognitive Control and Psychopathology Laboratory.

MEMORIES & MILESTONES

Exploring Mars, shaping trajectories

Arvidson retires after 48 years in Arts & Sciences

BY SHAWN BALLARD



Ray Arvidson with the replica Mars rover in Rudolph Hall. (Photo: Joe Angeles)

Raymond E. Arvidson, the James S. McDonnell Distinguished University Professor, grew up watching the United States race the Soviet Union to the moon. When Neil Armstrong took his "one small step" in the summer of 1969, a newly married Arvidson was days away from moving to Providence, Rhode Island, to attend Brown University as a graduate student in planetary science. Arvidson's early impressions of space exploration set the stage for his distinguished career, which has spanned nearly 50 years; encompassed numerous NASA missions, including almost every mission to Mars since the mid-1970s; and impacted countless students, many of whom are now themselves leaders in the field of planetary science.

Share notes of thanks and favorite memories with Ray.

artsci.wustl.edu/Arvidson

After earning his doctorate in 1974, Arvidson joined Washington University's Department of Earth and Planetary Sciences as an assistant professor. 1975 proved to be a pivotal year for space research at WashU. With the support of then-chancellor William Danforth, aerospace innovator James S. McDonnell established the McDonnell Center for the Space Sciences. NASA's space program was also in its early days, with some of its most awe-inspiring missions slated for launch in the coming years. Arvidson was there from the beginning, truly in the right place at the right time.

"I was lucky to get involved in NASA's planetary exploration program, just as it was being born," Arvidson recalled. "I got to see the whole NASA solar system exploration program blossom, starting as a science team member for the Viking lander mission with Carl Sagan in 1976." Following that experience, Arvidson went on to work on the Magellan mission to Venus and many missions to the red planet, including the Mars Global Surveyor, 2001 Mars Odyssey mission, Mars Exploration Rovers mission (Spirit and Opportunity), 2005 Mars Reconnaissance Orbiter, Mars Phoenix Scout mission, and Mars Science Laboratory Curiosity Rover mission.

"My job has been helping define the juicy places to explore on Mars using orbital data, and also making sure we can drive the rovers from A to B without getting stuck," Arvidson said. This work (and a lucky introduction by his wife, Eloise) eventually led Arvidson to dinner with Neil Armstrong – a chance to discuss rover routes and planetary surfaces with one of the few people to have set foot on extraterrestrial terrain.

> **I was lucky to get involved in NASA's planetary exploration program, just as it was being born.**

In addition to his efforts in planetary science research, which helped put WashU on the forefront of the field, Arvidson has also devoted considerable energy to teaching and outreach. Arvidson was the director of WashU's Environmental Studies Program from 2001-2004 and chair of the Department of Earth and Planetary Sciences from 1991-2008. To meet the needs of students seeking more field research opportunities, he designed and led the Pathfinder Program for outstanding undergraduates, which has taken Arvidson and his students to exotic locales from Hawaii to the Spanish Rio Tinto to the Mojave Desert.

"I always wound up with a group of students who were academically absolutely outstanding," Arvidson said. "My 400 or so Pathfinder students have gone off in all sorts of directions – professors, physicians, lawyers, CEOs, government scientists, and even one Native American chief."

"As an advisor I focused on just taking the time and care to understand what students' frustrations and concerns might have been, and not directing them, but just being there to counsel them," Arvidson added. "If they wanted to go in a particular direction, we talked it through – so they could go where they wanted to go. And it seems to have worked!"

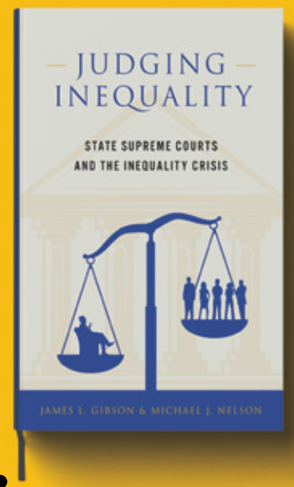
After his official retirement this summer, Arvidson plans to continue his involvement with NASA's Mars Science Laboratory's Curiosity rover, as well as his work with the Planetary Data System (PDS), which now spans eight nodes, including the geosciences node housed at WashU that Arvidson has managed since 1989. Beyond his projects with NASA, Arvidson will also continue as resident astronomer for Viking Ocean Cruises.

