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The U Collaborates with Tulane on up to $23 Million Cancer Moonshot Project to Build Advanced Tumor Imaging System

Three SCI Faculty Earn Top National Award for Early Career Scientists and Engineers

Celebrating 30 Years of SCI

SCI's Tamara Bidone Helps Lead $8.5M Leducq Network for Vascular Breakthroughs

SCI
THE UNIVERSITY OF UTAH

Scientific Computing and Imaging Institute
at the University of Utah

In This Issue

SCI X Relaunched

A SCI postdoctoral fellow and seven graduate students harnessed momentum from last year's 30th anniversary celebration to successfully relaunch the SCI Technical Exchange—better known as SCI X—on April 11, 2025.

This year's reimagined SCI X focused on giving SCI members a chance to learn about each other's research, unlike previous outward-facing exhibitions aimed at informing the greater community. SCI research groups, including students and One-U Responsible AI Initiative researchers, presented their work at podium talks and poster sessions, exchanged ideas, and discussed potential collaborations. The seamless, single-track event was set up so that attendants could see everything. "This is an impossible task, to summarize the work of SCI in a single day," the planning committee wrote. "But it is a task we pursue nonetheless."

Thank you to the planning committee for this inspiring event: Jake Bergquist, Elham Ghelichkhan, Nitishsaikumar Kadiyam, Jakob Johnson, Tark Patel, Ishratjahan Eliza, Hunor Csala, and Arleth Salinas.
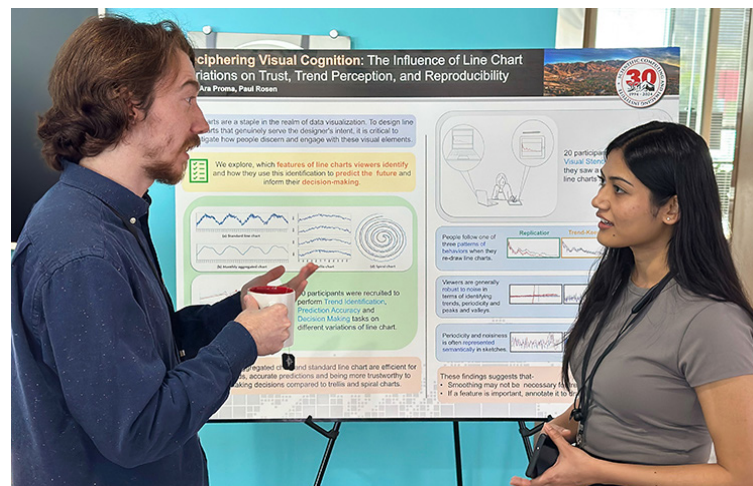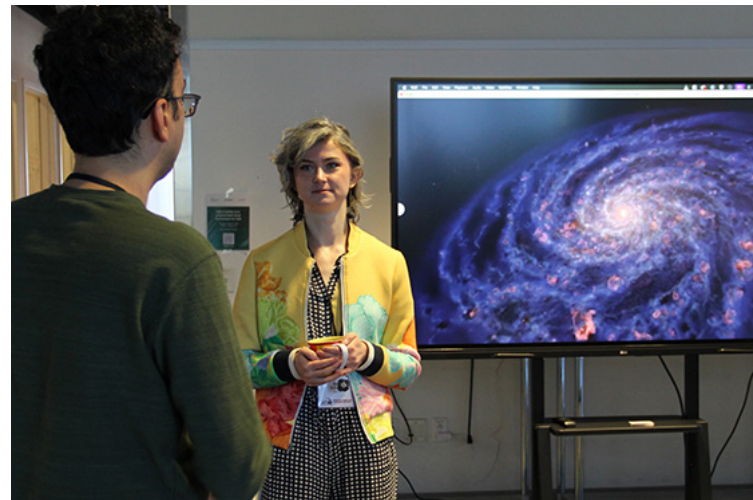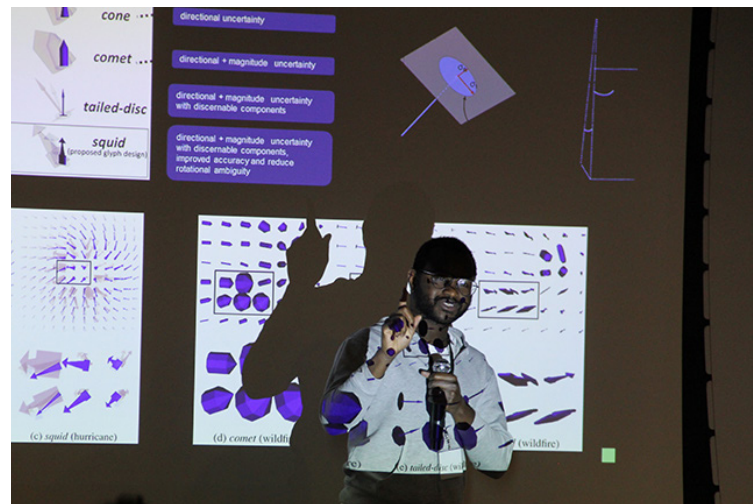
The U Collaborates with Tulane on up to $23 Million Cancer Moonshot Project to Build Advanced Tumor Imaging System

Cancer surgeries often rely on a surgeon's judgment to determine how much tissue to remove, as current imaging methods struggle to clearly define the margins of a tumor. This uncertainty can lead to incomplete removal of cancerous cells, requiring additional surgeries and risking recurrence.

Valerio Pascucci, professor in SCI and the Kahlert School of Computing, is helping to change that. He is part of a multi-institutional team awarded up to $23 million through the Biden Cancer Moonshot initiative to develop MAGIC-SCAN (Machine-learning Assisted Gigantic Image Cancer margin SCANner), a revolutionary imaging system that will allow surgeons to detect residual cancer cells in real time during surgery.

Led by Tulane University, with collaborators from the University of Utah and the University of Georgia, the project aims to reduce the time it takes to confirm complete tumor removal from days or weeks to just 10 minutes—while the patient is still on the operating table. The system will use AI trained on thousands of clinical scans to generate high-resolution 3D maps of tumor surfaces, helping surgeons identify and remove any remaining cancerous tissue immediately.

Pascucci's team is developing the cyber-infrastructure backbone of the project, known as FASTMAP (Fast, Accelerated Support for Training MAchine Learning models on Petascale data). This part of the project is emblematic of the work at SCI: FASTMAP will enable rapid training and deployment of AI models on massive datasets, a critical component for ensuring the accuracy and speed of MAGIC-SCAN.

"FASTMAP is a human-centered approach that innovates responsible AI for cancer research," Pascucci said. "It will support continuous feedback and validation by clinical pathologists and deliver highly precise AI models that can guide surgeons in real time."

The project is part of a broader initiative by the Advanced Research Projects Agency for Health, or ARPA-H, to improve surgical precision and reduce errors. Clinical validation will be conducted with partners including Cedars-Sinai Medical Center and the Southeast Louisiana Veterans Hospital, while Tulane spinout Instapath Inc. will help develop FDA-compliant versions of the scanner.

"MAGIC-SCAN represents the highest calling of engineers and lies at the core of the U's mission. There's no better way to serve the people of Utah, the nation, and the world than to turn raw data into action that saves lives."

