

FALL 2023

# Arts & Sciences



## The Resilience Issue

Getting a grip in  
changing times

**S** Syracuse University  
College of Arts & Sciences



**ON THE COVER** For improved traction on snow and ice, look no further than *Ursus maritimus*. In a recent study co-authored by biology professor Austin Garner, researchers explored the design principles of polar bear paws that allow them to have better traction compared to other bear species. Their work could ultimately inform human engineering challenges associated with traction. See p. 32.

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**“In this issue, see what our faculty have to say about artificial intelligence, deepfakes and social media.”**

## DEAR ALUMNI AND FRIENDS—

**B**y the time you read this magazine, I’ll have been dean of this wonderful Arts and Sciences (A&S) community for nearly a semester. However, I have long since felt a connection with the work being done here. It all started in 2014-15, when I was serving as a program director for the National Science Foundation. This involved being part of a team that processed and managed incoming proposals.

Hundreds of applications crossed our desks. Among the ones I found myself often going back to were those submitted by researchers at Syracuse University. They stood out in terms of quality, but also, to my mind, possibility. As a result, my attention was often drawn back to Syracuse to see how those projects turned out.

So, when the opening for dean at the College of Arts and Sciences arose, I saw an opportunity to be part of an institution on my mind—and on the rise.

For example, as someone who has lived and been educated on three continents, I am energized by the University’s commitment to global education and human thriving, which perfectly aligns with the ethos of A&S’ disciplines.

I’m also excited thinking about our approach to teaching the liberal arts, which confer a lifelong benefit on our graduates, no matter the field. Not only are they prepared for a lifetime of careers by developing their soft skills—instead of being trained for one job that may change radically in a decade—they also are gaining a powerful intellectual reference point that will allow them to make sense of, and potentially transform, today’s evolving world. You can read more about me and my thoughts on this topic in the article starting on p. 22.

Indeed, if the racing pace of change has you struggling to take it all in with a balanced view, then the liberal arts can help. In this issue, see what our faculty have to say about artificial intelligence, deepfakes and social media (you’ll be surprised). I hope this guidebook of sorts provides you with helpful context in navigating contemporary cultural developments. Enjoy!

Sincerely,

Behzad Mortazavi

Dean, College of Arts and Sciences





OK, Google, tell me a physics joke.

One joke I found is, Why can you never trust atoms?

They make up everything!

# Being Smart About Artificial Intelligence

From double-checking grammar in a document to helping to develop vaccines, artificial intelligence (AI) is everywhere. You may have a general idea of what it is but not fully understand how it actually works. Or, perhaps you are skeptical but also excited for the possibilities.

We're here to help. Let's take a look at how AI and machine learning are already being used in positive ways throughout industry and higher education, including by our own faculty members in the humanities and the sciences.

First, let's define AI. It's an all-encompassing term that describes the use of technology to make a computer mimic human thought and perform tasks in real-world environments. Every time you use a virtual assistant like Siri, Alexa or Google Assistant (Google Nest device pictured, left), you are using things powered by AI.





# Being Smart About Artificial Intelligence

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## What industries are using AI?

Many, and more are expected. In the United States, 25% of companies are adopting the technology and 43% are exploring how they might implement it in the near future. Indeed, AI is expected to see an annual growth rate of 37.3% between 2023 and 2030.

Health care, manufacturing, retail and banking are already ahead of the curve in using AI. For example, health care uses AI in its imaging tools, like an MRI, to detect cancer cells earlier and pinpoint more effective treatments, while also using the technology to set schedules. Not only does AI allow manufacturing plants to operate 24 hours a day, seven days a week, but it is also used to improve quality control and institute better inventory processes. Retail is using AI to track buying habits, and, particularly since the pandemic, make online shopping easier and much more common with the ease of an app. In addition, it is one of the industries leading the way with chatbots to handle customer service issues around the clock. And, banking is using AI to more quickly perform tasks, such as determining loan risks, setting credit limits and detecting fraud.

## A&S FACULTY USING MACHINE LEARNING IN RESEARCH

Here are a few other examples of AI and machine learning used by researchers to power through complex, time-consuming calculations. Find the definition of machine learning on p. 9.

**Professor of Physics Britton Plourde** is an expert in quantum computing, which aims to solve complex problems, such as simulating the interaction of molecules for medicine or analyzing particle physics, that are impossible even with the best conventional computers that exist today.

**Earth and Environmental Sciences Assistant Professor Tao Wen** used applied machine learning to analyze data from 226 rivers across the country, assessing the extent of human interactions on levels of salinity and alkalinity, as well as the safety of drinking water critical to humans and the environment.

**Associate Professor of Communication Sciences and Disorders Jonathan Preston** is the principal investigator of an NIH-funded project that uses an extensive library of speech sounds and AI to think and hear the way a speech-language clinician does. This could help learners get high-quality practice on their own between clinician sessions.

*At right, from top: Britton Plourde, Tao Wen, and Jonathan Preston*



*AI helps quickly analyze large data sets, such as salt and alkalinity levels in rivers studied by Professor Tao Wen.*

## We've seen this before

The World Economic Forum projects that AI will create 97 million jobs by 2025 to support this growing technology, but it also anticipates 85 million jobs will become obsolete as machines replace certain roles, such as customer service representatives, accountants and truck drivers.

This shift could be similar to the Industrial Revolution of 1760 to 1840. Economies long based on agriculture and human labor transformed into large-scale industries powered by machines. It is likely that the changes that came out of the Industrial Revolution were met with similar skepticism to what AI is evoking today. But it's hard to argue with advancements like interchangeable parts, water and steam power, the light bulb and the telephone.

## Higher education is using AI, making strides in the arts and sciences

Higher education has begun embracing AI. Yes, colleges and universities are scrambling to update the rules now that students have the capability to complete course assignments in minutes using technology like ChatGPT. But AI also gives schools the ability to quickly calculate financial aid so that families can make timely, well-informed decisions. It also offers a more inclusive environment for college students with various learning needs through adaptive systems that can, for example, create more natural sounding synthesized speech during testing or adjust course content to a student's individual pace. And it can set alerts to warn advisors when students are in danger of failing or not meeting graduation requirements.

At Syracuse University's College of Arts and Sciences (A&S), many faculty members are looking at ways to use AI—particularly machine learning—to advance their research and expose students to the possibilities that this technology has in almost any major.

For example, Michael Marciano, a professor of practice in A&S' Forensic and National Security Sciences Institute (Forensics), co-invented a novel hybrid machine learning approach to help analyze DNA mixtures—a promising contribution to the criminal justice system.

## Turning the tide of AI in forensics

"Artificial intelligence, and more specifically machine learning, in forensic science has grown significantly," explains Marciano, who is Forensics' director of research. "Contrary to common belief, forensic science typically lags in the adoption of new technologies. This is because the justice system requires thoroughly vetted high quality methodologies. Widespread adoption of AI-based methods in other core services (financial markets, automotive industry and health care, for example) have started to turn the tide on the use of AI."

AI has also been an important research tool at the intersection of biology and the physical sciences and engineering, according to Kenan Professor of Physics Lisa Manning, director of the University's BioInspired Institute.

"Many researchers in the BioInspired Institute are already using AI and machine learning to better quantify features of biological systems, develop more effective interfaces between materials and living systems and design new bio-inspired materials," explains Manning. "For example, machine learning is being used to quickly and efficiently identify cells in an image of dense biological tissue, and then quantify whether some of the cells have shapes or protrusions that are indicative of disease."

And while AI seems to be an outstanding fit for the sciences, it is making strides in the arts, too.

## New ways of studying music, language and the arts

"AI is a fascinating subject for those of us who study and teach music history because the use of artificial intelligence to compose new music relies on formulas, patterns and common musical tendencies. In other words, it is working within the realm of familiar genres and styles, and this is precisely what we deal with in

**"Contrary to common belief, forensic science typically lags in the adoption of new technologies because the justice system requires thoroughly vetted methodologies. Widespread adoption of AI-based methods in other services (financial markets, for example) have started to turn the tide on AI."**

Michael Marciano



**“I could imagine playing an AI song in my American Popular Music class and getting the students to hear and analyze exactly how it is replicating particular pop music conventions.”**

Theo Cateforis

our research and in our courses,” explains Associate Professor of Music History and Cultures Theo Cateforis. “I could imagine playing an AI song in my American Popular Music class and getting the students to hear and analyze exactly how it is replicating particular pop music conventions. AI in this sense can tell us something about the building blocks of the music—its form, instrumentation, arrangement, melodies, rhythms, timbre and more—that we consume on a regular basis and what kinds of emotional effects and responses it seeks to elicit.”