"A few years ago, I realized that I'm just a little bit too long in the tooth to continue doing Pathfinder trips and new NASA missions," Arvidson said. He opted to review the Perseverance mission and help select the scientists instead of joining the team himself. He also turned the Pathfinder program over to a new group of leaders in environmental studies. But that doesn't mean students and colleagues won't still spot Arvidson around campus. "If you know me, you know I won't be able to stay away. Plus, Eloise needs me out of the house."

Ray Arvidson (far right) with Pathfinder students in Molokai, Hawaii, in August 2004. (Photo courtesy of the Pathfinder program)

Ray Arvidson and his wife, Eloise, celebrating Christmas 2021 on the Viking Sky in the Mediterranean Sea. From showing Bill Nye around campus to chaperoning Pathfinder students in far-flung research destinations, Eloise Arvidson has been an essential partner to her husband's successes over the years. (Photo courtesy of Ray Arvidson)

FACULTY BOOKSHELF



Reassessing state supreme courts

In *Judging Inequality*, James L. Gibson and Michael J. Nelson account for 26 years of political maneuvering to influence states' highest courts.

BY JOHN MOORE

The political reality

State supreme courts do not protect minority interests but instead reflect the will of a state's political majority, according to a new book by James L. Gibson, the Sidney W. Souers Professor of Government, and Michael J. Nelson, PhD '14. In *Judging Inequality: State Supreme Courts and the Equality Crisis*, the authors present findings from a multi-year study of state supreme court cases that show state high courts often contributing to a growing trend of inequality in the United States.

"As the U.S. Supreme Court's decisions begin to have a more strongly pronounced conservative tilt, the state supreme courts – which have the final say on state law – will become extremely important battlegrounds for groups seeking to mitigate the rising inequality in the U.S. and regarding important social issues," said Nelson, who now serves as the Jeffrey L. Hyde and Sharon D. Hyde and Political Science Board of Visitors Early Career Professor in Political Science at Penn State.

"As more and more policies become state-based, state supreme courts will have an extraordinarily important role in deciding whether or not their state, through its constitution, will protect rights that the U.S. Supreme Court says are not covered by the U.S. Constitution," Nelson added.

Schools in the U.S. commonly teach that the judiciary is an institution that protects the rights of minorities – those holding less legislative and executive sway in government. The nation's courts are said to be able to maintain this role because of their purported independence. Yet, Gibson and Nelson find that this assumption does not reflect the political reality of how state supreme courts are seated and subsequently decide cases.

"We ought not to think of state supreme courts as a bulwark against majority tyranny," said Gibson. "State supreme courts tend to be majoritarian institutions that do not serve as a check on governments, as true minoritarian institutions might, but instead are more often a part of the state government team."

> We ought not to think of state supreme courts as a bulwark against majority tyranny.

Governors have long known that their states' highest courts exert a powerful influence on public policy. These institutions are able to affirm or reverse an administration's major policy initiatives. Governors seek to influence court composition as a way of preserving their policy legacy, much as presidents do with the U.S. Supreme Court.

Around 90% of judges in the U.S. have some form of electoral accountability, a fact often cited as evidence that the courts are held responsible for their rulings. Yet governors manipulate those elections to influence the composition of the bench. Through strategic resignation, party leaders encourage older judges to retire so that they can be replaced by a governor of their own party. Those replacement justices then run in the next election as incumbents, granting them a great advantage over their opponents. Gibson noted that nearly all judges on the Georgia and Minnesota Supreme Courts – both courts that nominally use elections to pick their judges – were initially appointed and subsequently elected through this process.

State supreme courts have addressed inequality with great variation in the last 26 years, due in large part to the way that political interventions have shaped the courts. In 1990, almost all judges on the Alabama Supreme Court were Democrats, while today the court is composed almost entirely of Republicans.