-Charles Musgrave, Dean of the Price College of Engineering

Original article from the John and Marcia Price College of Engineering.

New Faculty Member Karli Gillette Returns 'Home' to SCI to Develop Cardiac Digital Twins

After earning two of her three degrees at the University of Utah, native Salt Laker Karli Gillette returned in summer 2024 as an assistant professor in the Department of Biomedical Engineering (BME) and a member of SCI. Read how her personal experiences—including a mild heart condition diagnosis at age 16—led her to a career in computational cardiology and why, after eight years, she returned to SCI to make her mark in her field.

What's your primary research area?

Cardiac arrhythmias are a type of cardiovascular disease where the normal electrical rhythm of the heart is not functioning properly. One common example is ventricular tachycardia, which can occur when a heart attack leaves a survivor with an irregular rhythm—part of the heart muscle is no longer electrically viable. When treatments for this fail, it can be hard to understand why, and daunting to find treatments that do work.

We hope to improve this through personalized medicine using computer models—specifically, cardiac digital twins.

My research focuses on generating computer models of how the heart functions electrically to better understand cardiac arrhythmias, and then potentially using the models for personalized medicine in individual patients within the clinic.

Why did you become a professor and researcher?

When I was 16, I was diagnosed with a heart condition—a very mild one that is relatively benign. I wanted to understand it. Around that same time, an amazing math teacher suggested I study BME. As a freshman at the U, I joined an experimental cardiovascular research lab and learned I prefer computation over experimentation. In the next year, I added a math degree due to my love of mathematical modeling and signal processing.

During that time, I met with Professor and SCI co-founder Rob MacLeod, then a BME undergrad advisor. I told him I didn't know what I wanted to do after graduation—maybe live in a van and climb. He asked what I would have liked to do. I said, "Get a Ph.D., move abroad, and learn a second language. I'd prefer cardiovascular research." He invited me to work in his lab. After six months, I fell in love with computational cardiology. He gave me a list of Ph.D. programs across the world and told me this would align with my goals and put me on a path to a faculty position. So I earned a master's under him, then moved to Austria to work toward a Ph.D. under Gernot Plank, a professor at the Medical University of Graz. While there, I developed my current specialization. I love my research now. I still haven't lived in a van, but I think my 16-year-old self would be proud, and I at least somewhat understand my own heart condition.

What does being a part of SCI mean to you?

SCI is where I got my collaborative nature. To model a heart, I need to collaborate with radiologists, cardiologists, experimentalists, and imaging and machine-learning researchers. SCI is one of the only places I've seen that truly bridges all of these different research areas across a large campus. That's why I wanted to come back. SCI feels like home to me, and the perfect place where I can grow and support the next generation.

New Faculty Member Andrew McNutt Harnesses Vis Expertise to Make Computers Easier to Use

Using a computer is complicated. SCI faculty member Andrew McNutt wants to fix that. In one of his potentially most impactful projects, the assistant professor of computer science aims to automate visualization design decisions to help all kinds of analysts—from doctors to engineers—"quickly navigate millions of data-driven decisions in their daily work."

As McNutt rounds out his first year at the University of Utah, read about his research, why it matters, what brought him to SCI in summer 2024, and more.

What's your primary research area?

Doing things with computers is too complicated. It requires too much domain expertise. It forces all this unnecessary complexity into a bunch of ordinary tasks. And so my work is trying to undo that complexity and reduce the necessity of that domain expertise.

I take a few different approaches. One of them is having your computer give you assistance—e.g., telling you that you've done something wrong—like Clippy, but not a jerk. Another is changing the way you interact with computers. If we have better programming languages to do things, then that'll change the kinds of things that we're able to do. Lastly, I really like taking critical perspectives on things—so not changing your tools, but changing your mind.

Why is your research important?

Incidental complexity causes billions of dollars of mistakes every year. For instance, the Great Recession was made worse by a series of Excel errors. And the same things happen in visualization, but in smaller, everyday things—sometimes it's miscommunication, or self-deception, or actual deception. And we shouldn't have to deal with this level of complexity. Things are created and we know how to use them. Everyone should be able to use that knowledge. And so my work tries to democratize using that knowledge in a variety of ways.

What does being a part of SCI mean to you?

It means that I have great fortune. SCI is the best assemblage of visualization researchers in the world. It's another one of these things where I don't know what I've done to deserve it. But I'm really delighted and honored to get to be part of the wonderful tradition that is here—to do great work on visualization. There are so many great things that SCI and its members have done, and I'm looking forward to continuing that.

What do you like to do in your free time?

Like every single person in Salt Lake, I like to hike. I like to bike. I like to read. I recently finished House of Leaves. It's in the family of ergodic literature, where the physical form of the book is important. This one, you have to turn it upside down a bunch to be able to read it. It's real pretentious, but a real delight.

Three SCI Faculty Earn Top National Award for Early Career Scientists and Engineers

SCI faculty members Amirhossein (Amir) Arzani, Katherine (Kate) Isaacs, and Bei Wang Phillips in January 2025 received the Presidential Early Career Award for Scientists and Engineers (PECASE), the U.S. government's highest honor for outstanding scientists and engineers early in their careers.

Established by President Bill Clinton in 1996, the award recognizes scientists and engineers who show exceptional potential for leadership. To be eligible, faculty must first earn early-career funding from one of 14 participating federal agencies—Arzani is funded by the National Science Foundation (NSF) and Isaacs and Phillips by the Department of Energy (DOE). From that already-exclusive group, agencies then pick leading researchers to receive the PECASE.

"This prestigious honor recognizes Amir, Kate, and Bei as top early-career faculty in their fields," SCI Director Manish Parashar said. "They're advancing science and technology through their research. The SCI Institute is proud of their achievements and proud to support their innovative, impactful work."

These three PECASE honors are the first for SCI, though co-founder Chris Johnson in 1995 was among 30 researchers to receive an NSF Presidential Faculty Fellow award from President Clinton. That honor was a precursor to the PECASE. This year's PECASE cohort, awarded by President Joe Biden, totals nearly 400 researchers. View the full list.

Other 2025 PECASE winners from the U include Kahlert School of Computing associate professor Ryan Stutsman and Wilkes Center for Climate Science and Policy Director William Anderegg, who co-led the environmental working group for SCI's One-U Responsible Artificial Intelligence Initiative.

About the winners from the SCI Institute:

Amir Arzani is an associate professor of mechanical engineering. Through NSF funding, he explores scientific machine-learning approaches for modeling blood flow.

Kate Isaacs is an associate director at SCI and an associate professor in the Kahlert School of Computing. Through DOE funding, she creates interactive visualizations to improve supercomputer-scale science, increasing efficiency for super-computing researchers and users.

Bei Wang Phillips is an associate professor in the Kahlert School of Computing. Through DOE funding, she focuses on the analysis and visualization of large-scale scientific simulations. Her recent projects include tracking tropical cyclones and low-level cloud systems, as well as analyzing ensembles of flood-causing atmospheric rivers.