Associate Professor of Linguistics Amanda Brown, who is the director of the linguistic studies program, says those in her field are discovering new possibilities every day and collectively trying to learn “as fast as we can,” while also examining how to best protect human creativity and ownership of work.

“The potential is vast. For example, we are able to create language products in specific genres using the style of specific individuals—like a rap using Shakespearean language, for example—in seconds,” Brown explains. “However, along with this comes a need for understanding of what might be considered plagiarism. Thus, new practices and guidelines may be needed to help appropriately attribute contributions.”

### **Where does AI go from here?**

In a recent Gates Notes blog post, Microsoft founder Bill Gates recently noted, “We should keep in mind that we’re only at the beginning of what AI can accomplish. Whatever limitations it has today will be gone before we know it.”

Certainly, there will be valid concerns related to ethics, regulations and even the law that will have to be weighed against new and amazing capabilities. Some believe it’s too much too fast, as is evident when over 1,000 leaders in tech, including X (Twitter) CEO Elon Musk and Apple co-founder Steve Wozniak, signed an open letter in March 2023 suggesting AI training be paused to allow time to develop protocols to prevent “a potential risk to society and humanity.”

Renowned AI researcher Eliezer Yudkowsky of the Machine Intelligence Research Institute and best known for his study of “friendly AI,” or that which has a positive impact on the human race, says, “The greatest danger of AI is that people conclude too early that they understand it.” He and many others contend that the best of AI will come through continued research, open discussion and sharing of knowledge that comes from the human brain to ensure the complexities of this amazing technology are handled responsibly.

It is fascinating to think what is possible. Given the work already being done at A&S, as well as throughout Syracuse University, it is exciting to think that faculty and students will most certainly make their own contributions to help create AI solutions we cannot even yet imagine. 🍌

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# AI-Related Terms

Get up to speed with this handy guide.

## ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) is an all-encompassing term that describes the general ability to use technology to make a computer **mimic human thought** and perform tasks in real-world environments.

## NARROW AI

Narrow AI uses computers to design something for one specific task. It is the form of AI used today. If you're ever asked Amazon's virtual assistant **Alexa** whether it's raining outside, resolved a customer service problem using a chatbot (a program designed to simulate human conversation online) or checked the status of an airplane in flight, then you've used narrow AI.

## GENERAL AI

This is a topic of much research, debate, fascination and even fear, but, in reality, it does not yet exist—and many say it never will. Theoretically, general AI can teach itself by replicating the human brain's ability to reason, plan and problem solve, while also understanding and incorporating human needs, emotions and beliefs into the decision making process. There are no actual examples of general AI, but some may be able to relate through the imaginative technology seen in science fiction-based movies like Pixar's **WALL-E** and television shows like **Star Trek: The Next Generation**.

## MACHINE LEARNING

This is an application of AI that uses machines (computers) to utilize large amounts of data and program algorithms to imitate how humans learn, ultimately making data-based decisions. In addition, it learns through self-correction—learning through trial and error—as well as the input from updated and more specific data. However, that learning isn't possible without human input. If you've ever had **Netflix** suggest a new movie you might like based on your previous selections, then you've experienced machine learning.

## DEEP LEARNING

This term refers to a subset of machine learning that uses artificial neural networks to mimic the learning process of the human brain. In addition to traditional data, it can use complex patterns in pictures, text and sound to predict outcomes. It can learn and self-correct from its environment and past mistakes, too, without human intervention. **Driverless cars**, for example, use deep learning to not

only navigate but also distinguish a pedestrian from a stop sign. While it is far from a perfect technology, it is making great strides and holds significant promise.

## CHATGPT

ChatGPT is a **deep learning tool** trained to generate texts such as homework essays, intended to read as if humans have written them.

## CHATBOT

This is a **computer program designed to handle routine tasks by simulating conversation** with humans as if it were a real person. A chatbot responds to commonly posed questions by using a predetermined script and machine learning algorithms. There are bad chatbots that are used to send unsolicited information, often over the phone, but there are also many useful applications that provide a greater level of efficiency that can answer questions, track customer feedback or even remind you when a prescription is ready at the pharmacy. 🍌



*The Orange Bot is one way Syracuse University employees can report a technical issue on campus.*

# Clues to Use

## DEEFAKE EDITION



In March, this AI-generated image of Pope Francis went viral. Upon closer inspection, his **right eyelid appears to be merging into his glasses** and his **fingers do not appear to actually be grasping the coffee cup** he's carrying.



This “really cool macro shot of a bee” was originally shared by @AmazingNature00 on X (formerly Twitter) in April 2023, but is actually AI-generated. Bees have **eyes that normally look like honeycombs** when viewed up close (see inset), and this image is noticeably missing that detail.

In March 2023, a digital image of 86-year-old Pope Francis wearing a glossy, ankle-length white puffer coat was shared around the world. It was, of course, fake.

Did you wonder how it was created? You can thank deep learning.

Deep learning is a form of artificial intelligence, (see “Cheat Sheet,” p. 7), trained to simulate skills that traditionally only humans could do, such as writing or creating a photograph or other visual art.

Fraudsters unfortunately can use AI to create and distribute misinformation and hoaxes.

This kind of misleading text, image or video is often called a *deepfake*, which is shorthand for an authentic-seeming computer simulation powered by a deep learning computer network.

Deepfakes are getting better and better at looking realistic—and they are easier to create. The pope’s puffer coat fake image was apparently created by a construction worker using the image generator Midjourney, which can create deepfake pictures from simple text prompts. Many computer-generated deepfakes have become so believable that programmers are enlisting those same tools—deep learning systems—to identify if an image has been altered by software and root out scammers.

Humans can still have the upper hand against fakery, thanks to the critical thinking skills you’ve honed over a lifetime of school, work and social interactions.

### Sharpen your skeptic’s skills

First, try to slow down. Today’s media culture is influenced by shorter formats such as X (formerly known as Twitter) and TikTok.

“Our attention is being diverted from one post or message to the next and the next, and we lack the time needed for critical reflection,” says Chris Hanson, associate professor in the Department of English, who specializes in game studies; digital media and culture; and film, television and media studies.

Watch out for messages or images targeting you with emotionally loaded messages to provoke strong responses of fear or anger, attempting to manipulate your opinions or actions in a particular direction. You can sometimes spot deepfakes because they tend to oversimplify issues when you know the world is more complex. Deepfakes often disseminate conspiracy theories but fail to offer supporting proof. Or deepfakes can just be implausible—like the image of the pope.

## “Verify and then trust”

The pre-internet world was more patient when President Ronald Reagan offered his famous maxim, “Trust but verify,” during nuclear arms negotiations with the Soviet Union.

“Maybe we should change the order of those words to ‘verify and then trust,’” says Hanson. “Even if you think you’ve verified some information, you should verify and verify again, and then maybe you can trust with a healthy dose of skepticism. That’s a significant mental shift in how we look at the world—to be distrustful from the onset is not a positive thing for us.”

You might have a better chance of spotting a deepfake if you become a serious student of news.

“We can start by diversifying our media ecologies,” says Lenny Grant, an assistant professor of writing and rhetoric in the Department of Writing Studies, Rhetoric and Composition. Grant researches medical communication and teaches undergraduate and graduate courses on writing and technology. “By ecologies, I mean everything that we take in for news. The greater diversity that you have in your media ecology, you can lower your chances of getting a singular stream of information that could mislead you. You have a better chance of seeing information resources that catch deepfakes.”

Media diversity allows you to gain more perspectives on events. “Read your local newspaper or other community news sites, adding state, national and international media. Have a balanced diet of different-sized journalistic outlets in different situations of journalism.”



This photo, posted to Facebook by Ong Hui Woo, purports to show three of Tom Cruise’s stunt doubles at the wrap party for the latest Mission Impossible film. In actuality, the photo was created by Woo using Midjourney, an AI-powered program that uses prompts to generate digital images. If you look closely at the middle stunt double, he appears to be **missing fingernails on his right hand**.



This AI-generated photo of President Joe Biden wearing an inflated bubble wrap suit to “help him avoid unnecessary injuries” was shared across social media in June 2023. Taking a closer look, however, shows that Biden’s **left hand has 7 fingers**, revealing the image to be fake.

## An ancient problem in new packages

Misinformation has always been with us. The ancient study of rhetoric has been an attempt to blunt its power.

“Rhetoric, going back almost 2,700 years, is about using the available information at hand to make the best possible decisions going forward,” says Grant. “Rhetoric is targeted toward the good, and the good of society. It is a civic and social enterprise. We should be deeply invested in rooting out bad actors who would mislead us as we deliberate on how we should move forward in our own lives, or in our collective lives.”