These political leanings matter for equality. "The Texas Supreme Court has decided 28% of its cases in those 26 years in favor of greater equality; the Arizona Supreme Court 72%," Gibson said. "It's almost the case that the variability couldn't be greater."

From student to colleague

The findings in *Judging Inequality* resulted from a long-term research effort in which Gibson and Nelson compiled a first-of-its-kind database of cases related to inequality, funded by the National Science Foundation and the Russell Sage Foundation. While they could reference extant databases for specific topics, like court cases related to the equal funding of public education, no comprehensive database existed for inequality litigation at the state level. With a team of about 50 law students, they sifted through 14,000 state supreme court cases to compile a database of 6,000 cases relevant to issues of inequality decided between 1990 and 2015.

The seeds of this project were planted while Nelson was still pursuing his doctorate at Washington University, where he studied with both Gibson and Chancellor Andrew Martin during the chancellor's first stint at WashU as a political science faculty member. Nelson remembers the department as a collegial place, with open-door policies that allowed graduate students to connect with faculty and, as in his case, begin productive and long-lasting research partnerships.

"It has been a once-in-a-lifetime opportunity," Nelson said. "Jim is a world-renowned political scientist, and being able to write with him has been a chance to have a front-row seat into what it means to be a successful academic. I've learned so much from being able to work alongside Jim – from how to write an academic article, to how to respond to peer review critiques, to how to write a grant proposal, and how to be a participant in the academic conversation. I'll forever be thankful for his patience and good humor as we worked on this project – one that started as a graduate student in Seigle Hall and ended after I was awarded tenure myself!"

For Nelson, the project has inspired more questions about electoral competition in state courts, something he will continue to study. In the coming months and years, these courts will be in the public eye as they hear cases about voter rights, access to abortion, and mask and vaccine mandates in schools. Indeed, Gibson noted, it is even possible that the state supreme courts will wind up deciding the outcome of the next presidential election.

"More research on these powerful, 'below-the-radar' institutions is essential. We would welcome greater public transparency and hence accountability like we have with the U.S. Supreme Court," Gibson said. "Because they are such important policymakers, we want to shine a bright light on these justices and courts."

Department of English

Then the War: and Selected Poems, 2007-2020

Carl Phillips

Department of Philosophy

Appearance in Reality

John Heil

Department of English

Best Men

David Schuman

Department of Jewish, Islamic, and Middle Eastern Studies

The Laws of Hammurabi: At the Confluence of Royal & Scribal Traditions

Pamela Barmash

Performing Arts Department and Department of English

Performance and Modernity: Enacting Change on the Globalizing Stage

Julia A. Walker

Department of History

Electrifying Mexico: Technology and the Transformation of a Modern City

Diana J. Montaño

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NOTES OF GRATITUDE

Celebrating Distinguished Alumni

Each year, Arts & Sciences recognizes a few extraordinary alumni who exemplify the ideals of a liberal arts education through their lives, work, and service. In their own words, this year's honorees share fond memories and lessons learned.

It took me about one nanosecond to decide that I would very much like to respond to that challenge.

Gayle Jackson, MA '69, PhD '79, is the Dean's Medal winner. She is the president and CEO of Energy Global Inc., a consulting firm specializing in corporate development, diversification, and government-relations strategies for energy companies. Early in her career, she was asked to set up her company's first corporate energy department.

I was trying to understand how the world worked. I kept slicing it into smaller pieces until it got down to atoms.

Larry Robinson, MA '81, PhD '72, is the president of Florida A&M University and is still actively engaged in research as the director and principal investigator of the Center for Coastal and Marine Ecosystems. He studied nuclear chemistry at WashU.

Hear more from these alumni on what inspires them and how Arts & Sciences has impacted their lives.

artsci.wustl.edu/DAA

When you fail at something, you really go through a gut-wrenching examination of why did you fail and what are you going to do next time so you don't do it again.