"This award is a truly once-in-a-lifetime honor and I am just incredibly grateful to be among the recipients. The award goes to all of my lab trainees over the past 7.5 years. Without them, I could not have gone this far."
                    -Amir Arzani

"I am so excited and honored to receive this award. It's been a great joy to work with such wonderful students and collaborators on this research in such a supportive environment created by my colleagues, my mentors, and my spouse."
                    -Kate Isaacs

"I am very grateful for my family, students, postdocs, and collaborators, without whom I would not have gotten this award. I am happy to continue doing what I love, which is research."
                    -Bei Wang Phillips

SCI Marks One of Its Biggest Presences at Top Conference on Human-Computer Interaction

SCI had one of its biggest years yet at the flagship conference for human-computer interaction, or CHI, held at the end of April 2025 in Yokohama, Japan. SCI contributions included four papers, one of which won an honorable mention award, along with a software course and a paper in "alt.chi," a forum for boundary-pushing research.

CHI brings together an interdisciplinary group of over 3,000 people who investigate and design new and creative ways for people to interact using technology. It serves as a hub for the latest research and products in interactive systems including social networking, wearable devices, smart homes, and more.

A CHI paper is an accomplishment in itself: this year's conference accepted only 25% of its 5,014 submissions. Andrew McNutt, a SCI faculty member and assistant professor in the Kahlert School of Computing, served as lead author on a paper that won an honorable mention—a top-5% honor.

Award Spotlight: "Slowness, Politics, and Joy: Values That Guide Technology Choices in Creative Coding Classrooms"

This paper, one of 201 to secure an honorable mention, builds on McNutt's previous research on creative coding—a cornerstone of computer science education that often involves using programming to make graphical art. In a 2023 CHI paper, McNutt analyzed student interactions with creative coding tools and identified ways to improve those tools. It left him wondering about the other side of the classroom: what creative coding tools do teachers choose and why?

McNutt and his co-authors interviewed 12 people who have built creative coding tools or used such tools to teach middle schoolers, graduate students, people with disabilities, and more. The team identified three themes that influence educators when they choose or build these tools:

- Slowness: whether a tool encourages students to "sweat the details to learn something," McNutt said.
- Politics: whether a tool is free or requires a paid subscription, for instance.
- Joy: whether a tool is fun—that is, it not only encourages play, but also builds community through elements such as welcoming documentation.

The paper encourages people, especially human-computer interaction researchers and professionals, to consider the broader implications of creative coding tools. "The decisions we make affect us as people, not merely as technologists," he said. "We should design and value technologies with that in mind."

SCI's Strong Showing at IEEE VIS Includes Top Awards and Organizers

Devin Lange Ph.D. '24 presents his award-winning paper during an Oct. 15 VIS hybrid event at the University of Utah Scientific Computing and Imaging Institute.

After back-to-back hurricanes forced IEEE VIS organizers to change Florida venues and ultimately abandon in-person conference plans, the event went virtual this week, with a strong presence from the University of Utah Scientific Computing and Imaging (SCI) Institute.

SCI faculty member and VIS General Chair Paul Rosen was gutted by the bad luck, but commended his VIS peers for their response—which included organizing in-person satellite events at the U and beyond. "We had to not just pivot, but double-pivot in two and a half weeks," Rosen said. "The community really came together and is making the best of the situation."

VIS, which dates to 1990, is the top forum for advances in visualization and visual analytics. In its 30-year history, SCI has been well-represented at the annual conference and has also hosted/chaired VIS in 2000, 2010, and 2020. According to Rosen, SCI's presence is especially prolific this year:

Awards

Best Paper
"Aardvark: Composite Visualizations of Trees, Time-Series, and Images"
Authors: SCI alum Devin Lange Ph.D. '24, Robert Judson-Torres, Thomas Zangle, and SCI faculty Alexander Lex

Three other best papers were from SCI alumni:
Alum and former faculty Miriah Meyer Ph.D. '08 and her Ph.D. student Derya Akbaba; Brian Summa Ph.D. '13; and Han-Wei Shen Ph.D. '98

Visualization Dissertation Award
SCI alum Lin Yan Ph.D. '22, advised by SCI faculty Bei Wang Phillips

Test of Time Award (10 Year)
"UpSet: Visualization of Intersecting Sets"
Authors: SCI faculty Alexander Lex, Nils Gehlenborg, Hendrik Strobelt, Romain Vuillemot, and Hanspeter Pfister

Best Poster Honorable Mention
"Visual Stenography: Feature Recreation and Preservation in Sketches of Line Charts"
Authors: SCI Ph.D. student Rifat Ara Proma, Michael Correll, Ghulam Jilani Quadri, and SCI faculty Paul Rosen

Visualization Technical Achievement Award
SCI alum Han-Wei Shen Ph.D. '98, now an Ohio State University professor, joins SCI faculty Charles Hansen and Valerio Pascucci and former faculty Claudio Silva in receiving this top visualization award

Papers and More
13 full papers, 3 short papers, 3 workshops, 9 workshop papers, 2 tutorials, 2 panels

Award Spotlight: Best Paper Award for a Newly Minted Ph.D.

Devin Lange and his team won a best paper award—a first for the 2024 Ph.D. graduate advised by SCI faculty member Alexander Lex. "It is an incredible honor," said Lange, now a postdoctoral research fellow in biomedical informatics at Harvard Medical School. "VIS has many amazing publications every year, and even having a paper published always feels like a great accomplishment."

The paper, "Aardvark: Composite Visualizations of Trees, Time-Series, and Images," is part of an ongoing collaboration between Lange, Lex, Huntsman Cancer Institute researcher Robert Judson-Torres, and U chemical engineering associate professor Thomas A. Zangle. "Aardvark" ranked among the top 1% of VIS papers: of 557 submissions, 124 were accepted and 5 were named best papers. The paper develops visualizations that combine three different forms of data—images, time-series, and trees—that describe how cancer cells grow in different ways. These visualizations can help cancer researchers understand their data and can help visualization researchers design better visualizations for complex data.

Celebrating 30 Years of SCI

Over 250 current and former students, faculty, and staff came together April 24–25, 2024, to celebrate three decades of multidisciplinary research, innovation, and impact at the University of Utah Scientific Computing and Imaging (SCI) Institute. The event showcased SCI's groundbreaking research over the years as well as its vision for the future. Read highlights below and visit sci.utah.edu/sci30 for more, including links to event recordings and a 138-page digital book on SCI's history, as compiled by the American West Center and J. Willard Marriott Library Special Collections Department.

A Fireside Chat on SCI's History and Legacy

SCI co-founder Rob MacLeod moderated a discussion on SCI's origins, challenges, and successes with founding director Chris Johnson, former university president Dave Pershing, and former associate director Greg Jones. During the wide-ranging chat, Johnson and MacLeod explained SCI's impact on their own careers, and MacLeod offered inspiring advice for young academics.

"What I found to be really rewarding overall was seeing the success of everybody here and beyond. Yesterday, when I was sitting at the reception desk welcoming people coming in, it was just so rewarding to see all of these people who had been through SCI talking about the great careers that they had, about their families, and everything they felt SCI had enabled. And I just felt wonderful about that. In my case, SCI increased dramatically my own impact in the world much more than if I had just been a single researcher with my own research group."

—Chris Johnson, SCI founding director and distinguished professor of computer science

Dave Pershing, Chris Johnson, Greg Jones, and Rob Macleod.

