



-Bytes

THE SCHOOL OF INFORMATION NEWSLETTER



From the Director

For years I've been reading "Backpacker" and "Climbing Magazine." Lynn Hill, a famous rock climber says, "height has nothing to do with it, it is your strength that counts." Now, experiencing the challenges of the pandemic, I appreciate her words more than ever. As a new School making an international mark, our strength is what makes us distinct. As higher education is challenged worldwide, we have important work to do. We will be a University-wide catalyst, inspiring research that solves complex challenges. We will climb in rank and impact. We will train leaders and innovators with the transdisciplinary team-based skills and imagination to serve them throughout their lives. Together we will tackle and overcome society's grand challenges. Your dedication to the iSchool helps make our vision—a diverse, equitable, and inclusive future, empowering everyone through information—possible

Be well and thank you,

- Catherine Brooks

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-School Snapshot 2019 - 2020

Arizona's first and only iSchool

- 2019** Best Online Master's in Library Science Programs.
- TOP 10** Library & Information Science Academic Subjects according to Shanghai's Global Ranking of 2019
- TOP 25** Library & InfoScience Programs - U.S. World & News Report

\$22M

in externally funded research projects

8 PROGRAMS

5 UNDERGRAD programs

- B.S. Information, Science and Technology (258 majors)
- B.A. Information, Science, Technology & Arts (53 majors)
- B.A. Information Science & eSociety (362 majors)
- B.S. Game Design and Development (coming Fall 2020)
- B.A. Games and Behavior (coming fall 2020)

18 CORE FACULTY

40 AFFILIATED OR ADJUNCT FACULTY

10 Administrative and Advising Staff

1093 MAJORS

8% Foreign students

16 Countries

Graduates Academic Year 2019

117 Undergrad

80 Graduate

2 MASTER'S program

- M.S Information (22 majors)
- M.A. Information & Library Science (213 majors)

1 PHD program

- Ph.D. Information (16 majors)

6 Graduate Certificates

2 Undergraduate Certificates

+200 Courses

2020 Accreditation status for our Master of Arts in Library and Information Science Degree

We'd like to extend special thanks to our donors for your support! Without you, this wouldn't be possible!

Please Support the iSchool, and Thank You!

YES, I support the School of Information (the only iSchool in the U.S. Southwest region)

Go to: <https://ischool.arizona.edu/donate>

If you wish to contribute to the School via paper, please fill out the information below and mail to:

School of information, Harvill Building Room 409, University of Arizona, 1103 E 2nd St, Tucson, AZ 85721

Please designate my gift for use in the iSchool's general fund (supports faculty, staff, and students): ____yes ____no

Please make checks payable to the School of Information/UA Foundation

or

I prefer to make this gift anonymously: ____yes ____no

Please use my funds for this specific purpose: _____

This gift if from and/or made in the name of: _____



News on Knowledge River

Knowledge River (KR) specializes in educating information professionals who are committed to the information needs of Latino and Native American populations. Over 225 KR alum have graduated since 2001. Five KRers will graduate in Spring 2020 and 13 KRers will continue their studies towards an MA in Library and Information Science. This fall the iSchool will welcome the 19th KR cohort.



KRs have a profound impact as information professionals across the US and internationally. KR alumni apply their unique theoretical and practical education to engage with and enhance their institutional, civic, and cultural communities. In its 18-year history, KR has received state and national recognition as a leader and change agent including awards from American

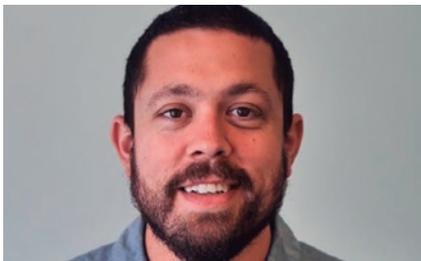
Library Association (ALA) and Arizona Library Association (AzLA), and has delivered invited testimony about KR before the U.S. House Subcommittee on Healthy Families and Communities. The KR experience brings iSchool graduate students together as an inclusive, involved, and passionate cohort of scholars seeking to improve information environments for future librarians and patrons through diversity and inclusion.