Joan Kelly, AB '72, served as group executive, global technology and operations for Mastercard Worldwide until her retirement, and has been nationally recognized as one of the Top 100 Women Leaders in STEM by the STEMconnector organization.

On a few occasions I had to call my professors and say, 'I can't make it. I'm stuck on an arrest or I'm stuck on a case.'

T.R. Bynum, BS '01, JD '08, is a manager in Wells Fargo's litigation regulatory enforcement and investigation section. He and his team advise businesses employing more than 14,000 financial advisors and licensed bankers in branches across the U.S. He worked the night shift as a police officer while taking classes during the day.

That desire to be better, to surround myself with good people, to try to deserve those good people in my life, is the thing that drives me every day.

Kristina Olson, AB '03, is the Early Career Achievement Award winner. She is a professor in the psychology department at Princeton University and a MacArthur Foundation "genius grant" winner. Her most recent research focuses on the social and cognitive development of transgender and gender-nonconforming youth.

I would take the students out on the Quad, and it was almost like being in a play every day.

John Green, AB '90, is a former executive producer of special programming and development at ABC News. Green is a three-time Emmy and Peabody Award winner. He has worked on many of the network's biggest newscast programs, including "Good Morning America" and "20/20." He spent two years working as a language "drill instructor" at WashU.

NOTES OF GRATITUDE

An Indelible Mark

Throughout his life, Mark S. Weil, the E. Desmond Lee Professor Emeritus for Collaboration in the Arts, helped shape the humanities at WashU.

BY LIAM OTTEN AND RACHEL SCHULTZ

Photos courtesy of Joan Hall

Weil and his wife, Joan Hall, in a hammock designed by artist Ernesto Neto.

Mark S. Weil died at his home in Jamestown, Rhode Island, on Thursday, Nov. 18, 2021. He was 82.

A native of St. Louis, Weil earned a bachelor's degree in art history and archaeology from Washington University in 1961. He then earned both a master's (1964) and doctorate (1968) from Columbia University, where his mentors included the influential art historians Meyer Schapiro, Julius Held, and Rudolf Wittkower.

"I led a charmed life as a graduate student, working with people who were pioneers of art history and studying in some of the greatest museums and libraries of the world," Weil recalled to *Washington Magazine* in 2015. "It set an incredibly high standard of excellence for me."

Weil returned to WashU in 1968 as an assistant professor in the Department of Art History and Archaeology in Arts & Sciences, where he taught courses on Italian Renaissance architecture, Rembrandt van Rijn, and 15th- through 17th-century European art, among other topics. He served two terms as department chair, from 1982-88 and from 1995-99.

"Mark's lifelong passion for the study of original works of art was distinctive and contagious," said Chair Elizabeth Childs, the Etta and Mark Steinberg Professor of Art History. "An exceptionally devoted teacher, he introduced students to 'close looking' in museums and notable private art collections – including his own."

"I remember vividly the many afternoons we spent together looking at objects at his house or at the Saint Louis Art Museum and being filled with admiration over the depths of his knowledge and skills as a connoisseur," said C. D. Dickerson III, MA '00, curator and head of sculpture and decorative arts at the National Gallery of Art in Washington, D. C. "My approach to art history continues to be the approach I learned from Mark."

Weil's research fell into four primary areas: Italian Baroque sculpture, 16th- and 17th-century garden and stage design, the Marvelous age, and art connoisseurship.

In 1998, Weil was named director of the university's Gallery of Art, now the Mildred Lane Kemper Art Museum, for which he organized several major exhibitions. He also helped to create the master plan that would link the university's schools of art and architecture to create the Sam Fox School of Design & Visual Arts.

Weil retired in 2005 and later relocated to Rhode Island with his wife, Joan Hall, the Kenneth E. Hudson Professor Emerita of Art and former director and master papermaker for Washington University's Island Press. In his retirement, he embraced his love for photography and exhibited his own work. He continued to mentor art historians, collect, and conduct research. He published a study of a Renaissance engraver just months before he died.

> He wanted citizens of St. Louis and his students to have a rich experience, to learn, and to enjoy, and he pursued that doggedly.