Deepfakes are raising some challenges that we’ve never seen before. “Determining a speaker or writer’s authenticity and the credibility of their messages have been central concerns of Western rhetoric since ancient times,” says Grant. “We are in the midst of a very old problem just in a brand-new way.” 🍌

## WHAT’S YOUR AI IQ?

### Look out for messages and images that

- ☐ provoke strong responses of fear or anger.
- ☐ oversimplify issues when you know the world is more complex.
- ☐ promote conspiracy theories but fail to offer supporting proof.
- ☐ seem implausible.

### Sharpen your skepticism by...

- ☐ slowing down as you read and digest media.
- ☐ verifying before trusting.
- ☐ becoming a serious student of news.
- ☐ diversifying your sources of information.



# Dear Social Media, Can We Start Again?

Despite headlines to the contrary,  
social media can help us live better lives.



**H**ow do you view social media? With mixed feelings, perhaps? Between the supposed correlation between usage and mental health effects, and the potential for spreading misinformation, it's almost enough to make you want to delete your accounts. But many of us don't, perhaps because they feel so indispensable in the modern world. But maybe the question should be, is social media really that bad?

### **The case against social media: time to look again**

Zahra Vahedi, assistant teaching professor of psychology, has been studying that very question. She's been analyzing the data from large groups of studies to reveal social media's effects as a whole. In short, her answer is a resounding no. "I looked at the association between social media use and depressive symptoms, and one with self-esteem, and one with body image disturbance," says Vahedi. "What we consistently find, is that, yes, there is an effect, but it's very, very small—so small that it's to the point where, statistically, psychologists would say it is negligible."

Vahedi goes further: The idea that social media use can cause negative mental health outcomes has been one irresponsibly touted by the media, as the data to corroborate this simply does not exist. "Because the majority of this research is cross-sectional (studying correlation) rather than experimental (manipulating behavior), we shouldn't be making any causal claims whatsoever," she says. "That's where we see a disconnect between what's published and what's reported in news outlets. The negative stuff just makes for flashier headlines."

Vahedi is not alone in this conclusion. Several papers, including one in *Journal of Child Psychology and Psychiatry*, have of late reinforced that thus far, links between mental health and social media use have shown both positive and negative effects—but in just about all of the studies, the size of the effects is statistically insignificant (and again, the relationship is only correlational, not causal). Though some studies suggest that excessive usage is sometimes seen with those already vulnerable, they also question whether perhaps a person in distress is more likely to overindulge in social media—and they point out that troubled relationships in online lives could be a reflection of troubles in offline lives.

### **How social media can help us connect—and when it doesn't**

Afton Kapuscinski, associate teaching professor in the psychology department, echoes these contrasts. "It's possible that social interaction, even virtually, may provide some buffer against stress for those who have more limited social circles for whatever reason—maybe their social skills are an area for growth, or because they've moved to a new place. They might use social media as a way to find friendships online or connect to a group of people with similar interests," she says. "Somebody I worked with was able to find a hiking group online, and it felt safe because they all met in a group and went out together, and it turned into some real solid friendships." This calls to mind the advantages of scanning a site like Facebook Marketplace for used furniture rather than, say, Craigslist—it is less anonymous than other online classifieds, which makes meeting to make purchases feel safer.

**"It's possible that social interaction, even virtually, may provide some buffer against stress for those who have more limited social circles."**

Afton Kapuscinski



A student broadcasts a class project through Instagram. Social media apps can help us work, learn and live better and with more happiness.



Fan reviews of Mona Awad's *Bunny* on TikTok helped propel sales.

**"I had nothing to do with what happened to *Bunny* online. That is one very lovely thing about it, that we can discover and share art with each other."**

Mona Awad

On the flip side, Kapuscinski says, is so-called passive use of social media, where a person scrolls and watches but never participates. "[Individuals might] fall into the same patterns on social media as they do in their lives outside of social media. If somebody is avoidant, they're not able to directly interact with people. But [online], they are consuming things that can influence the ways that they view those same people, and how they view themselves." In other words, there are absolutely negatives that can come from social media—just as there can be dysfunction in how an individual navigates real-life interactions.

### Social media in the workplace: the practical, the good, the magical...

One very active social media participant is Associate Professor of Biology and René Crown Professor in the Sciences and Mathematics Heidi Hehnly. Hehnly studies cell biology and runs her lab; but she also maintains an account on X (formerly known as Twitter), a Facebook page for a group she works with in collaboration with College of Visual and Performing Arts professor Boryana Rossa that blends science and art, The Bio-Art Research Coalition of Syracuse, and many professional accounts, such as ORCID, Google Scholar, and ResearchGate. "I [got advice] in grad school that I should control my name on the internet and control what people see [when they search for me]," she says. "I thought that was very smart."

Hehnly loves how social media keeps her in the know about current issues. "There was this one *Nature* paper that came out, and there was a storm on Twitter for a week—people were really upset about this paper," she says. (The paper in question? One that supplied evidence for the idea that important discoveries are being made less frequently than in the past.) "If I hadn't been on Twitter, I would have read the paper and thought, 'Oh, interesting,' and moved on. I wouldn't have known, in real time, that there was this huge hubbub." Information learned from Twitter has even shaped the angles from which she approaches her studies, she says. "There was a mini Twitter storm about superplots about how to present data in a rigorous and transparent way. I'm obsessed with the graphing style now; I love it."

Novelist Mona Awad, the Esther M. Larsen Faculty Fellow in the Humanities and assistant professor in the English department, has experienced perhaps the best of what social media has to offer, in response to her most recent book, *Bunny*. "In the fall of 2021 I heard from my agent that suddenly the sales of *Bunny* had just taken off, and went from selling a few hundred a week to selling over a thousand a week," she says. "It turned out that the book had this following on TikTok."

Yes, every novelist welcomes brisk sales, but when Awad speaks of it, she seems more in awe of the phenomenon of watching her work take on a new life in the hands of its readers. "There's something beautiful about social media, and you see it with music, too, where you can discover albums and artists that you would never have encountered before," she says. "It allows artists to have this new reach, and you don't even need to participate as an artist. I had nothing to do with what happened to *Bunny* online. That is one very lovely thing about it, that we can discover and share art with each other."

### ...and the ambiguous

"I talk to scientists who refuse to be on social media," says Hehnly. "I think it's a naïve standpoint. If you look at how publishing works, it's so dependent on this relationship with social media." Is that problematic at all? "Well, yes," she says. "Journals now link their scientific research to social media, and measure how much it's shared. It's hard to be successful without learning how to use social media as a job, because journals and the system are setting us up to perform in that arena. It can shape what gets studied. Yes, that scares me."

Awad mentions social media's potential hindrance of artistic pursuits: "To some degree, constant awareness of everybody's responses to everything is intense. I don't know how good it is for creators, because in order to create that work we have to really separate, and go to a place where we don't feel like we're being seen or watched. As a writer, that's the only way to make something authentic and exciting."



## The takeaway

So how are we to view social media at this moment in time? With eyes wide open to the risks, but making the positives work for us, it seems. In moderation. As a part of your complete breakfast, as it were. Awad stays away from her phone when she's writing; Hehnly makes her X mission posting (and re-tweeting) good news and scientific studies she admires, and coaches her students on how to use social media as part of the job—namely, using it professionally, not getting personal, and staying positive. As for children and adolescents, Vahedi recommends proceeding with caution. “Very smart people develop these applications; they know the positive reinforcement element, the distraction element. For certain developmental periods of life, being distracted and immersed in that kind of environment isn't really doing children much favor.”

If you're feeling like your personal usage has been disproportionately large or makes you feel just not great, Kapuscinski recommends installing limiting apps or taking a social media break. “Ask yourself, does social media make your life feel fuller or more empty? Does it make you feel more or less connected to other people? That's the crux of the issue. If it helps you feel more connected to others, great. If you feel worse about yourself, it's time to take a break and find ways to connect with real people.” 🏠

**“It's hard to be successful without learning how to use social media as a job, because journals and the system are setting us up to perform in that arena. It can shape what gets studied.”**

Heidi Hehnly

## LET YOUR FEED NOURISH YOU...IN MORE WAYS THAN ONE

Next time you edit your accounts, follow these forces for good in the world.

### INSTAGRAM

**Hilton Carter** @hiltoncarter

If you love making things grow, you will learn a lot (and his “plant rants” always make us smile).

**National Geographic** @natgeo

Get your daily dose of wonder, fascinating animals and news you can use right here.

**New York Times Cooking** @nytcoking

Spark your culinary creativity with this feed.

**Subpar Parks** @subparparks

Artist Amber Share turns frowns upside down by turning negative Yelp reviews about state and national parks into gorgeous ad posters.

**The Webb Telescope** @nasawebb

Get your head into the clouds and see what's new in the world of space exploration.