KR Scholars are encouraged to continue the tradition of leadership that has been exemplified by previous KR Scholars through valuable work experience, community outreach, and mentorship. ■

About Knowledge River:
<https://ischool.arizona.edu/knowledge-river>
Support the KR program here:
<http://bit.ly/supportKR>

Enhancing interdisciplinary work with more departments. Our students are loving this!

Over the last year the School of Information has partnered with the College of Engineering to form a joint capstone project. This is a fantastic opportunity for students to get a flavor of the real world professional dynamics. As pointed out by Dr. Brooks, "working in interdisciplinary teams and bringing different skill sets to a group to solve a real problem that comes from industry partners" is definitively a win-win experience for students.

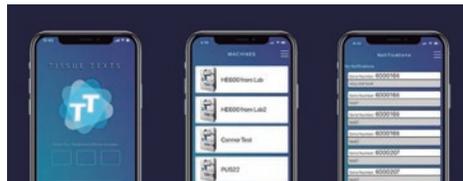


The College of Engineering has a full year capstone project where students work on industry sponsored projects in collaboration with companies such as Northrop Grumman, Caterpillar, Honeywell Aerospace, Roche, and Intel, among others. As these projects were becoming more and more software oriented they chose to create a joint venture with our



ISTA students, who have a great mix of applied software engineering and data skills. Currently our students can participate for a semester or the whole year for independent study and/or senior capstone credits.

A lot of work went into smoothing out the de-



tails, but so far it's been a complete success! Our students get a chance to work with a diverse engineering team on a real-world project. They develop a host of critical skills beyond coding, such as Agile development, technical writing, and how to work in a distributed team. They've universally reported great experiences and that they would recommend every ISTA student participate. Feedback from the Engineering Capstone leaders has indicated that our students have often been absolutely instrumental in getting projects completed.", stated Dr. Nicholas DiRienzo, the iSchool coordinator for the Capstone Project.

In fact, in completing this project some students reported that they "learned how to be part of an actual engineering project and work with a whole team to make a product." Some others described the project as "a massive resume builder." ■



At iSchool, we are glad that our students had such a great time while receiving an industry perspective for their future career path!

Master of Arts in Library and Information Science Program Accreditation



We are pleased to announce we have once again received our accreditation from the American Library Association (ALA) as of January 2020! For the last two years, faculty and staff committee members worked diligently gathering data and putting together a lengthy self-study that included what has transpired in the department since our last accreditation, which occurred in 2012. This accreditation was particularly challenging due to the merger of two departments in 2015, part-way through our accreditation period. Our committee was able to rise above the challenge and provide our ALA review committee with an outstanding document as well as a welcome reception for our visitors and two days of successful meetings with other university departments. ■

Technology for Public Good

The University of Arizona recently joined the prestigious "Public Interest Technology University Network" aimed at using technological knowledge to enhance the public good. For Dr. Brooks, the University designee for the network, "our PIT-UN membership will provide additional momentum for the University of Arizona to embrace our strategic plan in new ways, harnessing the power of new opportunities such as artificial intelligence, machine learning, quantum communications, and mixed-reality tools, while always remaining focused on public interests". ■

Congratulations to the new cohort for 2020

Congratulations on your achievements, we are very happy for you! We would like to recognize your accomplishments

Congratulations to the iSchool Director's List of Distinguished Undergraduate Scholars!