His generous philanthropy over the years has supported a range of institutions and arts programs. Weil and his former wife, Phoebe Dent Weil, donated nearly 200 works to the Saint Louis Art Museum. In 2017, one exhibition of their contributions was co-organized by Weil's former doctoral student Judith Mann, MA '78, PhD '86, who is now the museum's curator of early European art.

Mann met Weil when she took a seminar with him during her first semester at WashU. "He had a reputation as someone to be a bit daunted by," she said. "He was known to be a tough professor." Weil ended up advising Mann on her master's thesis and her doctoral dissertation. She says he taught her to never feel finished or satisfied – that there's always another way to see things.

When Mann started at the museum, Weil cheered her on and offered advice. And although the two didn't always agree, he provided a sounding board throughout her curatorial career.

"Sometimes he could be remarkably blunt," Mann said. "Yet, he was deeply caring and committed. He wanted citizens of St. Louis and his students to have a rich experience, to learn, and to enjoy, and he pursued that doggedly."

In 2018, Weil created the Mark Steinberg Weil Professorship in Art History and Archaeology. Claudia Swan, a specialist in Early Modern art, holds the inaugural professorship. The following year, he and Hall established the Mark S. Weil and Joan M. Hall Fund for Art History and Archaeology in Arts & Sciences, which supports several annual research awards, fellowships, and internships for both faculty and students. In 2021, they expanded those efforts with a substantial gift to found an endowment to further support student and faculty research projects and collaborative initiatives in the study of the visual arts.

Kirsten Marples, PhD '21, was the first recipient of the Weil Professional Development Fellowship, which she used to apprentice at the Museum of Fine Arts in Boston in 2019. She credits the fellowship with helping her to land a job as curatorial associate at the Menil Drawing Institute in Houston in a highly competitive job market.

"Mark was a wonderful scholar and a passionate advocate for the arts and humanities," said Feng Sheng Hu, dean of Arts & Sciences and the Lucille P. Markey Distinguished Professor in Arts & Sciences. "For more than five decades, Washington University has benefited from his leadership, enthusiasm, and discerning eye. He will be sorely missed."

Weil's contributions will impact countless lives in years to come. "I am a great believer in the importance of the study of the humanities in education," he wrote in a note shortly before his death. "If possible, I would fund the entire division of the humanities at Washington University."

Portraits by Buzz Spector, professor emeritus of art.

A family legacy

The commitment to Washington University runs deep in Weil's family. Steinberg Hall, which today houses classrooms and studios for art and architecture students, and Steinberg Auditorium, which serves the needs of the broader campus, were both a gift from his grandmother, Etta Steinberg, in memory of his grandfather, Mark C. Steinberg. Weil's parents, Florence and Richard Weil, contributed many works of art to the university collection, and Richard served on the university Board of Trustees.

To honor their mother's memory, Mark and his siblings — Richard, John, and the late Paula Weil — and their spouses supported the creation of the Kemper Art Museum's Florence Steinberg Weil Sculpture Garden. John, an emeritus trustee, and his wife, Anabeth, recently supported creation of Anabeth and John Weil Hall.

ALUMNI SPOTLIGHT

The interpretation of risk

Masoud was among members of the Illinois National Guard activated to assist local health departments in 2021. He ran seven mass vaccination sites in and around Chicago.

STORY BY RACHEL SCHULTZ

Photos courtesy of Fahim Masoud

Fahim Masoud, AB '13, is one of nine children. His family was considered part of the elite in Kabul, Afghanistan, in the early 1990s. But when the Taliban came to power in 1996, everything changed.

"Once they took over Kabul, my family lost everything," Masoud said.

His father was an officer in the Afghan army that had been trained and funded by the Soviet Union. But when the Soviet Union collapsed and the Taliban took over, his family moved to Herat, on the other side of the country.

He says everyone was afraid of the Taliban, and it was hard to know whom to trust as neighbors were so willing to tell on each other – even for the most innocent activities.

"Every time we found a movie, we would put blankets on windows, the doors would be shut, and somebody would be on watch to make sure that nobody was walking around – just to watch an Indian or American movie."