The Alum Who Named SCI

There'd be no SCI without alumnus Dave Weinstein (Ph.D. '02), who coined its name and created its first logo. "Everybody was super nice, super welcoming, and a little bit intimidating, because they were really smart," Weinstein said of joining Johnson and MacLeod's research group in 1994. "If they were willing to have me, I was happy to join the group. It wasn't clear what I could contribute yet—but the group needed a name, and I thought, 'I can do that.'"

Weinstein didn't only mastermind SCI's branding—he also helped SCI win and manage its first major grant from the National Institutes of Health. This funding ran for 23 years and supported the development of software that is still used all over the world. Weinstein also published prolifically, including on the inverse electroencephalogram (or EEG) problem, which involves mapping electrical recordings back into the head to visualize brain activity. After graduating and launching startups, Weinstein joined NVIDIA, where he now works as senior director of virtual reality and augmented reality.

Dave Weinstein

Weinstein credits SCI for some of the foundational knowledge he still uses today. "I wanted to thank Chris and Rob for starting all of this. It was an amazing home for me and for so many of my fellow students. So many great friends and colleagues came out of the SCI Institute."

"When I look back at my own career, I cannot help but be reminded of how much SCI has mattered… The setting at SCI and a few other places like it are very special, and there aren't many places like it where you get exposed to so many different smart people. And if you embrace that and internalize that, and make it your way, you'll improve your chances for the most important success of all, which is to be endlessly curious, endlessly finding the new spark, and you'll have a career that makes you happy. That's the most important goal."

—Rob MacLeod, SCI co-founder and professor of biomedical engineering

Will Schroeder, Pat Hanrahan, Manish Parashar

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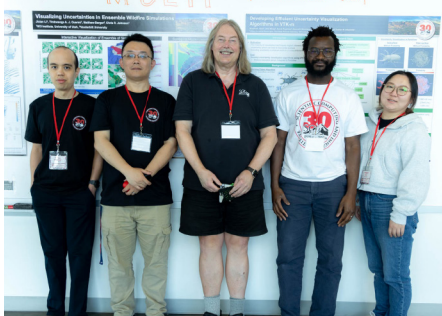
Nathan Marshak, Jixian Li, Chris Johnson, Timbwaoga A. J. Ouerm, and Mengjiao Han

Will Schroeder, Rob MacLeod, Dafang Wang, Karli Gillette, Guido Gerig, and Annette MacIntyre

Amy Gooch, Helen Hu, Dave Weinstein, and Kristi Potter

The Next Decade

In a panel discussion, young faculty members discussed their motivations for joining SCI and provided their insights on where the institute is headed. Associate professors Paul Rosen (moderator), Shireen Elhabian, and Kate Isaacs were joined by assistant professors Amir Arzani, Tamara Bidone, and Bao Wang.

Right: Bao Wang, Tamara Bidone, Amir Arzani, Shireen Elhabian, Kate Isaacs, and Paul Rosen

"I like the mission of leveraging computing to make a real difference, and under one roof, you have top leaders in different disciplines, working together, passionate to make a real difference… I'm proud to call it my professional home.

I'm working in AI and medical imaging, so I really want to contribute to establishing the full potential of AI in medicine and biomedical applications, and to really translate our research out of papers, out of our desktop applications to where it's actually being deployed.

I want to do this in a safe way, in a reliable way, in a way that doesn't replace medical professionals but augments their expertise, and makes their workflows more streamlined to maximize resource allocation and to make a difference in human health."

—*Shireen Elhabian, an associate professor who started at SCI as a postdoctoral researcher under Ross Whittaker and Guido Gerig*

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Akil Narayan Named College of Science Associate Dean

Narayan's College of Science faculty fellowship prepared him for his leadership role

The University of Utah College of Science named Akil Narayan—a mathematics professor and member of SCI—associate dean of undergraduate and graduate studies starting July 1, 2025. Two other new associate deans, Lauren Birgenheier and Matthew S. Sigman, will cover faculty affairs and research, respectively.

Last summer, Narayan was named one of two inaugural faculty fellows—a stepping stone to his new role. The fellowship, according to the college, develops "emerging academic leaders who are interested in learning more about college administration."

Narayan served as a fellow alongside Birgenheier, associate professor in the Department of Geology and Geophysics. "Lauren and Akil are exceptional scholars and leaders," said former college Dean Peter Trapa, now vice provost and senior dean of the Colleges and Schools of Liberal Arts and Sciences. "Their diverse expertise, coupled with their commitment to excellence, will be put to good use in these new Faculty Fellow roles. I look forward to working with them both."

As Narayan wrapped up one year as a fellow, we asked him to reflect on what it meant.

What was your reaction to earning this inaugural fellowship?
I felt honored to be chosen and was excited for the opportunity to become involved in College of Science affairs and events. It's a recognition of potential to serve in administrative roles at the university.

Why are you interested in college administration?
I feel that active and responsible stewardship of one's unit, college, and the greater university is a significant responsibility that all faculty carry. I also feel that one way to participate in this stewardship is to become involved in administrative affairs, helping to promote institutional growth that supports and uplifts students, staff, and faculty.

What has the fellowship entailed so far?
I've been responsible for portions of faculty affairs and research administration in my college. In faculty affairs, I've been involved in policy for faculty reviews, retention, and promotion. In research administration, I'm responsible for internal development of research initiatives and grant opportunities. I also support student-aimed events and college community building.

What have you gotten out of it?
I've learned an enormous amount. It's been an educational experience in how administrative logistics work at the university, it's been a tremendous opportunity for me to grow my administrative skill set, and I've benefited from supporting mentorship in the dean's office that has expanded my professional skill set. I've been very fortunate to enjoy the mentorship of former Dean Peter Trapa and now the guidance and support of interim Dean Pearl Sandick.

What do you hope to get out of it in the future?
I've very much enjoyed serving in this role, and it's given me an understanding of university-level organization and procedures. I hope to utilize this experience in further and future roles in administration.

The College of Science contributed to this article.

Jess Tate Named One of the U's First Innovation Ambassadors

The University of Utah Technology Licensing Office (TLO) in July 2024 tapped SCI staff scientist Jess Tate to serve as one of three Innovation Ambassadors, a new program to boost translational research and entrepreneurship across campus.

Innovation Ambassadors are liaisons between TLO and their departments. They are charged with the following responsibilities:

- Connecting researchers with intellectual property, innovation, commercialization, and entrepreneurship resources.
- Updating their departments on new programs, funding, and more out of TLO.
- Reporting quarterly innovation metrics to their departments.
- Making recommendations to the U to improve the culture of innovation.

"Drawing from the success of similar programs at other institutions, we recognize the importance of 'muscle memory' within departments for fostering innovation and managing it effectively," said Jonathan Tyler, TLO director of commercialization. "We eagerly anticipate the transformative impact our Innovation Ambassadors will have within their respective departments and, more broadly, on the expansive innovation ecosystem both on and off campus."

At SCI, Tate works to bring together research, technical tools, software deployment, distribution, and cyberinfrastructure in his roles as staff scientist, technical manager, and group leader of the Cyberinfrastructure Professionals Co-Op. His research interests include computational electrophysiology, statistical shape modeling, uncertainty quantification, machine learning, and developing software products and systems that support sustainable research communities. Tate received his B.S. and Ph.D. degrees in bioengineering from the U.