### FACEBOOK

Have you checked out Marketplace? It may become your new favorite place to shop.



# Hypotheses for Happiness



# From climate change and pandemics to polarized politics, our constant newsfeeds can set anyone on edge. Yet how do some people remain calm?

We turned to three A&S professors to learn what their discipline can teach us about maintaining a grounded, happier life.

**Every discipline explains the world from a different perspective. How does your field contribute to our understanding of happiness and a grounded life?**

**KN:** Two philosophers who influence my current work—Aristotle and Kant—argue that if we have a mistaken view of who we are, we will end up chasing after forms of happiness that will be dissatisfying. In Aristotle’s view, human happiness is a form of activity that expresses practical wisdom. It is the disposition to do the right thing, at the right time and for the right reasons. Aristotle believes that we learn to act well by having good teachers and good friends.

Kant’s view is that human beings typically progress from less mature to more mature conceptions of happiness, with tendencies to act in pursuit of pleasure or to compare oneself against others and seek to be better off than they are. He argues that we will only experience genuine satisfaction when we move beyond that.

**JO:** Psychology suggests that happiness and living a grounded life come in different shapes and forms. People vary in how much they value a happy life, a meaningful life or a rich life. Following a way to a happy life when I want a purposeful life might not get me to my goal. For example, most of us want to feel happy, but sometimes we confuse feeling happy with not feeling stressed. But feeling negative emotions doesn’t mean we’re not happy. Even if we’re not necessarily feeling happy, we might be satisfied and content with our lives as a whole. I might be physically exhausted and stressed out after a hard day at work, but because my work is meaningful for me, I might feel like my life overall is ideal.

**GL:** Mathematicians approach complex problems by breaking them into smaller and smaller pieces to identify the crux of the matter. This is a valuable skill for finding solutions to all sorts of issues in life. For instance, parts of my job at the moment require me to be an administrator. Issues at the department level can seem overwhelming because they often involve more people and more stakeholders. But at their roots, these problems can be approached in ways similar to complicated mathematical problems, breaking them into the smallest possible pieces and assembling a solution from there.

Mathematicians also reason a lot by analogy, using patterns and structure to try to understand new situations in terms of more familiar ones. This is fallible, but recognizing patterns in human behavior and understanding the interconnectedness of different aspects of life can allow creative solutions.

**Professor Leuschke, is there a mathematical formula for happiness?**

**GL:** While I don’t necessarily buy into their hypothesis, researchers at University College London have proposed a computational model that measures how the

## OUR EXPERTS:

**Graham Leuschke**

Professor and department chair, mathematics



**Karin Nisenbaum**

Renée Crown Professor in the Humanities and assistant professor of philosophy



**Jeewon Oh**

Assistant professor of psychology



**“Figuring out what makes you feel happy, content or purposeful and filling your life with more of those things is a great start.”**

Jeewon Oh



*A&S faculty agree that focusing on an activity, like reading, a math problem, or even a meditation exercise like this at the Barnes Center at The Arch, can help you feel grounded and happier.*



## EXERCISES FOR HAPPINESS

Looking for help to see the glass half full? Take these cues from A&S faculty to foster positivity and optimism in your life:

### Talk with Friends or Loved Ones.

Even the ancient philosophers recognized the importance of community and friendship. Turning to others as a sounding board—or serving in that role for others—can provide satisfaction and meaning.



### Spend Time Writing or on Other Creative Activity.

You don't have to write a memoir or opera to benefit from expressing yourself through writing. Exercises such as keeping a gratitude journal to purposely record good things that happen each day, or writing a letter of gratitude to someone who has impacted you in a positive way, have been shown to promote optimism and good mood.

### Immerse Yourself in Deep Study or Problem-Solving.

Whether working on a puzzle, reading difficult material or solving a math problem, deep focus helps to clear the mind from ruminating over everyday concerns.

passage of time dulls the emotional impact of events. In their experiments, they found that the effects of past decisions, both wins and losses, decrease by about 40% with each new step. This means that after five other events happen, the first event has lost more than 90% of its impact on our happiness. The exception to that is the connection between risk, happiness and reward. Generally, taking a risk to achieve something brings greater happiness.

### What do psychology and philosophy tell us about staying positive in times of uncertainty?

**JO:** Although research generally shows the benefits of taking on a positive frame of mind, there are often lessons to be learned from our negative emotions. Uncertainty always exists to some degree and while some people are relatively fine with uncertainty, others may find uncertainty unbearable. So, understanding and acknowledging where you are on the spectrum is a good first step. We shouldn't avoid experiences simply because they don't feel good, but there are lots of research-based exercises related to practicing optimism, gratitude and mindfulness to view things more positively.

**KN:** One thing we can do to find a more positive frame of mind and deal with uncertainty is get clear on the highest good in our lives—what is most valuable to us? If we have a clear conception of what we value most, that will help us avoid wasting time and energy chasing after things that ultimately aren't as valuable. And it will help us focus on protecting the things (or relationships) that are more valuable. Aristotle tells us that without having a clear conception of that highest good—all "desire will be empty and futile." In my view, it is also important to step back and ask ourselves whether the values we have are really our own, and to try to live authentically.

### Any other key insights to happiness you think are universally applicable?

**KN:** Both Aristotle and Kant emphasize the value of community and friendship. Aristotle believes that we need friends in order to flourish, because living a good life involves knowing that we have a good or virtuous character. He says that a friend is a kind of mirror. We can see ourselves reflected in their behavior, and in that way know the nature of our own character. Kant believes that to be virtuous, we need to live in a community of people who also value virtuous behavior, so that those who surround us won't corrupt our motivations. I don't fully agree with the reasons why Kant values community, but I do feel incredibly fortunate to practice a profession that provides a community of people who value the sorts of things that I most value and presents opportunities to form meaningful and lasting friendships.

**JO:** Figuring out what makes you feel happy, content or purposeful and filling your life with more of those things is a great start. Research also suggests the importance of positive close relationships. In fact, having closeness to others who can share positive experiences can amplify the emotional benefits of those experiences. No wonder we find positive relationships to be an importance source of well-being.

### What do you take from your discipline that keeps you on an even keel personally?

**KN:** I think of reading philosophy as a kind of spiritual exercise. It can be very difficult, and it demands enormous concentration. Often, after an hour or two, I return to my other activities with more focus and attention, and with a less self-absorbed frame of mind. I think this also happens when we experience beauty. Experiences of beauty command our attention and enable us to focus on something other than ourselves.

**JO:** I really experience the power of close relationships. For example, there are times when I'm worried because I don't know how things are going to turn out in the future and a long conversation with a loving family member or a friend is all that it takes to bring me back to feeling OK. Trying to be that kind of person to others also gives me a sense of purpose and meaning.



Focusing on something fun with friends is a great mood enhancer as these students are doing in the Physics Lounge.

**GL:** I don't know whether mathematics contributes to most people's happiness the way it does mine, but there are at least a few of us. Deep concentration on a mathematical problem can be like meditation. I've always said that the most important thing in a mathematician's office is the door, which needs to be closed for extended periods. This isn't to be antisocial, but the most difficult problems require immersion, clearing your mind of details like laundry or lunch and focusing only on the problem. A solution, when it comes—if it comes—combines the pleasure of fitting in the last jigsaw puzzle piece with a kind of catharsis. 🙌

**“Deep concentration on a mathematical problem can be like meditation.”**

Graham Leuschke

## THE POWER TO HEAL

Faculty projects demonstrate the restorative outlet the humanities can provide.

### Project Mend

Through Project Mend, Patrick W. Berry, associate professor of writing and rhetoric, helps current and formerly incarcerated individuals and their family members use creativity to process their experiences and move beyond the impact of the criminal justice system, work featured in the journal *Mend*.



### Environmental Storytelling Series of CNY

The Environmental Storytelling Series of CNY brings faculty, students and local Syracuse community partners together to address climate change through creative outlets. Co-founded by Brice Nordquist, Dean's Professor of Community Engagement and associate professor of writing and rhetoric, the series combines scientific expertise, artistic expression and humanistic interpretation.



### Newtown Odyssey

Newtown Odyssey is a nontraditional opera that tells the story of New York City's Newtown Creek, one of the most polluted waterways in the United States. Novelist Dana Spiotta, associate professor of English, wrote the story and libretto, which was conceived in collaboration with composer Kurt Rohde and artist Maria Lenz.





# Gateway to the Cosmos: A&S Launches New Research Center





**T**his fall, the College of Arts and Sciences celebrated the opening of the Center for Gravitational Wave Astronomy and Astrophysics (CGWAA). Led by Stefan Ballmer, professor of physics, it will advance the design and operation of gravitational wave observatories and astrophysics research.