While serving as an interpreter for the U.S. military, Masoud (center), went on several missions with senior U.S. Army officers for meetings with Afghan officials.

When the U.S. Army arrived in Masoud's region, he had just finished high school and heard about the opportunity to work as an interpreter. Although it was a risky job, he applied.

Interpreters played a key role in U.S. military operations in Afghanistan, providing additional muscle and cultural insights that could save a soldier's life. And Masoud excelled in the role.

He often worked for Chief Warrant Officer James Ditter, and the two would sometimes discuss educational opportunities in the United States. After getting to know each other, Ditter, who was from St. Peters, Missouri, sponsored a student visa for Masoud to attend college in the U.S.

"People told me, 'Look, if you really want to become educated and prosper you've got to go to WashU,'" Masoud said.

And he did thrive at WashU. He was offered a full scholarship and became a Merle Kling Undergraduate Honors Fellow. He soon connected with Professor Robert Canfield, an anthropologist who spent much of his career studying Afghanistan, and the two remain close friends today.

"He's a brilliant guy, but he also conducted himself in a very mature way from very early on," Canfield said. "Fahim is a unique guy with certainly a wonderful brain, but far more than a wonderful brain, he's a great personality."

Masoud was the first Afghanistan-born student to attend WashU and the first person in his family to move to the United States. He had to navigate several new experiences without his family to rely on for support.

"A lot of people were really nice, really helpful, and really focused on making change in society. And that's such an attractive, appealing thing for me," Masoud said. "In a lot of ways, I feel like my identity as a person was forged at WashU. That's because of not only the student body but also the faculty and the administrators that were really great."

Masoud chose to study history as an undergraduate. "I think, when you grow up in a society like Afghanistan, you are hungry for why there is so much messiness, why there is so much badness, and you are trying to do everything you can to find a cure, and I think history has a lot to offer."

He now works as a global intelligence manager at one of the largest private intelligence companies in the world and is an HHC executive officer in the Maryland Army National Guard. "I feel like a degree in history equipped me with all the right skills that I need to thrive and do well."

Masoud says his education at WashU strengthened his ability to deal with a variety of personalities because open discussion and civil disagreement were encouraged.

Canfield emphasized this aspect of his character as well. "A lot of people get a little defensive when getting criticized. But if Fahim knew he was weak in some way, he would seek out people to ask for their help. This is a guy who's not just smart and savvy but also a guy who listens to advice and does his best to follow the advice."

Last summer, Masoud's communication skills were vital in his efforts to get his family out of Afghanistan when the U.S. moved out and the Taliban moved in.

At the time, his family had no plan to leave Afghanistan. His mom had just bought beautiful new rugs for their home. But when the Taliban took over their city faster than anyone expected, they knew they needed to get out quickly. Masoud's work with the U.S. Army as an interpreter put a target on their backs. Staying was just too dangerous.

Masoud initially tried official government channels to get his family out, putting together a packet for what is known as a P-2 visa. But in late August, he got desperate and started cold-calling senior U.S. military officials to ask for help – a bold move for such a junior officer.

Masoud spent a harrowing few days finding a hideout for his family in Kabul, staying up through the night, sending messages, coordinating travel, and calling anyone he thought might be able to help.

Some of those senior officials, who knew of Masoud's work, ended up writing letters on his behalf. And when his parents and siblings were finally on a plane out of the country, Masoud could breathe again.

"He was willing to risk a lot. He was desperate to get help for his family," said Canfield. "And the thing is: He pulled it off! Because he so easily fits in and engages so appropriately that people accept what's he's trying to accomplish."

Masoud's parents and younger brother are now living with him along with his wife and two young kids in their home in Virginia. While he knows it will be an adjustment, especially for his parents, he is hopeful for a bright future for his younger siblings. Masoud said his little sister, who was in medical school in Afghanistan, might even apply to attend WashU.