"I am pleased and honored to be a part of the inaugural group of Innovation Ambassadors, and I look forward to improving the impact of SCI research through licensing and commercialization opportunities. I hope to establish stronger and broader collaborations with industry partners and to widely demonstrate the high value of SCI's research products."

Original article from the Technology Licensing Office.

SCI Receives HPCwire Award for National Data Platform, an Effort to Democratize Responsible AI R&D

The SCI Institute was recognized in the 21st edition of the HPCwire Readers' and Editors' Choice Awards, presented at the November 2024 International Conference for High Performance Computing, Networking, Storage, and Analysis (SC24) in Atlanta, Georgia.

SCI and the San Diego Supercomputer Center (SDSC) won an Editors' Choice Award for the National Data Platform (NDP), which HPCwire called the "best use of high performance data analytics and artificial intelligence."

In 2023, following a $6 million grant from the National Science Foundation (NSF), SCI and SDSC launched NDP to create an equitable data ecosystem. The grant comes from a pilot program under NSF's National Artificial Intelligence Research Resource (NAIRR), "a concept for

a national infrastructure that connects U.S. researchers to computational, data, software, model and training resources they need to participate in AI research." Accordingly, NDP aims to enhance access to open data, fostering innovation and collaboration while addressing global challenges like climate change through AI-integrated solutions.

SCI Director Manish Parashar and Co–Principal Investigator Ivan Rodero were delighted by the award from HPCwire, a top news resource on high-performance and data-intensive computing. "This recognition underscores our commitment to advancing and democratizing responsible AI research and development," Parashar said.

So far, the NDP team has focused on designing and deploying a data ecosystem

architecture that is agile, scalable and sustainable. The team is integrating the platform with key NAIRR datasets and applications to demonstrate its value and build a user community.

Initial NDP uses have focused on addressing societally critical applications such as early earthquake warnings, wildfire monitoring and food sustainability. "In the short term, we aim to deepen these integrations and demonstrate clear value across diverse applications," Parashar said. "Long term, we aspire to establish NDP as a cornerstone for equitable and responsible data-driven innovation."

NDP is a testament to what can be achieved through collaborative innovation, Rodero added. "By addressing data accessibility challenges and fostering partnerships, we are paving the way for responsible AI solutions that tackle some of the world's most pressing issues," he said. "We look forward to continuing this journey and expanding the impact of NDP in the years ahead."

The coveted annual HPCwire awards are revealed each year to kick off the annual supercomputing conference, which showcases high performance computing, networking, storage, and data analysis.

"Throughout the world, we see grand challenge problems that can only be explored and solved because of HPC, now aided by AI," said Tom Tabor, CEO of Tabor Communications, publishers of HPCwire. "Rarely do these accomplishments come to light, much less are they recognized for their contribution to society. Between our worldwide readership of HPC experts and the most renowned panel of editors in the industry, the Readers' and Editors' Choice Awards represent resounding recognition of the many deep and varied HPC accomplishments throughout the world. Our sincerest gratitude and hearty congratulations go out to all of the winners."

From left, HPCwire CEO Tom Tabor with SCI Director Manish Parashar.

Jeffrey Weiss Part of $2.6 Million Grant to Study Biomechanics of Lung Tumors

Jeffrey Weiss, professor of biomedical engineering and SCI faculty member, and Michelle Mendoza, a researcher at Huntsman Cancer Institute and an associate professor of oncological sciences, in May 2024 were awarded a $2.6 million grant from the National Institutes of Health (NIH) to research how tension in lung tissue affects the growth and distribution of tumors. This innovative approach could uncover new mechanisms for understanding how lung cancer develops.

The study examines the role of mechanobiology—an emerging field that explores how cells respond to mechanical signals—in the progression of early benign lesions to lung adenocarcinoma. According to the American Cancer Society, adenocarcinoma is the most common subtype of non-small cell lung cancer.

The researchers simulated how the presence of a solid tumor fills and affects alveolar sacs, where lungs and blood exchange oxygen for carbon dioxide, using computational models developed in Weiss's lab.

They observed that the connective tissues making up the walls of the sacs are sensitive to strain—which may produce a cellular response that allows the tumor to grow.

"It's a new hypothesis about something that's contributing to the early tumor cells progressing to malignancy, which other people haven't looked at," Mendoza said. "And it would be a really interesting discovery if it's contributing to tumor development—because strain could be affected by things in our environment that cause lung damage or scarring."

Weiss has worked in biomechanics for decades, particularly in musculoskeletal science and cardiovascular mechanics. "It's gratifying for me that at this point in my career, I can still do different and new things that are interesting to me," Weiss said. "I'm pleased to see that the tools that I've developed over my career are useful in this context, as well."

The NIH grant allows Mendoza and Weiss to conduct their research experimentally by testing the effects directly in tissue and also develop more advanced computer models.

The $2.6 million grant will be distributed over five years. Mendoza and Weiss hope the study will lead to further explorations of mechanobiology, as well as the development of neoadjuvant therapies to reduce lung cancer mortality.

Original article from Huntsman Cancer Institute.
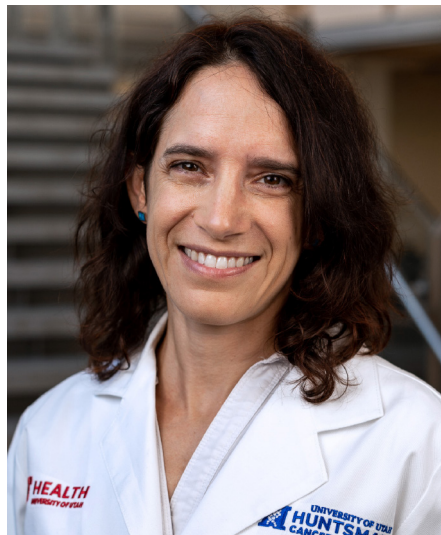
"There are a lot of people looking at the stiffness of breast tissue or other material properties and other types of cancers, but not so much in the lung. And it's interesting, because the lung is always undergoing stretch as we breathe in and out. There's not a lot of tissues that have that characteristic."

Michelle Mendoza, PhD

"It's gratifying for me that at this point in my career, I can still do different and new things that are interesting to me. I'm pleased to see that the tools that I've developed over my career are useful in this context, as well."

Jeffrey Weiss, PhD

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$2M NIH Grant Renewal Will Bring FEBio Open-Source Software into its 20th Year

Jeffrey Weiss, a professor of biomedical engineering and SCI faculty member, and Gerard Ateshian, professor of mechanical engineering at Columbia University, in September 2024 received a $2 million grant to continue to improve Finite Elements for Biomechanics (FEBio), open-source software supported by National Institutes of Health (NIH) since 2008.

Finite element (FE) analysis, a computer method for solving differential equations arising in engineering, has become an indispensable tool for research and discovery in the biomedical sciences. Historically, the lack of an open software environment tailored to the needs of biomechanics and biophysics hampered research progress, dissemination of research, and sharing of models and results.

In 2007, Weiss began a collaboration with Ateshian to develop FEBio. The software employs mixture theory to account for the multi-constituent nature of biological tissues and fluids, unifying the classical fields of irreversible thermodynamics, solid mechanics, fluid mechanics, mass transport, chemical reactions, and electrokinetics.