Kylie Jordan Abler	Ciara Dominica Daley	Skylar Elizabeth Oesterreicher
Lauren Ackermann	Yasmine Sakurako Dana	Sophia Michele Orlando
David Alon Aires	Alexandra Lynn Davies	Miranda Alexandra Padilla
Cassidy Summer Anderson	Devon Beth DeCaire	Matthew Patterson Palmieri
Kirsten Annmarie Atkinson	Anthony Dominguez	Anthony Paul Pietrofeso
Jennifer Marie Bare	Devyn Sahara Edelstein	Olivia Nicole Principe
Malia Nicole Beckner	Bradey Garrison Foster	Samantha Lee Robbins
Galen Belle Bowman	Katie Rose Gitre	Gustavo Guadalupe Rodriguez
Katelyn Rose Carlson	Jianbo Gong	Riley Jo Smigiel
Alan Octavio Castillo	Brandon Joseph Griffing	Francis John Spicciatie
Shivansh Singh Chauhan	Gwendalyn Fae Hopper	Kyle Michael Strokes
Madison Rose Cohen	Danielle Elana Jackel	Sierra Alicia Sutton
Sophia Lain Cornwell	Carina Natalie Mangiacotti	Ding Tao
Aleah Maryanne Crawford	Allison Jade McNally	Madison Lea Tempest
Sean Current	Yihan Mo	Kristin Maria Wolek
		Xiaoyu Zhao



THE UNIVERSITY OF ARIZONA
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES
School of Information



With special mention to our Director's Lists of Distinguished Graduate Scholars

Congratulations to the iSchool Director's List of Distinguished Scholars!

Christina Elizabeth Blood	Elizabeth Katherine Leafgren
Felicia Fiedler	Fatma Yousef Massoud
Colleen Ann Fincke	Natasha Mickelson
Joshua Garver	Samantha Montes
Sydney Marina Gay	Carla Raeann Nordlund
Sarah Elizabeth Jardini	Sarah Ann O'Hare
Patricia Marie Jimenez	Travis Prillaman
Ricardo E. Johnson	Amanda Steinvall
Ashley V. Kelton	Ivy Stover
Klaudia Wynne Kendall	Nicholas Franklin Ziolkowski
Moonsung Kim	



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i-School faculty members are committed to tackling scarcity challenges brought on by COVID-19

Two of our faculty members, Dr. Winslow Burleson and Dr. Peter Jansen, have joined the new research group for COVID-19 related projects at the University of Arizona. It's a group of over 100+ faculty members across multiple disciplines that are contributing innovative solutions to the battle against COVID-19.

Recently in the news we have heard a lot about the increased need for ventilators to treat patients who have been severely affected by COVID-19. Moved by the forecast and figures of the pandemic all over the world, our Associate Director, Dr. Burleson, who is also an inventor inspired by social issues, dove into the task of understanding the peculiarities of these devices and how commonly used items could be adopted to build ventilators. Over the past few months, he has been studying ventilators and collaborating with Dr. Marvin Slepian, Director of the Arizona Center for Accelerated Biomedical Innovation, to design three prototype of ventilators made from readily available items. From basketballs to 3D-printed pistons, water bottles, drills, and foot pumps, they have prototyped devices that can be built for less than \$300 and combat the specific health complications often presented in COVID-19 patients.



Dr. Winslow Burleson



Dr. Peter Jansen (right)

Encouraged by some circumstances but from a different perspective, Assistant Professor Dr. Jansen used his prototyping skills to design and manufacture face shields to reinforce the protective equipment used by healthcare professionals. "I saw 3D printed face shields in the news, and it made me angry because it takes about four hours to print just one shield. You would need thousands of printers running 24/7 for weeks to meet the needs of Pima County," Jansen said. "But a laser cutter can cut plastic like butter in seconds. I wanted to come up with a laser-cut design rather than printed." These plastic shields filter around 95% of airborne particles from sick patients and prevents medical staff from unconsciously touching their faces.

This wonderful invention has received the attention of professionals from various areas which has allowed Dr. Jansen to improve his initial prototype. The current version of these face shields is made entirely out of 0.5mm PETG sheet, each one costs approximately one dollar, and only takes about 80 seconds to manufacture. ■

For more information including the design files and the assembly video, visit: <https://hackaday.io/project/170542-face-shield-laser-cuttable/#j-discussions-title>

Thank you both for your important contributions, we're proud of your tireless work spirit!

