SIGNIFICANT BITS

Fall 2017 / Newsletter of the College of Information and Computer Sciences

UMass Amherst
College *of* Information and Computer Sciences

Introducing Dean Laura Haas

CICS's new dean on community, teaching, and preparing for the next decade of rapid growth. / pg. 7

IN THIS ISSUE

LETTER FROM THE DEAN

SIGNIFICANTBITS
Fall 2017

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Email your news, suggestions, comments, and contributions to **bits@cics.umass.edu**.

cics.umass.edu

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Laura Haas, Dean

I joined the College of Information and Computer Sciences on August 1st and have spent the last two months getting to know the campus and the college's faculty, staff, and students. With my first semester in academia racing by, I've been energized by having our students in the CS Building and I'm excited as I consider their future and the future of our college.

Even now, in my first months on the job, it is clear to me that CICS is thriving. One need only look at the news highlighted in this issue to see that! Our faculty are receiving funding for interdisciplinary and impactful research (see Dan Sheldon, pg. 15), professors at all stages of their careers are being recognized for pioneering work (see Phillipa Gill, pg. 5, and Andy Barto, pg. 17), and our alumni are blazing trails in industry and research (see Ann Wong '12, pg. 23).

> *"Even now, in my first months on the job, it is clear to me that CICS is thriving."*

I am pleased and proud to build on the hard work and dedication of the CICS community and the leadership of Dean Bruce Croft. In the two years since the college's inception, Bruce has built out the college's infrastructure — named associate deans, hired college-level staff, stabilized the budget — and steered faculty and staff through the changes that come with being a new college. Among other accomplishments, he oversaw the rapid growth of the Master's program, the addition of two Master's concentrations and graduate certificate programs in data science and security, and all-but-finalized plans for our undergraduate informatics program.

Please join me in thanking Bruce for his service and wishing him well as he returns to his research in the Center for Intelligent Information Retrieval which, by the way, is celebrating its 25th anniversary this year.

I enjoyed meeting alumni at our annual New England gathering in October and hope to meet more at our Outstanding Achievement and Advocacy awards banquet on April 27, 2018. We'll also be holding alumni meet-ups in Silicon Valley and Seattle in 2018 — stay tuned for dates.

In the meantime, if you have any questions, suggestions, or advice for a new dean, please email me at **dean@cics.umass.edu**. With the engagement and support of our alumni, corporate partners, and friends, we can build on the amazing tradition of computer science research and teaching excellence at UMass Amherst.

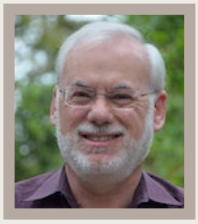
Sincerely,

Laura Haas, *Dean*

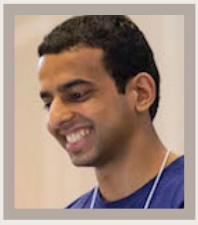
SEVEN NEW FACULTY JOIN CICS

CICS has hired seven new tenure-track and teaching faculty, amplifying its data science and mobile health research areas, and adding teaching capacity to address rapid increases in undergraduate and graduate enrollment.

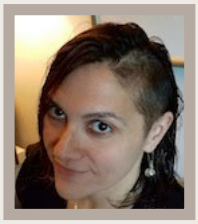
"The addition of these seven faculty, after hiring six new faculty in 2016-2017, further cements CICS and UMass Amherst as research destinations of choice. We are thrilled to welcome these outstanding researchers and educators," said James Allan, chair of the faculty.



Peter Haas, *Professor*
Peter Haas' research interests are in information management, stochastic modeling and simulation, and the mining, analytics, and exploration of massive data. He comes to CICS after 30 years at IBM Research - Almaden where he was most recently a principal research staff member. Among other accolades and awards, Haas is a fellow of both ACM and INFORMS, and was named an IBM master inventor in 2012. For the past 20 years, he has also been a consulting professor at Stanford University. He received his Ph.D. in operations research from Stanford in 1986.

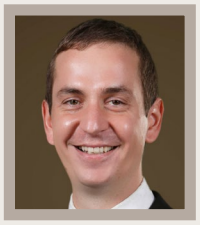


Mohit Iyyer, *Assistant Professor*
Mohit Iyyer's main research interest is in designing deep neural networks for traditional natural language processing tasks and new problems that involve understanding creative language. He received his Ph.D. in computer science from University of Maryland College Park in 2017 where he was a member of the Computational Linguistics and Information Processing Lab. Iyyer is currently a young investigator at the Allen Institute for Artificial Intelligence and will join CICS in September 2018.