Fahim Masoud

HOMETOWN:
Herat, Afghanistan

MAJOR:
History

POST-GRAD:
International Relations and Affairs
University of Illinois Springfield
Master of Arts, 2020

Strategic Intelligence program
National Intelligence University
Master's degree expected 2023

CIVILIAN JOB:
Middle East and North Africa Intelligence Manager in Crisis24 division of GardaWorld, a global security company

ON REFLECTION:

> When you grow up in a society like Afghanistan, you are hungry for why there is so much messiness, why there is so much badness, and you are trying to do everything you can to find a cure, and I think history has a lot to offer.

Masoud with his mother and younger brother in Virginia, shortly after they escaped Afghanistan in 2021.

PERSPECTIVE

The power of conversation across disciplines

BY JOSH VALERI, CLASS OF 2022

Valeri plays drums in a band he formed with friends. (Photo courtesy of Josh Valeri)

When I first came to WashU, I was fascinated with the idea of objective knowledge. I saw education as a process of transcending personal biases to approach universal truths. As a full-scholarship student, I also viewed education as a means of transcending the relative limitations of my financial background to achieve universal notions of "success." With these lofty goals in mind, and a half-hearted belief that I was destined to become a doctor, I declared a major in biology.

Four years later, on the cusp of graduation, I'm relieved these plans fell through. What I found instead is the incredible power of interdisciplinarity – of putting different views in conversation.

By the end of my first year, I realized that I simply had no desire to become a doctor, and my ideals of objectivity were not as solid as I thought. So in addition to my STEM classes, I began to explore my interests in philosophy, writing, and music.

In a class on 17th-century philosophy, I discovered the philosophical foundation of a scientific method nearly identical to the one taught in my biology classes. Clearly, scientific objectivity had stood the tests of time. But this class also showed me how unstable systems of rational inquiry could be when applied to features of subjective human experience. System after system had been developed by philosophers to objectively sort and describe human passions, and none of them had attained the universal influence of the scientific method. It seemed like a systematic, purely objective knowledge of emotional and aesthetic experience kept slipping away from the microscope. I came to realize that capturing the subjective with the objective is essentially impossible.

In "General Chemistry," I learned about the double-slit experiment, which demonstrates that whether light behaves as a wave or as a particle depends on whether the light is observed. In other words, despite our best efforts to understand the nature of light objectively, our subjectivity will always intrude on this understanding. This experiment is one of the best metaphors I've found for my own experience: I can use logic and data to make decisions and chart my path toward "success," but my subjective passions and interests will always disrupt the rational framework.

> What I found instead is the incredible power of interdisciplinarity – of putting different views in conversation.

I eventually added a second major in comparative arts to my studies of environmental biology, and that coursework has helped me more fully appreciate this duality. My extracurricular activities across disciplines have, too. Through WashU's radio club, KWUR 90.3 FM, and playing in rock bands with friends, I discovered how music can simultaneously resonate on a deeply personal level and also create a community. During internships with Tyson Research Center and the *Ampersand*, I explored the art of science communication, creating written and multimedia content to engage general audiences with the work of researchers.

Room to explore and eventually thrive on the intersections of the subjective and the objective – of the arts and the sciences – has been the most rewarding part of my time at WashU.

Looking ahead to graduation and beyond, I hope to continue placing these concepts in conversation. As an aspiring media and communications professional, I'm keenly aware that misinformation masquerading as objective truth is being packaged in aesthetic formats – catchy music, sleek graphic designs, elaborate visual humor, and well-edited videos – that demand attention in ways that journal articles simply do not. I believe we can, and must, harness the arts and the sciences to address the spread of misinformation, which has become so harmful during the pandemic.

My experiences at WashU have taught me that I, like science, cannot afford to ignore the importance of the arts. Instead, I see a future where their combined powers can build connections, shape communities, and lead us toward a stronger society. I'm excited to be a part of that future.

Josh Valeri is a senior majoring in environmental biology and comparative arts. He is an *Ampersand* intern, a student program coordinator for Deneb STARS, a Civic Scholar, and an executive member of Performing Musicians Resource Group.