We are thrilled to welcome three new members to the iSchool family



Dr. Meaghan Wetherell is joining us in the Fall as a Data Science Career Track (CT) Assistant Professor. Meaghan is a palaeontologist who uses shape and spatial data to answer questions about extinction and evolution over the last 65 million years. She studies slugs, long-dead vertebrates, old dirt, extinctions, and gender equity (particularly in STEM fields). As a long time data scientist, Meaghan has developed powerful skills on programming languages such as Python and R, statistical analysis, data visualization and science communication. She has worked as a writer, editor and host for PBS and National Geographic. As an educator, Meaghan is passionate about presenting those "scary concepts" in friendly ways, allowing students to easily engage in data science routines. Her hobbies include rock climbing, googling pictures of miniature cows, taking photos of strange objects balanced on her dogs' heads, and writing science fiction and fantasy.

Dr. Adriana Picoral is joining us as an Assistant Professor, CT. Adriana is a data scientist with extensive experience in collecting, processing, maintaining, and analyzing language data, both in academic settings and in industry. She is committed to increasing access to data science education, and expanding equity and inclusion in the field of data science. At the University of Arizona, she has built corpora for research and teaching purposes, including a language learner corpus called MACAWS (Multilingual Academic Corpus of Assignments, Writing & Speech). She is also the founder of R-Ladies Tucson, which is part of a world-wide organization to promote gender diversity in the R community.



Dr. Zack Lischer-Katz is joining us as an Assistant Professor. Zack is a multidisciplinary researcher who studies the curation and preservation of visual information formats, such as virtual reality, 3D, video, and film. He is currently researching curation tools for 3D data and investigating the accessibility challenges of virtual reality technologies in academic libraries. ■

Dr. Laura Lenhart
- the recipient of
the first School of
Information Teaching
Excellence Award



The iSchool Teaching Excellence Award seeks to recognize those Professors that foster students' curiosity while encouraging academic excellence. Courses taught by Dr. Lenhart include: Ethics for Information Professionals, Introduction to Digital Cultures, Digital Engagement, and Social Media and Ourselves. Her students described her as a passionate teacher who help them to build a skillset necessary to thrive in diverse academic and personal situations. ■

ToMCAT: AI that understands social cues

iSchool Post-Doc Adarsh Pyarelal is the Principal investigator for the "Theory of Mind-Based Cognitive Architecture for Teams (ToMCAT)", the largest AI project by the University of Arizona. This ambitious project was awarded a 4-year, \$7.5M grant from the Defense Advanced Research Project Agency (DARPA), under its Artificial Social Intelligence for Successful Teams program that seeks to build AI systems equipped with social skills and the ability to participate in an effective team.

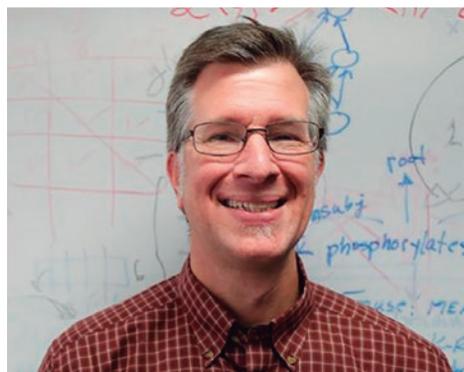
ToMCAT is aimed at comprehending social signals, inferring the internal states of other agents solving problems collaboratively, and use that information to help teams achieve their goals. This implies developing Artificial Intelligent (AI) systems with an embedded "theory of mind" able to "predict what their teammates are going to do with some level of certainty," Pyarelal said. "We're trying to build AI with some social awareness and this kind of theory of mind."



Advancing the state of the art in AI to make a computer understand the content of human dialogues is not an easy thing, but Adarsh is working on bringing together complementary strengths from 4 labs and 20 researchers across campus.