The opening of CGWAA positions Syracuse University at the forefront of groundbreaking research. The center, eight years in the making, will create a hub for students and faculty to participate in the design and operation of gravitational-wave observatories, including Cosmic Explorer, a next-generation observatory capable of better sensitivity and higher precision than ever before. The Center will also educate the next generation of scientists who will use cutting-edge supercomputer technology to search data and model the behavior of exotic objects like supernovae, neutron stars and black holes.

**“The next-generation detectors of Cosmic Explorer will give us a reach to the earliest stages of the universe.”**

Stefan Ballmer

CGWAA is the latest in a string of monumental feats for astrophysicists at Syracuse University. In 2015, A&S faculty played a leading role in the discovery of gravitational waves from colliding black holes—a historic first in the field of astrophysics, ushering in a new era of astronomy.

Ballmer, who was involved in that breakthrough, has been at Syracuse since 2010. During his time at the University, he has played a critical role in the design and commissioning of the Advanced LIGO detectors and the

scientific interpretation of their observations, work he will continue to pursue with the Cosmic Explorer project.

“The next-generation detectors of Cosmic Explorer will give us a reach to the earliest stages of the universe,” says Ballmer. “It will be able to observe black holes merging in the most distant galaxies that even the powerful James Webb Telescope can barely detect. Gravitational-wave observations have truly become the new frontier in astrophysics.” 🍌



Speakers at the opening included, from left, Edo Berger, Professor of Astronomy, Harvard University; Duncan Brown, Vice President for Research, Syracuse University; Stefan Ballmer, physics professor and CGWAA director; Nergis Mavalvala, Dean of the MIT School of Science; Dr. Frans Pretorius, Professor of Physics, Princeton University.

(Left) Two neutron stars at the moment of collision.

# Arts & Sciences Celebrates

**A**long with celebrating its newest alumni, A&S also celebrated two notable anniversaries this May and a new class of incoming students in August.



(Clockwise, from top left) **Debra Adams Simmons '86**, senior director of editorial projects for GBH, delivering the **alumni keynote address** at the A&S | Maxwell undergraduate convocation. **A graduating student** doesn't miss the chance to take a pic with his diploma and Otto the Orange. **Hands in the air**—time to celebrate!



## HAPPY 150TH, HOL

May 2023 marked the sesquicentennial of the dedication of the iconic **Hall of Languages**.

Scan the QR code at right to scroll through a lighthearted commemorative “scrapbook.”



## 10 YEARS OF KINDNESS

10 years after his speech for A&S | Maxwell Convocation went viral, acclaimed author and professor **George Saunders G'88** revisits its message, “Is Kindness Still Relevant?” For years, Saunders’ theme has struck a chord with readers around the world and has since been immortalized, as websites including Business Insider, CNN, Vox, Esquire and many others rank it among their **top ten Commencement addresses** year after year. The speech even inspired his 2014 book, *Congratulations, by the way*, where Saunders explores acts of kindness and identifies his biggest regrets—failures of kindness.



Visit [go.syr.edu/as/Kindness](https://go.syr.edu/as/Kindness) to hear Saunders (above) tell the story behind his famous 2013 address.



# Welcome, Class of 2027!

**FIRST-YEAR AND TRANSFER STUDENTS** in A&S | Maxwell were welcomed to campus with the annual **department fair and reception** in the JMA Wireless Dome. Following the deans' remarks, students explored the wide variety of programs offered by A&S | Maxwell, chatted with professors and advisors and had some fun with departments' interactive exhibits.



(Top) **A&S Dean Behzad Mortazavi** discusses the role of the liberal arts in preparing students for a lifetime of careers. (Center) Students asked faculty about degree programs at the very popular **department fair** part of the program. (Left) **Valera Martinez '26**, an environmental sustainability and policy, Earth sciences and sociology major, took over the A&S Instagram account (@artsciencessu) over the weekend and showed incoming students what a typical day on the Hill is like.

(Top) Interactive activities included this opportunity for students to discover their inner poet, courtesy of the Department of English. (Bottom) **Dean Mortazavi** introduced himself to incoming students and their families, and even posed for photos.



# Meet Behzad Mortazavi

A&S dean sees liberal arts as invaluable for preparing students for a lifetime of careers.



**B**ehzad Mortazavi became dean of A&S in July 2023, after 15 years as professor at the University of Alabama (UA).

In his research, Mortazavi specializes in biogeochemistry, the study of the chemical, geological and biological processes governing the composition of and changes to the natural environment. Specifically, he explores the impact of urbanization and climate change on watersheds.

We recently sat down with Mortazavi to learn more about his research, what drew him to Syracuse and his vision for A&S.

*Above: Dean Mortazavi conducting research at a marsh on Dauphin Island, Alabama.*

## Can you talk a bit about your research in biological oceanography, and what it entails?

I finished my master's in marine ecology in Paris in 1992 and I came to Florida State to the Department of Oceanography to do my Ph.D. My dissertation was on how changes in river flow would impact a nearshore marine system.

In the early 1990s, Atlanta realized that they were going to run out of their freshwater, and they wanted to withhold water from the Apalachicola River that would ultimately come down to Florida and flow out into the Gulf of Mexico. At the outflow of this river, there's a very productive estuary known in the past for producing about 90% of the oyster harvest in Florida. There were concerns that changing the water flow into this system would impact the productivity of the bay. I worked with physical and chemical oceanographers to determine how changes in hydrology and nutrient delivery could impact the productivity of the bay.

## How did your research evolve from there?

I got hired at UA in 2008 because I had worked in marine and terrestrial ecosystems in the few years prior, so I could speak the lingo between terrestrial and marine researchers. I connected dots between what was happening at the Dauphin Island Sea Lab on the coast and on the main campus, which is in Tuscaloosa hundreds of miles away. We're losing around 1% marsh area per year on the Alabama coast, and that rate of loss matches the global average. It is important to understand the implications and causes of this since these are nursery grounds for many

commercially important fish as well as sites of nitrogen removal.

## How does climate change factor into this equation?

Our most recent funding, through the Department of Energy and in collaboration with colleagues at the Pacific Northwest National Lab, looks at how changes in flow will impact nitrogen cycling in a watershed that's located in Tuscaloosa, Alabama, a representative site for many low-relief watersheds in the southern U.S. This is important to understand because climate change is causing more extreme events like droughts and floods. We're working to determine how frequency and magnitude of floods in these watersheds with intermittent streams are impacting their capacity to process nitrogen and carbon. We are going to generate models that will help us predict ecosystem changes resulting from climate variability in the decades to come.

## How can this issue be addressed?

I think the trajectory we are on right now is very concerning. What we're expecting is rising temperatures and rising CO<sub>2</sub>, and unless we manage to reduce emissions globally, what we're going to see is higher temperatures and more extreme events. Our goal is to try to understand how those climate change factors really impact the ecosystems and then bring that awareness back to the public, as well as to people in power who can make the decisions in terms of protecting our natural resources. This is where collaborations between humanists and scientists are vital. The Environmental Storytelling Series of Central New York is a great example of how this can be achieved: by uniting faculty, students and members of the community across disciplines to confront the climate crisis together, locally.

### What drew you to Syracuse University?

During my time as program director at NSF, I got acquainted with the quality of the research that was being done at Syracuse. The University also had, from what I could tell, a very successful implementation of the strategic plan (of 2015) that had led to a lot of hires. The diversity of the campus and focus on international programs also drew me in, and once I met with the faculty and administrators, it really solidified my impression of Syracuse in terms of being a forward-thinking institution that is having a great impact.

### What are some of the unique strengths of A&S that you have noticed during your time here so far?

What stands out to me is the true dedication to the liberal arts education and the commitment by each department in making sure our students are part of the community and that they're prepared to tackle the complex issues facing our world. I am impressed with the unwavering commitment of our faculty and students in addressing challenges such as climate change, social injustice and disease—and also their focus to bring more hope and humanity to the world through things like literature, poetry and intercultural engagement.

### How do you see the sciences and humanities working together to address contemporary ecological health and social challenges?

Humanity has become such a big component of ecological change. There was just a recent research article in *Geophysical Research Letters* stating that the groundwater we've withdrawn from Earth has been so great that the tilt of the planet has shifted, so humans are a massive force in how the planet is changing. I feel like interdisciplinary work and collaborations between scientists and humanists are going to be important because it will shed light on how we are agents of change. Humanities disciplines can lead us to seeing ways to change people's hearts and minds and ultimately improve our world.

### Can you speak to the significance of diversity on campus?

It's important for students to have role models in terms of graduate students who they could identify with that are not too far in life from where they are. Recruiting underrepresented graduate students and faculty is critical, not only in terms of race, but in all aspects of diversity, so that our students feel a true sense of belonging. Evidence shows over and over that diverse teams are more creative. I think that diversity helps us learn better, too.