Weiss and Ateshian started the project to help colleagues and their students in the biomechanics and biophysics research communities. "I often wondered whether the substantial effort required by the project was worthwhile, given that it often pulled me away from other more research-oriented projects." Weiss said of FEBio's early days. "Today, I'm very happy that we persisted."

FEBio's impact has far surpassed expectations, according to Weiss. As of its NIH grant renewal, it had 20,000 registered users and 100,000 downloads and counting. More than 840 publications have referenced FEBio and its primary publication has been cited 1,200 times. Development of FEBio Studio, the graphical user interface, has enabled the software to become a popular educational tool—35 professors around the world use FEBio in their teaching, including four courses in the U's Department of Biomedical Engineering.

"I feel fortunate to have been able to dedicate part of my professional effort to this important project and I am deeply gratified to see the success it has enjoyed," Weiss said. "It is very satisfying to open a journal issue and see studies that relied on our software for the science, or to hear how an instructor uses the FEBio software in their classroom teaching. I hope we can continue to support the FEBio project for many more years."

Renewed by NIH for project years 17–20, the aims for the new funding period include developing a modeling framework for thermomechanics in solids, fluids, and mixtures, facilitating software development by the user community, and more.

The Department of Biomedical Engineering contributed to this article.

SCI's Tamara Bidone Helps Lead $8.5M Leducq Network for Vascular Breakthroughs

Tamara Bidone, a SCI faculty member and an assistant professor of biomedical engineering, is part of an international team of researchers awarded $8.5 million to develop treatments for peripheral artery disease (PAD)—a common and potentially fatal condition where not enough blood flows to the limbs.

The grant from the Leducq Foundation International Networks of Excellence Program will be distributed among 10 lead researchers over 5 years starting in January 2026. Leducq networks are made up of both established and early-career researchers, such as Bidone, with complementary expertise and resources to address common problems in cardiovascular disease and stroke. Funding for each researcher is subject to change from year to year, but Bidone estimates her team will receive about $500,000 total.

Her network's proposal, called Arteriogenesis in Translation (ARTIST), will combine several techniques from different labs to uncover how blood vessels grow in response to blood flow—and why this process fails in PAD. By targeting key signaling pathways and using AI tools to guide therapies, ARTIST aims to develop new treatments that safely and effectively restore blood flow in patients.

Bidone's team will use detailed computer simulations to study how certain proteins on the surface of blood vessel cells react when blood flow increases. These proteins help the cells sense the force of the flowing blood. By watching how the proteins change shape and move in response to this force, Bidone's work will help scientists design better experiments and, down the road, new treatments.

"The help I've received from the University of Utah—along with my ongoing National Institute of Health and National Science Foundation funding in adhesion biomechanics—has been instrumental in shaping my contribution to this proposal and the success of the award. I'm deeply grateful for that support," Bidone said.

In the award announcement, Leducq Foundation Council Director David Tancredi wrote that ARTIST was one of three proposals selected in an extremely competitive field this year—"an indication of the foundation's enthusiasm for your proposal, and confidence that the collaborative work of the network will significantly improve our knowledge and treatment of cardiovascular disease."

"I'm truly excited about the opportunity to collaborate with a team of experts in vasculogenesis from across continents. It has been inspiring to connect with diverse researchers, learn about their approaches, and understand how these methods link to therapeutic development. This award highlights how my work in modeling and protein simulations contributes within a broader context, where fundamental cell biology and translational clinical impact come together."

-Tamara Bidone

One-U Responsible AI Initiative at SCI

As it wraps up its second year, SCI's One-U Responsible Artificial Intelligence Initiative (One-U RAI) is helping to position the state as a leader in AI. Read highlights below and visit rai.utah.edu for the latest news.

RESEARCH HIGHLIGHTS

One-U RAI is funding researchers who are committed to improving lives and pioneering the frameworks to ensure AI is harnessed responsibly.

Amidst Declining Math Scores, AI-Powered App Co-Created by U Faculty Aims to Double Learning Rate

As the country continues to grapple with post-pandemic dips in children's math and reading scores, One-U RAI faculty fellow Chenglu Li and his collaborators are combating that trend with an AI-powered app that has already impacted thousands of students. The program, ALTER-Math, which stands for AI-augmented Learning by Teaching to Enhance and Renovate Math Learning, turns middle schoolers into teachers: students earn points as they help fictional peers solve real-world algebra problems and understand concepts.

Learning-by-teaching is an established framework in the learning sciences, shown to be effective primarily through studies in physical classrooms with human students. Accordingly, ALTER-Math runs on intentionally "weak" large language models, a type of AI where algorithms use text data to understand human language and generate appropriate responses.

"The models are not weak in performance, but designed to foster learning by prompting students to think critically," said Li, an educational psychology assistant professor. "The punchline here is: While AI has yet to become a reliable teacher, it is already an excellent student."

Since its October 2023 launch, ALTER-Math has been used by more than 50,000 middle school students, more than half of whom come from low-income backgrounds. Researchers have quizzed 6,000 of those students before and after they used ALTER-Math or the business-as-usual online learning platform Math Nation, which hosts ALTER-Math. Students who used ALTER-Math scored higher than those who didn't use it.

Specifically, accessing ALTER-Math tends to increase students' learning gains, defined as post-quiz score minus pre-quiz score, by 1.56 times, Li said. He and his collaborators will continue to refine the app until fall 2027, when the project concludes. The team hopes to show that ALTER-Math can double the rate of math learning.

AI-Powered Genomic Tools Drive Breakthroughs in Pediatric Diagnoses

A groundbreaking $9 million collaboration between University of Utah Health and Intermountain Primary Children's Hospital is set to transform pediatric genetic diagnostics across the Mountain West. Central to this initiative—dubbed Gene Kids—is the work of co-principal investigator Mark Yandell, professor of human genetics at the Spencer Fox Eccles School of Medicine and One-U RAI faculty fellow.

Yandell's team has helped to develop advanced AI tools that are key to scaling up genome analysis for children with suspected genetic conditions. One such tool compares a patient's genome against more than 7,000 known genetic diseases, generating a shortlist of plausible diagnoses for clinical review. "Every time you sequence a genome, there are millions of variants," Yandell said. "The question is, which of those changes might be responsible for a child's disease?"

By integrating clinical notes, genetic data, and vast biomedical literature, Yandell's algorithms enable rapid, targeted analysis that was previously impossible. This approach not only accelerates diagnoses but also ensures that families have lifelong access to their genomic data—allowing for future reanalysis as science advances.

"This is a whole new level of integrative medicine," Yandell said. "The citizens of the Mountain West are now going to have the most forward-looking genetic care in the world."

EVENTS & PARTNERSHIPS

One-U RAI is forging partnerships with academic, business, and governmental organizations across the state and beyond. In addition to its flagship Symposium held every fall, initiative leaders partnered with The Leonardo museum in downtown Salt Lake City to offer a fall 2024 three-part responsible AI speaker series on what the public should know about AI and how it may impact our future. In January 2025, the initiative also launched Utah's Responsible AI Community Consortium—an independent co-op led by volunteer members who want to ensure AI is developed and used responsibly to drive innovation and foster societal good. Read on for additional highlights.