One of the co-principal investigators for ToMCAT is iSchool Associate Professor Dr. Clayton Morrison, who directs the Machine Learning for Artificial Intelligence lab. Dr. Morrison is working at the intersection of Machine learning and AI methods to make sense of what people are doing. "We learn how to get along with each other and collaborate. A key part of that is the ability to, in a sense, read the minds of other people". Morrison said. ■

For more information on ToMCAT, visit: <https://ml4ai.github.io/tomcat/>



A selection of Recent Faculty Research

Bozgeyikli, L. and Bozgeyikli, R., (Editors) (2020). Virtual reality: recent advancements applications and challenges. River Publishers Series in Automation, Control, and Robotics

Brooks, C. F. and Sidi, D., (2020). Fake video and emerging detection techniques. Presented at the annual Hawaii International Conference on System Sciences (HICSS), as part of a symposium of research papers entitled, Credibility Assessment and Screening Technologies, January 7-10, Maui, HI.

Burleson, W., (2020) Tracheostomy Positioning Device, AZ Tech Launch IP Disclosure #UA20-193.

Burleson, W., (2020) Pneumatic Ventilator System, AZ Tech Launch IP Disclosure # UA20-194.

Daly, D. and Brooks, C., (2019) Frames and community in Arizona's All Souls Procession, Text and Performance Quarterly, 39:4, 322-340, DOI: 10.1080/10462937.2019.1670858

Frické M., "Popularity of entries in ISKO Encyclopedia of Knowledge Organization" Knowl. Org. 47(2020) No.1 pp.92-93)

Knott, C., "One Collection, Two Contexts: The Ella Reid Public Library Archives," Revue Française d'Etudes Américaines (2020/1, No. 162): 51-66.

Salas, L. P., "Analysis of YouTube's Content ID System Through Two Different Perspectives." International Conference on Information. Springer, Cham, 2020.

Slepian, M., Ida, A., Burleson, W., Engineer, A. (2020) Systems, Methods, Structures and Designs for Separation of Individuals from an Environment. AZ Tech Launch IP Disclosure # UA20-197.

Vikas, Y., Bethard, S., and Surdeanu, M. Unsupervised Alignment-based Iterative Evidence Retrieval for Multi-hop Question Answering. Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020).

Xu, D., Jansen, P., Martin, J., Xie, Z., Yadav, V., Madabushi, H. T., ... & Clark, P., (2019). Multi-class Hierarchical Question Classification for Multiple Choice Science Exams. arXiv preprint arXiv:1908.05441.

Xu D., Zhang Z., and Bethard, S., (2020). A Generate-and-Rank Framework with Semantic Type Regularization for Biomedical Concept Normalization. Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020)

Yates, S., Ling, R., Robinson, L., Brooks, C., Joinson, A., Whitty, M., and Carmi, E., (2020, summer, in press). Chapter 8: Communication and relationships. In S. Yates and R. E. Rice (Eds.), The Oxford Handbook of Digital Technology and Society. New York, NY: Oxford University Press.

Zhao, Y., and Bethard, S. How does BERT's attention change when you fine-tune? An analysis methodology and a case study in negation scope. Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020).

How is the COVID-19 emergency eroding privacy?

David Sidi, a doctoral candidate whose research focuses on Privacy Technologies, expressed his concerns and analyzed the eventual consequences that this situation brings for the future of privacy and surveillance.



Q: What is your broad perspective on how privacy should be considered during the current COVID-19 crisis?

David: This is an important time: the decisions made now will affect us for years into the future, far beyond the reach of the current crisis. Privacy will be a central part of the long-term legacy of COVID-19, so we should think carefully about the technologies and policies that are being proposed. We should learn from past experiences such as the “USA Patriot Act”, that even extreme changes in surveillance powers are unlikely to bear temporary as they are promised to be.

Q: What do you think about recent proposals for contact tracing apps to mitigate the spread of COVID-19?

David: Contact tracing apps use the sensors in people’s phones to record when they are close to other people, and then combine

this information with records of who has tested positive for COVID-19. This is an example of treating a problem arising in a complicated context as if it were a technical problem we could just nerd our way out of—but even the nerd merits of this are bad. For example, the sensors in the apps I’ve seen are Bluetooth Low-Energy (BLE), or BLE combined with GPS, which are accurate to about one meter, and which detect close contact even when a wall or a car door separates the phones. There is also the issue of intentional abuse: given that the data is to be collected anonymously, anyone with an interest in influencing a population’s response to the crisis could do so via the app.