### What do you think is central to maintaining a contemporary liberal arts experience for today's students?

When I look at the national statistics, people on average change jobs around 12 times during their career. The question in the back of my mind has always been, what career is it that we're preparing these students for when we have a hard time even predicting what the job market is going to look like in 10 years? I feel that the liberal arts education is really about equipping our students with critical thinking skills and problem-solving skills that no matter where their future takes them, they'll feel prepared to tackle the problems that they might face in their career or the choices they'll have to make.

Being able to write clearly, speak persuasively and think creatively are assets transferable to any job market. A historian that then goes on to become a lawyer will be much better prepared compared to people who might have had a more straightforward path because now they have a perspective that is far more enriching. The liberal arts are how we are preparing students for a lifetime of careers. 🙌



Dean Mortazavi and Vice Chancellor and Provost Gretchen Ritter, far right, with members of the A&S dean search committee including, (from left) Catherine Montgomery, graduate student majoring in psychology, Brice Nordquist, Dean's Professor of Community Engagement, and Heidi Hehnly, Renée Crown Professor in the Sciences and Mathematics.

# The Alumni Effect

Many of you have told us how much you value your A&S liberal arts and sciences experience and are looking for ways to pay it forward. Whether it's through a gift of your time in the form of mentoring, or a gift of financial support, you can easily make a difference for one student or many.

Think you can't have an impact? Thanks to the generosity of alumni like you, here are a few examples of how our alumni family has collectively helped A&S students this year:



50+

Student grants for  
internships and research



1,000+

Meetings between students  
and alumni mentors



20

Exceptional faculty  
members hired



76%

Of first-year students  
received financial aid



Sharing your professional experience is an important tool in helping an A&S student plan their career path. It's as easy as having one (or as many as you want!) video or phone call with them through the A&S | Maxwell mentorship program. For more information or to sign up, visit [go.syr.edu/as/GetInvolved](https://go.syr.edu/as/GetInvolved).





**Participating in the A&S mentoring program** is a great way to help students build on what they've learned in the College's formal career advising process. Here, Taylor Stover '24 (top, left) receives professional advice from Bob Wright '71. Irving Gonzalez '21 (bottom left), and Matthew Wheeler, associate director of alumni relations, discuss strategies for academic and career advancement.

## Alumni Dispatches

**Carl Bogus '70, L'73** published his third book, *Madison's Militia: The Hidden History of the Second Amendment* (Oxford University Press, 2023).

**Dr. Alan Eachus '60** and the **Rev. Elaine B. Eachus '61** recently celebrated their 62nd wedding anniversary. They met at Syracuse University in 1958.

**Sarah Glover '96**, a nationally recognized leader in news and social media strategy, was named vice president for news and civic dialogue at WHYY last year, one of Philadelphia's largest newsrooms. Glover was previously managing editor for Minnesota Public Radio's MPR News and was a 2021 Nieman Visiting Fellow at Harvard.

**Rami G. Khouri '70, G'98 (Newhouse)** reports that he is now at the American University of Beirut, where he serves as director of global engagement, adjunct visiting professor of journalism, director of Anthony Shadid Archives research project and senior public policy fellow at the Issam Fares Institute.

**Louis Kriesberg '53 Ph.D.** published *Fighting Better: Constructive Conflicts in America* (Oxford University Press 2022) and also published the sixth edition of *Constructive Conflicts* with Bruce Dayton (Rowman & Littlefield).

**Warren Schultz '71** produced and directed *Grant's Ghost*, a full-length play, at Hubbard Hall in Cambridge, New York. 🍷

Updates based on alumni submissions or public news sources. Send career and contact information to [cc.syr.edu/AandSUpdate](mailto:cc.syr.edu/AandSUpdate). Updates may be published at the editor's discretion and may be edited for length and clarity.

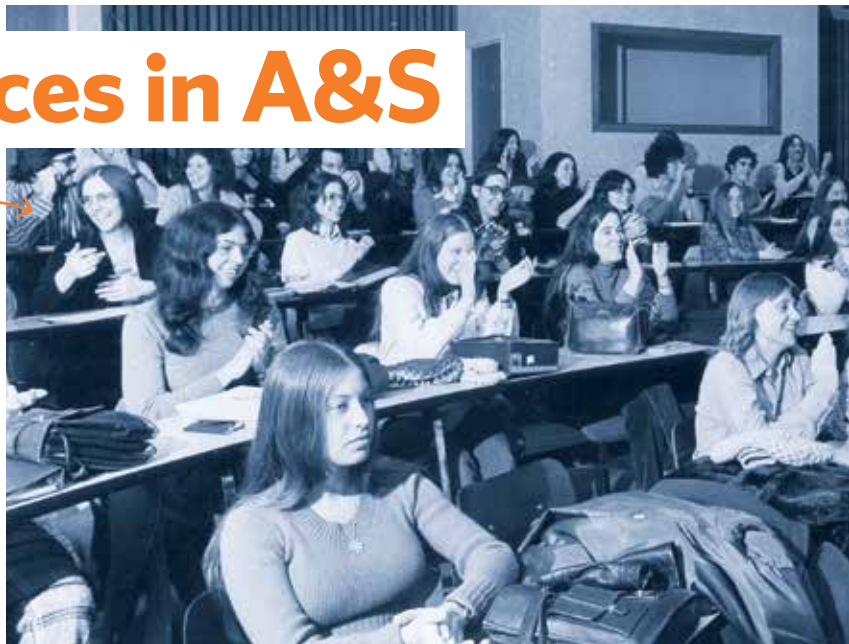
## IN THE SU SPOTLIGHT

**Kevin J. Bell '74**, CEO Emeritus of Chicago's Lincoln Park Zoo and former chair of the A&S Dean's Advisory Board, shown here with the zoo's current CEO Megan Ross, received the R. Marlin Perkins Award for Professional Excellence from the Association of Zoos and Aquariums, its highest possible honor.

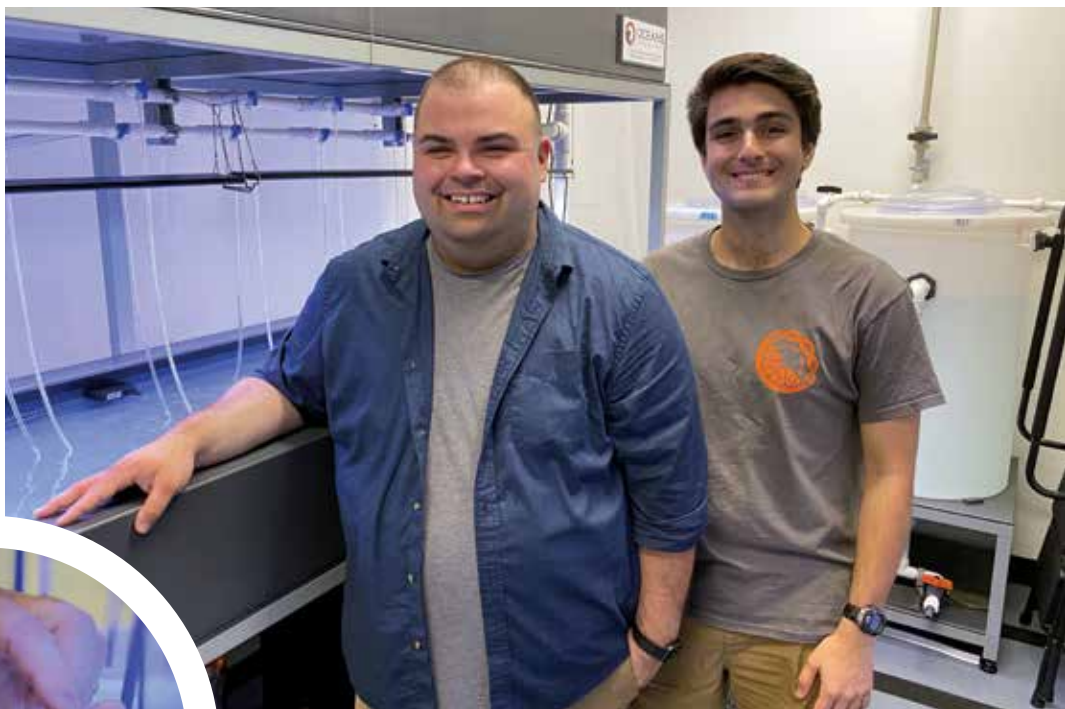


# Fresh Spaces in A&S

Is this how you remember classes? Well, take a look at some of the latest upgrades to labs, study and work spaces, including new and improved labs in the Life Sciences Complex, refreshed chemistry department gathering areas, renovated rooms in Huntington Beard Crouse and the lobby of Heroy Geology Laboratory.