Students Use AI to Solve Air Quality Challenges at Inaugural Hackathon Sponsored by AWS

For two days in summer 2025, conference rooms at SCI buzzed with discussions of data, algorithms, AI, atmospheric sciences, and public health and policy as dozens of hackathon participants built digital tools to address the poor air quality the Wasatch Front faces during inversions and wildfires.

The One-U RAI Breath of Fresh Air AI Hackathon took place on June 4–5 after a month of preparation that included 15

virtual training sessions or office hours. Sessions featured environmental science experts from the U, local companies, the Utah Department of Air Quality, computer scientists who run the National Data Platform, and most often, software and hackathon experts from flagship sponsor Amazon Web Services (AWS).

Penny Atkins, hackathon lead organizer and One-U RAI director of research and science, thanked everyone who made the event possible, from students to judges. "Our community partners that showed up—our subject matter experts and judges, some of whom even flew in from out of state—were key to the hackathon's success," Atkins said. "And I was so impressed with the students' creativity. They put together great projects in such a short amount of time."

The hackathon included 16 teams and 85 total participants. The first-place team, BreatheSafe, built a tool that predicts the air quality index (AQI) based on factors such as PM2.5 and ozone, and texts and emails users with an easy-to-read air risk score that takes their personal health into account. BreatheSafe stood out to judges for their use of traditional machine learning—a subfield of AI in which algorithms learn from data in order to perform new tasks—their clear, compelling presentation, and the functionality of their tool, which they designed in React for a clean, mobile-friendly experience.

Utah and NVIDIA Launch Statewide AI Initiative to Advance Workforce Training and Economic Growth

A public-private partnership between Utah and NVIDIA aims to equip universities, community colleges, and adult education programs across the state with the resources to develop students' and workers' skills in generative AI. Under the terms of the agreement, announced in March 2025, Utah teachers can earn a certification from the NVIDIA Deep Learning Institute University Ambassador Program.

The program offers high-quality teaching kits, extensive workshop content, and access to NVIDIA GPU-accelerated workstations in the cloud. In addition to AI, Utah teachers will be able to study accelerated computing, data science, and more—enriching their course curriculum and classroom discussions and giving students the skills they need to be prepared for the workplaces of the future.

The partnership will accelerate Utah's broader effort to foster a tech-savvy workforce and position the state as a leader in AI innovation and application. It also aligns with the Salt Lake Chamber of Commerce's Utah Rising economic development plan. The plan's six signature projects include advancing the University of Utah One-U Responsible AI Initiative.

"We believe that AI education is more than a pathway to innovation—it's a foundation for solving some of the world's most pressing challenges," said Manish Parashar, University of Utah chief AI officer and director of SCI, which leads the One-U Responsible AI Initiative. "By equipping students and researchers with the tools to explore, understand, and create with AI, we empower them to be able to drive advancements in medicine, engineering, and beyond."

NVIDIA representatives with Utah government and education officials. The group behind the partnership included SCI and One-U RAI Director Manish Parashar and NVIDIA's Greg Jones, a former associate director of SCI and a member of One-U RAI's External Advisory Committee.

News and Notes

SCI Mourns the Passing of Alumnus, Colleague, and Friend Steve Parker

Steve Parker—one of the inaugural graduate students who formed the SCI research group in 1994—passed away due to complications from brain cancer on May 2, 2024. Though he was unable to attend due to illness, Parker was awarded an honorary doctorate at the U's commencement ceremony earlier that day.

In 1994, Parker published his first paper on the SCIRun problem-solving environment, which continues to have scientific impact 30 years later. While writing his dissertation, Parker worked on a side research project on parallel ray tracing that would pave the way for a series of research innovations, the establishment of the Center for Interactive Ray-Tracing and Photo Realistic Visualization, and the startup company Ray Scale.

Parker defended his Ph.D. in 1999 and soon after became a SCI faculty member and an assistant professor of computer science. In 2008, he joined NVIDIA as the director for high-performance computing and computational graphics and in 2014 became vice president for professional graphics.

Parker was a profound innovator, a remarkable student, and a wonderful colleague and friend. He was one of the smartest, nicest, and kindest people anyone could know. We will miss him greatly and we offer our sincere condolences to his family and many friends.

Manish Parashar Wins ACM Distinguished Service Award

The Association for Computing Machinery (ACM) in May 2025 recognized SCI Director Manish Parashar with its Distinguished Service Award for service and leadership in furthering the transformative impact of computer and computational science on science and engineering.

Parashar's record of service includes leadership at the National Science Foundation (NSF), where he developed NSF's strategic vision for a national cyberinfrastructure, as well as at the White House's Office of Science and Technology Policy, where he developed the Future Advancement Computing Ecosystem Strategic Plan. For ACM, Parashar served two terms as editor-in-chief of ACM Transactions on Autonomous and Adaptive Systems, and has led steering, organizing and programming committees for numerous ACM conferences.

"I am delighted to receive this award and grateful for the recognition from ACM," Parashar said. "It has been an honor to serve the community, and I am grateful for the opportunities to do so."

The ACM Distinguished Service Award is presented annually on the basis of value and degree of services to the computing community. The contribution is not limited to service to ACM—it also includes activities in other computer organizations and emphasizes contributions to the computing community at large.

Parashar also won the Computing Research Association Distinguished Service Award last year for his "multifaceted and highly impactful service to the computing research community."

Manish Parashar Appointed Inaugural Chief AI Officer for the U

The University of Utah in February 2025 named SCI Director Manish Parashar as its inaugural Chief Artificial Intelligence Officer. In this role, Parashar represents the university and advises U President Taylor Randall on various AI initiatives. Parashar will lead the university's AI strategy, advance research and translation initiatives, foster collaborations across academic and industry sectors, and ensure ethical and responsible AI efforts in alignment with institutional missions.

"We are excited about the advancement of artificial intelligence initiatives at our institution, in the state of Utah and beyond," Randall said. "We are fortunate to have Dr. Parashar's expertise and talent leading out for the university, and I am confident that his service in this role will greatly enhance the U's standing as a hub for innovation and excellence."

Under Parashar's leadership, the U launched its Responsible AI Initiative (One-U RAI) in October 2023 with a $100 million investment and a goal to support AI research with real-world impact in three areas where the university has deep expertise: the environment, health care and wellness, and teaching and learning. Parashar has also received numerous research and leadership awards and held several federal appointments on computing and cyberinfrastructure.

Original article from the Office of the Vice President for Research.

Martin Berzins Appointed Department of Energy Committee Chair

SCI's Martin Berzins in May 2024 was appointed chair of the U.S. Department of Energy (DOE) Advanced Scientific Computing Advisory Committee. According to the DOE, the committee provides valuable, independent advice on a variety of complex scientific and technical issues related to its Advanced Scientific Computing Research program. Members include representatives of universities, national laboratories, and industries involved in advanced computing research.

Berzins, a professor in the Kahlert School of Computing, conducts research around developing algorithms and software to help solve challenging science and engineering problems on both serial and parallel computers.

Graduate and Alumni News

Ph.D. Grads

Jadie Adams, "Streamlining Statistical Shape Modeling: Safety, Feasibility, and Broader Applications." Adams accepted a job as a senior R&D scientist with Kitware Inc.

Haocheng Dai, "Advancing Biomedical Imaging Through Machine Learning: From Accuracy, Efficacy, Accessibility to Reliability." Dai accepted a job as an LLM applied scientist with Amazon.