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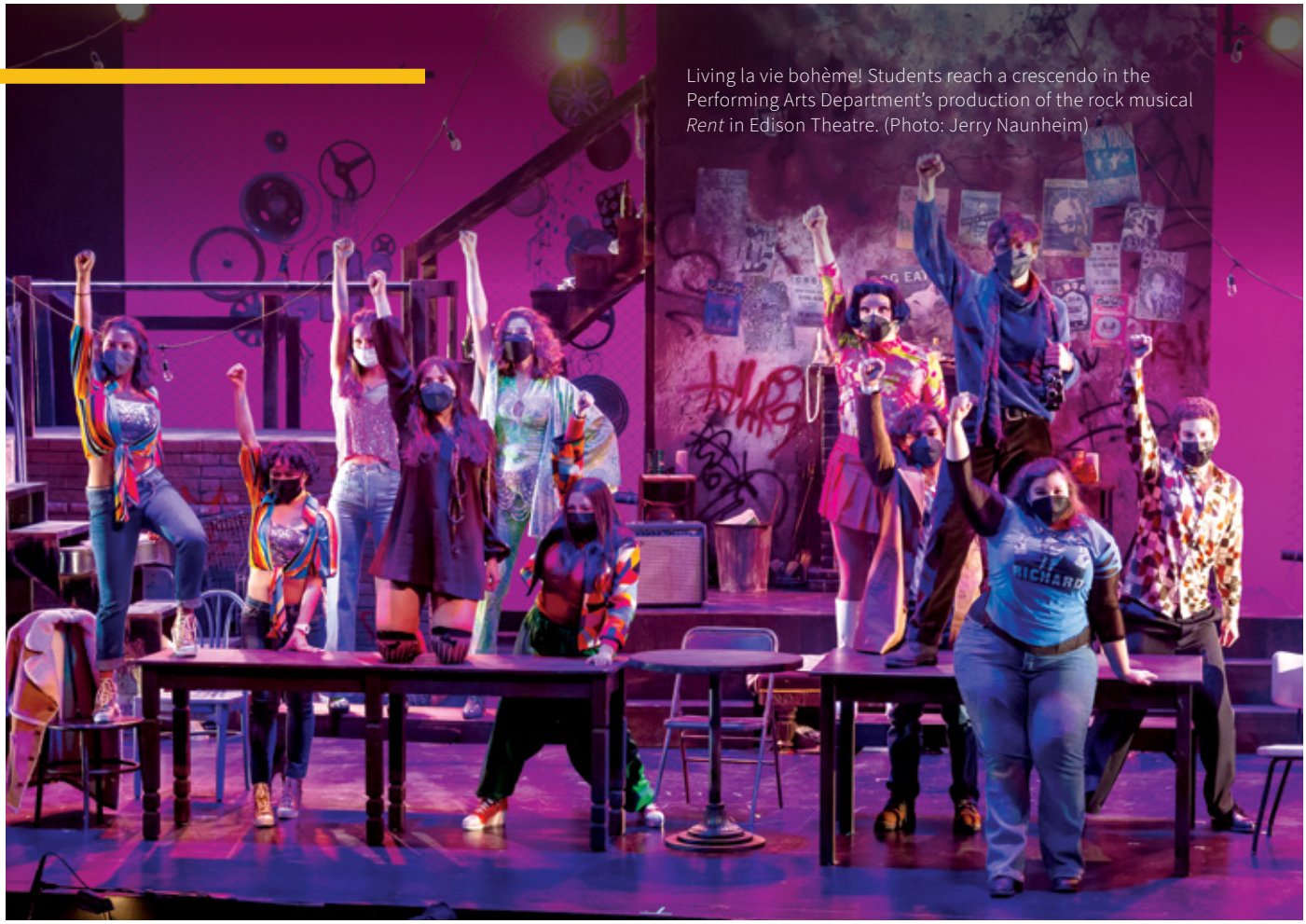

Living la vie bohème! Students reach a crescendo in the Performing Arts Department's production of the rock musical *Rent* in Edison Theatre. (Photo: Jerry Naunheim)