In addition to the technical problems with these apps, there are broader policy issues. How will you ensure people use the app? Will they be forced? Will installing them be a condition of employment, placing more pressure on people with less money? How will you prevent handle claims of inaccuracy, or abuse? Who will store the data, in which countries, and for how long? What will be the legal standard for law enforcement access to the data? There are many difficult questions

that arise even after we are able to address the technical problem of getting a contact tracing app to work.

Q: What other problems do you see arising from the current self-isolation orders in the US?

David: I’ll limit myself to one problem that has received only scant attention, which is the connection between self-isolation orders and the principle of isolation used in computer privacy and security. A good example of isolation in the second sense is found in SecureDrop, which is an anonymous, secure system for sharing files. Reuters, ProPublica, The New York Times, The Guardian, among others, use SecureDrop for tip submission. One aspect of SecureDrop is the secure viewing station, which allows the recipient to view submitted files. The secure viewing station is an isolated, “air-gapped” machine: it is not connected to any network, so it must be used by a person who is physically present. Self-isolation prevents journalists and others using SecureDrop from viewing submissions on the secure viewing station, so they may be unable to accept submissions. One proposal to address this problem is to connect the secure viewing station to a network for remote access. That is difficult to do right, and even in the best circumstances it would be less secure than an air-gapped machine. Considering that some of these systems are targeted by state actors with vast resources, this is an underappreciated worry. ■

David Sidi recently won a grant from SBSRI for hardware supplies to be used in a study of notification and perceptually-capable video systems. David was motivated to do the study when thinking through the significance of a new, competitive market for cloud providers of sophisticated computer vision as a service. He thinks perceptual-capability will become widely adopted in video, outpacing expectations developed when video systems demanded manual review of recordings, and rolling erasure. “The study lets us explore the effect of different kinds of precise notification in making privacy salient when “smart” video is present. The batteries power transmitters that are part of a real time locating system used, allow us to very precisely track location in indoor areas where special receivers are installed.”

Congratulations David!

Lauren Haberstock, December 2019 MA LIS Graduate, is now serving as the Drescher Graduate Campus Librarian at Pepperdine University

Please join the iSchool in congratulating Lauren Haberstock, December 2019 MA LIS Graduate, who is now serving as the Drescher Graduate Campus Librarian at Pepperdine University where she leads a small library that serves three graduate schools – the Graziadio Business School, the School of Public Policy, and the Graduate School of Education and Psychology. Her role includes serving as liaison to the graduate schools, collection management and development, faculty and student research support, reference and instruction, and overseeing the daily operations of the graduate library. ■



MLIS Alumna, Erin Roper gets recognized as a 2020 ALA Emerging Leader

Erin Roper is a librarian at the Mohave Community College in Kingman, Arizona and her work was featured by the American Library Association (ALA) selecting her to be part of the 2020 class of Emerging Leaders (EL). For Erin, being part of the 2020 EL class, "It's a great opportunity to work with other people and learn about library advocacy on the national level because there's a myth that libraries are going extinct or that they are not going to exist in a couple of years. I am confident that libraries will exist but that they will change." ■



Allison McNally, iSchool's outstanding Senior

Allison McNally is a Tucson native and first generation college student who recently graduated Magna Cum Laude from the University of Arizona Honors College, College of Social and Behavioral Sciences, and Eller College of Management with degrees in Information Science and eSociety and Business Management. As a three-year peer mentor, Allison looks forward to pursuing a career in student affairs to continue working with undergraduate students as a success counselor, academic advisor, or other student services associate, helping undergrads set and reach their goals. Bear Down! ■



We'd love to hear from you!

Follow the School of Information on our LinkedIn Page:
<https://www.linkedin.com/in/uofa-ischool/>

Alumni and Current Students are invited to join our LinkedIn Alumni Group:
<https://www.linkedin.com/groups/13807706/>