Shikai Fang, "Bayesian Tensor Learning for Dynamic High-Order Data." Fang accepted a job as a senior researcher with Microsoft.

Mengjiao Han, "Improved Visualization and Interactivity for Flow Field Exploration and Rendering." Han accepted a job as a postdoctoral researcher at Los Alamos National Laboratory.

Fangfei Lan, "Ensemble Analysis and Uncertainty Visualization with Graphical Descriptors: From Theory to Application." Lan accepted a postdoctoral position at the University of Lausanne, Switzerland.

Devin Lange, "Is that Right? Data Visualizations for Scientific Quality Control." Lange accepted a postdoctoral research fellowship in biomedical informatics at Harvard Medical School.

Sam Leventhal, "Leveraging Topology to Advance Machine Learning Models and Methods." Leventhal continues to work with SCI's Valerio Pascucci on his ARPA-H grant and in June 2025 began a postdoctoral research fellowship at the University of San Francisco.

Zhimin Li, "Interactive Tracking, Visualizing, and Profiling of Data Corruption Propagation with Applications to Improve Interpretability of Neural Network Models and Reliability of Numerical Kernels." Li accepted a job as a postdoctoral researcher at Vanderbilt University.

Surojit Saha, "Deep Representation Learning for Statistical Analysis." Saha accepted a job as a data scientist with Microsoft.

Hong Xu, "Optimization-based Computational Methods and Machine Learning Approaches for Anatomical Modeling and Biological Imaging." Xu accepted a postdoctoral position at MD Anderson Cancer Center.

Zhichao Xu, "Using Language Models with Resource Constraints." Xu accepted a job as an applied scientist at Amazon Web Services.

Hunor Csala, "Exploiting Low-Dimensionality for Data-Driven Cardiovascular Flow Modeling." Csala accepted a job as a postdoc with Oak Ridge National Laboratory.

Xuan Huang, "Scalable Visualization Techniques for Large Scientific Data." Huang accepted a job as a graphics software engineer at Cesium, a company that provides an open platform for building and visualizing 3D geospatial applications.

Krithika Iyer, "Unsupervised Machine Learning Frameworks for Statistical Shape Modeling from Surfaces and Images." Iyer accepted a job as a postdoc at the Children's National Hospital in Washington, D.C.

Connor Scully-Allison, "Drawing in Cursive: Intentional Visualization Design for Computational Notebooks." Scully-Allison accepted a job as a postdoc at the University of Chicago.

Master's Grads

Jordan Allen, "Drug Screening Platform in the Light-Responsive Human Retina"

Abu Zahid Bin Aziz, "Training Methodologies for Image-to-Shape Deep Models"

Rachaell Nihalaani, "Uncertainty Estimation and Analysis in 3D Anatomy Segmentation"

Alumni Updates

Dafang Wang (Ph.D. '12, computer science) joined JPMorganChase in New York as a vice president of quantitative research in the company's equity and derivatives trading business.

Postdoc **Bo Zhang** started as a tenure-track assistant professor at Michigan Technological University in August 2025.

Research assistant **Marcus Adair** started as a junior software engineer at SafeStreets, a smart home/security company, in May 2025.

New Hires

SCI added several important team members in spring and summer 2025. We look forward to ongoing growth, including through the One-U Responsible AI Initiative cluster hires program, which will initially focus on recruiting groups of experts in three areas—AI-enabled resilience solutions for the environment, health data operationalization for AI research, and rethinking education for the AI revolution.

Center for High Performance Computing

Jean Leach, systems administrator at CHPC, works with the storage team and is primarily responsible for administrating data backups. Leach previously worked as an IT specialist supporting researchers in the U's pathology and biochemistry departments. In her free time, Leach enjoys reading fantasy novels and non-fiction, cooking meals for her friends, and visiting local parks.

Becky Ortinez is an IT project manager at CHPC, where she oversees complex IT initiatives that support secure and efficient research operations. With over 20 years of experience in project management and technology integration, she has led high-impact efforts at the University of Connecticut, Swire Coca-Cola, and Noorda College of Osteopathic Medicine. Her background blends higher education, healthcare, and industry, with a focus on aligning operations, compliance, and infrastructure. Ortinez holds an MBA in IT and marketing from UConn, along with additional certifications in project management and efficiency. Outside of work, she enjoys creating original artwork, keeping up with her favorite crime procedurals (currently Chicago P.D.), and discovering the best coffee spots wherever she goes.

Mike Ramshaw relocated to Utah in 2021 and in 2025 transferred to CHPC from the other side of campus, in Research Park. He previously earned an M.S. in computer science at Boise State University, where he was introduced to high-performance computing. He liked it so much that his advisor hired him as a scientific consultant supporting researchers in Boise. Now, he's happy to help researchers at the U work through the infinite number of issues that can happen with high-performance computing applications. Outside of work, he can be found hanging out with Robin Hood in England, hiking in Utah's beautiful scenery with his wife and dogs, or cheering on the Mammoth at the Delta Center.
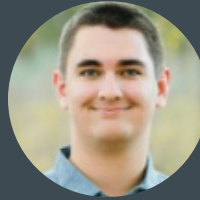
SCI Institute

Lucas Bigler was promoted to full-time systems administrator for SCI IT in May 2025. He previously worked as an intern in fall 2024 and was promoted to junior systems administrator in spring 2025. He graduated from Southern Utah University in 2025 with a bachelor of science in cybersecurity. A native of Murray, Utah, Bigler loves the outdoors, especially hiking, mountain biking, and nature photography. He also has SCI family ties: his father worked at the institute from 2000 to 2008.

Gianfranco Doretto began in August 2025 as a faculty member in SCI and the School of Medicine. His research interests focus on solving key technical challenges in AI, especially those affecting high-stakes areas like healthcare and biomedical applications. Doretto previously served as a professor of computer science and electrical engineering at West Virginia University. He holds a Ph.D. in computer science from UCLA. In his free time, he enjoys hiking and watching movies.

Rohan Basu Roy started in July 2025 as a SCI faculty member and an assistant professor of computer science. Roy's research focuses on systems-level challenges in large-scale and distributed computing environments, including enhancing the productivity, cost-effectiveness, and sustainability of these systems. He received his Ph.D. in computer engineering from Northeastern University. In his free time, Rohan likes to go to concerts and play heavy metal music.

Christopher Strong started in May 2025 as a SCI IT senior systems administrator. He completed bachelor's degrees in computer engineering and anthropology at the U, followed by a master's in electrical engineering. His career has primarily been split between Unix systems administration and hardware and firmware development in embedded systems and lab equipment. When Chris is not behind a keyboard, his interests include geology, anthropology, and collecting vintage arcade video games and Atari home computers.

Guang Tian started in July 2025 as a SCI faculty member and assistant professor in the City and Metropolitan Planning Department in the College of Architecture + Planning. His research interest areas include land use and transportation planning, travel behavior and the built environment, sustainability and climate, and urban data science and analytics (statistics, GIS, machine learning, AI, etc.). Guang has a Ph.D. in metropolitan planning, policy, and design from the U and previously worked as an associate professor of planning and urban studies at the University of New Orleans. In his free time, Guang likes playing sports (tennis, basketball, pickleball, etc.) and going outdoors (skiing, hiking, camping, etc.).

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