Biology professor Austin Garner, (left in photo, with graduate student Andrew Moura) in his new lab in the Life Sciences Complex—complete with **a new water table and tanks** accommodating live sea urchins (below).



**Huntington Beard Crouse room 217** (right) underwent renovation and is now home to an **Languages, Literatures and Linguistics Multicultural Space**.







The renovated lobby (left) of the Heroy Geology Laboratory offers a quiet, comfortable study area among art, stone and fossils, such as a fossilized tree trunk (below right).



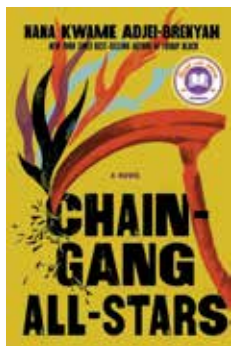
The chemistry department space in the Life Sciences Complex has a **new meeting room** (right) equipped with the latest tech to foster inter-institution collaboration and **a lounge** (above) where students can brainstorm, study or just hang out with their peers.





# A&S Bookshelf

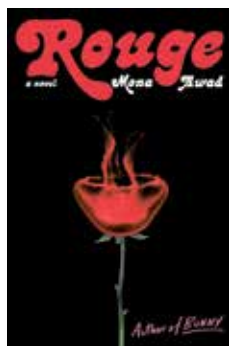
A selection of the latest from A&S faculty and Department of English alumni.



## Chain-Gang All-Stars

**Nana Kwame Adjei-Brenyah G'16**

Two top women gladiators fight for their freedom within a depraved private prison system not so far removed from America's own. Finalist for the 2023 National Book Award in Fiction.



## Rouge

**Mona Awad**

Professor of English

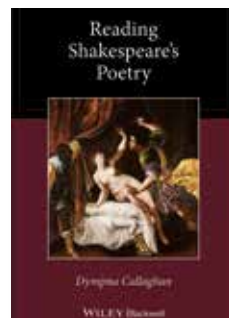
A gothic fairy tale about a lonely dress shop clerk whose mother's unexpected death sends her down a treacherous path in pursuit of youth and beauty.



## House of Cotton

**Monica Brashears G'22**

In this debut novel, 19-year-old Magnolia Brown is broke and accepts a job offer from a mysterious, slick stranger. But is it really the answer to all her problems?



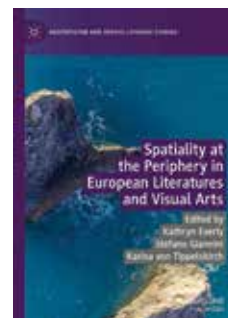
## Reading Shakespeare's Poetry

A lively exploration of Shakespeare's poems and how they speak to readers

**Dymphna Callaghan**

University Professor and William L. Safire Professor of Modern Letters, Department of English

An essential guide to the interpretation and context of Shakespeare's non-dramatic poetry.



## Spatiality at the Periphery in European Literatures and the Visual Arts

**Kathryn Everly, Stefano Giannini and Karina von Tippelskirch (Co-editors)**

Professors, Languages, Literatures and Linguistics

This work analyzes the impact migrations have had on Europe's literary and visual representations in the 19th to 21st centuries.

## IN CASE YOU MISSED IT

### Honors and Recognition for Faculty Authors

Professor of English and bestselling author **Mona Awad** was featured earlier this year in the April 20 *New York Times* Style Magazine where famed author Margaret Atwood (*The Handmaid's Tale*) selected Awad as her 'literary heir apparent.'





### Godefridus Schalcken

A Late 17th-century Dutch Painter in Pursuit of Fame and Fortune

**Wayne Franits**

Distinguished Professor and chair, Art and Music Histories

The first book in English dedicated to the entire artistic output of Dutch artist Godefridus Schalcken (1643-1706), it examines the artist's paintings and career trajectory along with his ceaseless pursuit of fame.



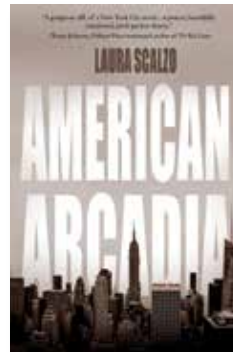
### A Medium Seen Otherwise

Photography in Documentary Film

**Roger Hallas**

Associate professor of English

This significant contribution to documentary film, photography and media studies provides close readings of more than 35 films, including canonical documentaries and obscure films from around the world.



### American Arcadia

**Laura Scalzo '83**

New York City, 1985: the Statue of Liberty is under reconstruction, the Twin Towers hum with money and the clubs pulse with music. Four 20-somethings find themselves grappling with friendship and love, life and death.



### Penny Dreadful and Adaptation

Reanimating and Transforming the Monster

**Will Scheibel**

Associate professor and director of undergraduate studies, English Co-editor (with Julie Grossman)

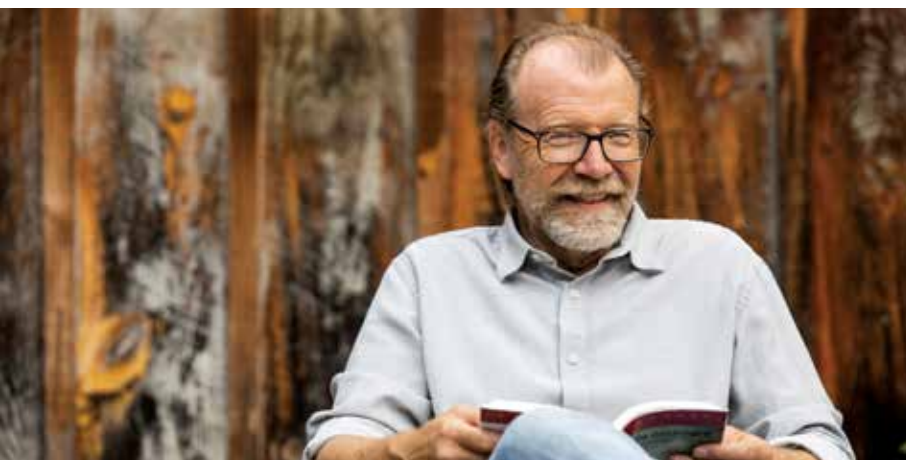
This first book-length study of the Showtime-Sky Atlantic television series *Penny Dreadful* has as much to say about the Romantic and Victorian eras as it does about our own.



### After World: A Novel

**Debbie Urbanski G'04**

A groundbreaking debut that follows the story of an artificial intelligence tasked with writing a novel—only for it to fall in love with the novel's subject, Sen, the last human on Earth. 🏠



Acclaimed author and creative writing professor **George Saunders G'88** received the Library of Congress Prize for American Fiction at the National Book Festival in Washington, D.C., in August.

# In the Headlines



## **Vatican Repudiates ‘Doctrine of Discovery,’ Used as Justification for Colonization**

The New York Times | March 30, 2023

“It’s not just a legalistic formulation, it’s a worldview that is set in motion during the age of discovery, that we’re still having to cope with.”

**Philip Arnold**, associate professor of religion

## **SU Forensic Scientist Weighs in on Drugs Found in White House**

CNN | July 2023

“Really, what we’re talking about is touch DNA. Someone that held this bag may have left traces of their DNA, and very often there’s not enough for a full profile. Additionally, we often get

mixtures of more than one person’s DNA on drug baggies like this.”

**Kathleen Corrado**, executive director of the Forensic and National Security Sciences Institute

## **How hard is it to win the lottery? Odds to keep in mind as Powerball and Mega Millions jackpots soar**

Associated Press | July 19, 2023

“Even if you bought a lottery ticket for every drawing over 80 years—two times a week for Mega Millions and three times a week for Powerball—you would still be far less likely to win than to be struck by lightning once in your lifetime.”

**Steven P. Diaz**, professor of mathematics

## **Has ‘Ted Lasso’ boosted soccer’s popularity in the U.S.? We asked the experts ↑**

The Los Angeles Times | March 29, 2023

“Maybe it’s made a slight dent. This is a very classic feel-good story, right? It’s relentlessly optimistic, and I think it hit a chord in that way more so than anything else. Actually, my point is that, yeah, it’s helping with the game’s popularity in the United States. Marginally.”

**Vlad Dima**, professor and chair of African American studies





## Why It's So Hard to Tear Down a Crumbling Highway Nearly Everyone Hates ↑

The New York Times | June 3, 2023

"After World War II, large numbers of African Americans came to Syracuse to work in factories such as Carrier, the air-conditioning manufacturer. Virtually all of them moved to the 15th Ward, a sliver of a neighborhood between downtown and University Hill. They did so largely because restrictive covenants barred Black people from buying or renting elsewhere in the city."