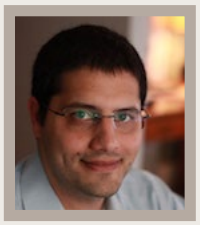


Anna Rita Napoleone, *Teaching Faculty*
Anna Rita Napoleone will be teaching the undergraduate junior year writing course for computer science students. Her research focuses on classed literacy practices in higher education. She has published in the Pedagogy journal, and has contributed to edited collections such as Examining Education, Media, and Dialogue under Occupation, and Out in the Center (forthcoming). Napoleone has a Ph.D. in rhetoric and composition from the University of Massachusetts Amherst.

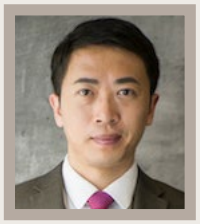
Tauhidur Rahman, *Assistant Professor*
Tauhidur Rahman's research focuses on developing mobile and ubiquitous computing technologies for human health and behavior sensing. He completed his Ph.D. in information science at Cornell University in 2017 where he was a member of the People-Aware Computing Lab. He received a 2016 Google Ph.D. fellowship in mobile computing, and best paper and honorable mention awards in ACM Digital Health 2016 and Ubicomp 2015. He will join CICS in January 2018 and will also be affiliated with UMass Amherst's Institute for Applied Life Sciences (IALS).



Marco Serafini, *Assistant Professor*
Marco Serafini's research lies at the intersection of database systems, distributed systems, and data science. Set to join the CICS faculty in January 2018, he is currently a scientist at the Qatar Computing Research Institute (QCRI). Previously, Serafini was a post-doctoral research fellow at Yahoo! Research in Barcelona. He received a Ph.D. in computer science from TU Darmstadt (Germany) in 2010 where his thesis was nominated for best thesis awards by the German, Swiss, and Austrian computer science societies and the German chapter of the ACM.



Philip Thomas, *Assistant Professor*
Philip Thomas conducts research in reinforcement learning (RL), decision making, and artificial intelligence safety, with a focus on designing biologically plausible RL algorithms. He earned his Ph.D. in computer science from the University of Massachusetts Amherst in 2015 and received the CICS Outstanding Teaching Assistant and Outstanding Dissertation Awards in 2012 and 2015, respectively. He returns to CICS after completing a postdoctoral fellowship at Carnegie Mellon University.



Jie Xiong, *Assistant Professor*
Jie Xiong's research interests are in device-free human activity tracking, fine-grained gestures recognition, and wireless networking. He will join CICS in January 2018 from Singapore Management University where he is currently an assistant professor of information systems. Xiong earned his Ph.D. in computer science from University College London in 2015 and is the recipient of a Google European Doctoral Fellowship and a British Computer Society Distinguished Dissertation Award runner-up. He will also be affiliated with UMass Amherst's Institute for Applied Life Sciences (IALS).

CICS BOOSTS DEEP LEARNING RESEARCH WITH POWERFUL NEW GPU CLUSTER

With a new cluster of specialized graphics processing units (GPUs) now installed, the College of Information and Computer Sciences is poised to attract the nation's next crop of top Ph.D. students and researchers in such fields as artificial intelligence, computer vision, and natural language processing.

Erik Learned-Miller, CICS professor and lead researcher on the GPU project, said, "GPUs are critical for modern computer science research because they have such enormous computational power. They can address extreme computational needs, solving problems 10 times faster than conventional processors, in days rather than months. They can run neural network algorithms that are prohibitively slow on lesser machines. Our new network of 400 GPUs is unusually large for an academic cluster."

The new GPU cluster, housed at the Massachusetts Green High Performance Computing Center in Holyoke, Mass., is the result of a five-year, $5 million grant to the campus from Gov. Charlie Baker's administration and the Massachusetts Technology Collaborative last year. It represents a one-third match to a $15 million gift supporting data science and cybersecurity research from the MassMutual Foundation of Springfield.

Deep learning research uses neural network algorithms to make sense of large data sets. The approach teaches computers through trial and error to categorize data, much as human brains do. "Deep learning is a revolutionary approach to some of the hardest problems in machine reasoning, and is the 'magic under the hood' of many commercial products and services," said Learned-Miller. "Google Translate, for example, produced more accurate and natural translations thanks to a novel deep-learning approach."

Erik Learned-Miller

Andrew McCallum, professor and founder of the Center for Data Science, said, "This is a transformational expansion of opportunity and represents a whole new era for the center and our college. Access to multi-GPU clusters of this scale and speed strengthens our position as a destination for deep learning research and sets us apart among universities nationally."