**Kishi Ducre**, associate professor of African American studies

## Sonar expert says underwater 'banging' heard by Coast Guard at sub search site is 'debris falling from the decaying wreck'—and proof of life of Titanic Five is 'wishful thinking' →

Daily Mail | June 21, 2023

"There's no telling where the sound is coming from or how far away it is. Personally, I'm worried that sound may be coming from something that's far from where they need to be looking... It's like dropping a marble into a tin can. It's rattling around and that would confuse the location."

**Jeffrey A. Karson**, professor emeritus of Earth and environmental sciences

## The race to save Silicon Valley's untold Black history: 'Nobody had recorded any of this ever'

USA Today | June 7, 2023

"Missing accounts like these from the early days of Silicon Valley are slipping from the world like water into the crevices of a sidewalk. It's going to take something tremendous to suck that water back out so we know what exists in those cracks."

**Herbert Ruffin**, associate professor of African American studies

## How regional fault lines led to such a destructive earthquake in Turkey, Syria

ABC News | February 19, 2023

"There are four tectonic plates, massive slabs of rock made of up Earth's lithosphere, that interact in Turkey...The bigger the fault (crack where two blocks of rock slide past one another), the bigger the earthquake."

**Joshua Russell**, assistant professor of Earth and environmental sciences

## How long will the smoke last in Massachusetts? 'It's going to stick with us' as state issues air quality advisory

Boston Herald | June 6, 2023

"When local authorities warn about poor air quality, windows should be closed. Air purifiers can help improve indoor air quality, and they're useful in reducing the buildup of small particles and unhealthy gases."

**Eric Schiff**, professor of physics 🏠

Scan the QR code to check out A&S' media hits page for the latest articles featuring quotes by A&S faculty.



View of the bow of the RMS Titanic photographed in June 2004 by the ROV Hercules during an expedition returning to the shipwreck of the Titanic.

# Discoveries and Recognition

From scientific research to creative expression, see what A&S faculty are working on.



## Studying How Animals Get a Grip

Biology professor **Austin Garner** studies how animals attach to surfaces in variable environments. In one published paper, he and a research team explored how polar bear paw design principles help improve traction. The group studied the hard bumps on the foot pads of bear paws called papillae, which have long been thought to help them grip ice and keep from slipping. The team discovered that the papillae on polar bears were taller than on other species—up to 1.5 times. Although their paw pads are smaller compared to the other species, the taller papillae compensate for their smaller paw pads, giving them a 30% to 50% increase in lateral grip and helping them gain better traction. This work identifies a new nature-based method that could be incorporated into human engineering of products that often slip on snow and ice, such as tires and shoes.

In a second study co-authored by Garner and biology graduate student **Andrew Moura**, they investigated how excess freshwater in the ocean from climate change-associated events such as increased torrential rainstorms are impacting sea urchins' ability to remain attached to their surroundings. They found that that sea urchin movement and adhesive ability were harmed by low salinity conditions, shedding light on how sea urchins may fare in a changing environment.



Hover your smartphone's camera over this code to read the full article.



## A Star's Unexpected Survival

A star's encounter with a black hole isn't necessarily fatal, A&S researchers have found. Physics professor **Eric Coughlin** was part of a team that devised a model that maps a star's surprising orbit around a supermassive black hole—revealing new information about one of the cosmos' most extreme environments.



## Uncovering Secrets About Ancient CO<sub>2</sub> Levels

Ever wonder what our climate might be like without trees? Earth and environmental sciences professor **Christopher Junium** and a team of researchers discovered that the emergence of large forests may not have played as important of a role in decreasing carbon dioxide as previously thought. Their findings were published in *Nature Communications*.



### Physicists Help Design and Launch CERN Device

A&S scientists in the High-Energy Physics group helped launch a new tracking device at CERN in Geneva, Switzerland, to research the fundamental forces and particles in the universe. The installation is the culmination of a decade of research and work, led by physics professor **Marina Artuso**. The project received nearly \$7 million in awards from the National Science Foundation.



### Celebrating Humanities Scholarship

The Syracuse Symposium, an annual public event series organized around a theme by the Syracuse University Humanities Center, celebrated its 20th anniversary this year, with the theme Landscapes. Also this year, the Central New York Humanities Corridor, an interdisciplinary consortium of 11 institutions, celebrated its 15th anniversary. Both are under the direction of **Vivian M. May**, professor of women's and gender studies.

### Significant Support for Math Research

Seven professors from A&S' mathematics department have been awarded National Science Foundation grants. Professors **Minghao Rostami, Jani Onninen, Dan Coman, Josh Pollitz, Claudia Miller** and **Lixin Shen** were awarded National Science Foundation grants for their ongoing work, and Miller and **Stephan Wehrli** saw a one-time grant for hosting a regional seminar.



### Crown Professors Recognized

A&S professors **Heidi Hehnly** and **Karin Nisenbaum** are the inaugural Renée Crown Honors Professors. The professorships are made possible thanks to a generous gift from the family of esteemed alumna and Trustee Emerita Renée Schine Crown '50, H '84. Through the professorships, Hehnly and Nisenbaum will each serve a term of three years, teaching Honors courses and helping guide Honors students in their thesis research projects.

### Mellon Foundation Award

A&S professors **Carol Fadda** and **Dana Olwan** received an Andrew W. Mellon Foundation grant for their research on race and racialization, social justice and community engagement. Their project, "Black-Arab Relationalities: Confronting Racism, Narrating Solidarities," examines the impact of racism and discrimination on the interconnected histories and lived experiences of Arab and Black communities living in the City of Syracuse.



### Science Faculty Honors

Four A&S faculty members received highly competitive national awards in recognition of their teaching and research. Professors **Tripti Bhattacharya** and **Alison Patteson** were named Alfred P. Sloan Foundation Fellows, an honor recognizing early-career scholars who represent the most promising scientific researchers working today.



In addition, Patteson received a 2023 Cottrell Scholar award, a national honor from the Research Corporation for Science Advancement that ranks her among the country's best faculty researchers and teachers from the fields of astronomy, chemistry and physics. Adding to the significant list of awards, Patteson, Bhattacharya and chemistry professors **Olga Makhlynets** and **Rachel Steinhardt** also won National Science Foundation CAREER grants, the NSF's most competitive award in support of early-career faculty who have the potential to serve as academic role models in research and education. 🏠





# Meet the Faculty

21 new professors joined A&S this fall.

Hover over this code with your smartphone's camera for a link to more information about these new faculty members.



**Abrar Al Jiboury '15, G'23**

Professor of Practice  
Biology



**Arun Brahmhatt**

Assistant Professor  
Religion



**Christopher Brunt G'11**

Assistant Teaching Professor  
English



**Craig Cahillane**

Assistant Professor  
Physics



**Pierre Yves  
Gaudreau Lamarre**

Assistant Professor  
Mathematics



**Christine Geyer '04, G'13**

Assistant Teaching Professor  
Writing Studies, Rhetoric  
and Composition





**Josh Hunt**

Assistant Professor  
Philosophy



**Byungsam Jung**

Assistant Teaching Professor  
and Russian Language Coordinator  
Languages, Literatures  
and Linguistics



**Kyle Kaplan**

Visiting Assistant Teaching Professor  
Art and Music Histories



**Sarah Lucas**

Assistant Professor  
Biology



**Rachana Maharjan**

Assistant Teaching Professor  
Mathematics



**Lauren Mavica**

Associate Teaching Professor  
of Neuroscience  
Director of Neuroscience  
Integrated Learning Major



**Jaynelle Nixon**

Visiting Assistant Teaching Professor  
Women's and Gender Studies



**Natalie Novotna G'22**

Professor of Practice  
Forensic Science



**Jennifer O'Reilly (Schindel)**

Assistant Professor  
African American Studies



**Jennifer Pan**

Assistant Teaching Professor  
Writing Studies, Rhetoric  
and Composition



**Yalian Pei**

Assistant Professor  
Communication Sciences  
and Disorders



**Cary Peñate**

Assistant Professor  
Music History and Cultures



**Josh Pollitz**

Assistant Professor  
Mathematics



**Joseph Wilson**

Assistant Professor  
Writing Studies, Rhetoric  
and Composition



**Michelle J. Zaso G'15, G'19**

Assistant Professor  
Psychology



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Peapack, New Jersey

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Program director, School of Science,  
Technology & Health Studies, SUNY Morrisville  
Life Trustee, Syracuse University  
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and Government Affairs, Apple  
Washington

**Paul Swartz '05**

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Boston Consulting Group, Henderson Institute  
New York

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