He said the campus currently has research projects that apply deep learning techniques to computational ecology, face recognition, graphics, natural language processing, and many other areas.

The new GPU cluster, housed at the Massachusetts Green High Performance Computing Center, is the result of a five-year, $5M grant from the Massachusetts Technology Collaborative.

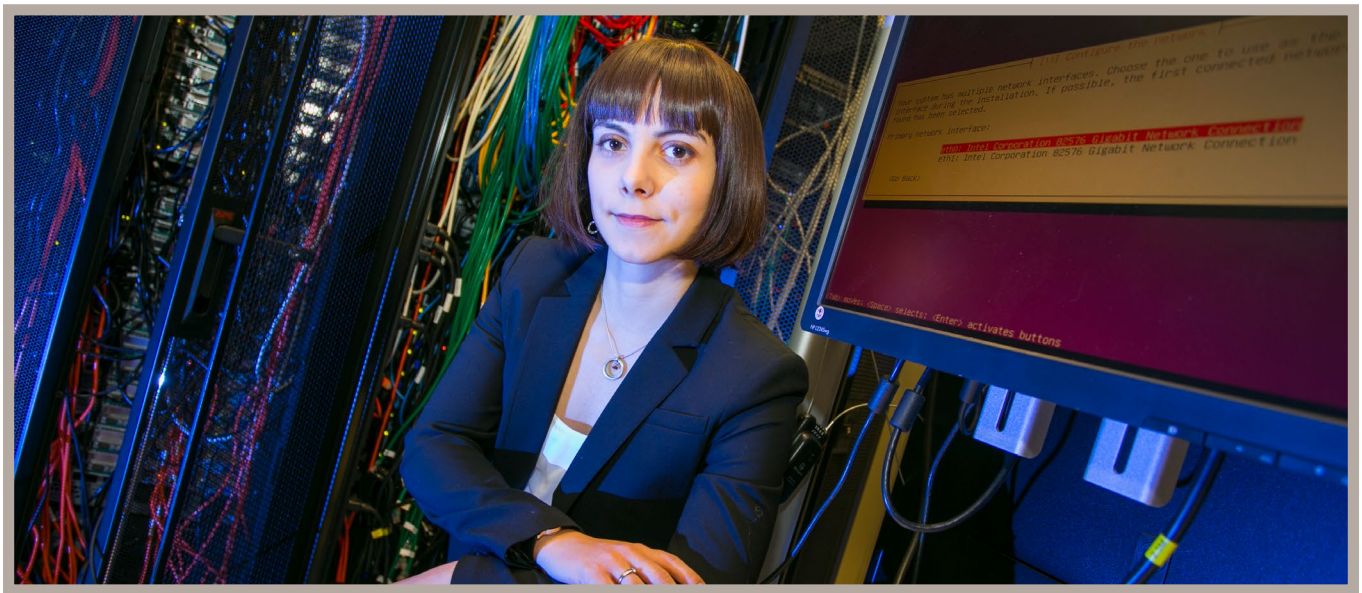
The state funds must be used for computing hardware at UMass Amherst, its Springfield Center for Cybersecurity, and for terminals at Mount Holyoke College and the UMass Center in Boston, the researchers noted.

Learned-Miller said approximately $2 million has been spent on two clusters: the GPU cluster dubbed "Gypsum" and a smaller cluster of traditional CPU machines dubbed "Swarm II." Gypsum consists of 400 GPUs installed on 100 computer nodes, along with a storage system and a backup system. It is configured with a leading software package for deploying, monitoring, and managing such clusters.

Not only do the researchers hope the GPUs will accelerate deep learning research and train a new generation of experts at CICS, but an important overall goal is to foster collaborations between UMass Amherst and industry. For example, if MassMutual data scientists design a practical problem with high computational needs, they can collaborate with sponsored UMass faculty and graduate students to solve it on the Gypsum cluster.

> *"Access to multi-GPU clusters of this scale and speed strengthens our position as a destination for deep learning research and sets us apart among universities nationally."*
>
> **— Andrew McCallum**

(Source: UMass Amherst Office of News & Media Relations)



Phillipa Gill

GILL NAMED TO MIT TECHNOLOGY REVIEW'S TOP "INNOVATORS UNDER 35"

CICS Assistant Professor Phillipa Gill has been named one of *MIT Technology Review's* 2017 "35 Innovators Under 35" for her groundbreaking work on Internet censorship and network security.

The award, first given by the magazine in 1999, celebrates young innovators who are poised to be leaders in their fields. Gill is recognized in the "Pioneer" category, joining peers who are developing new approaches to tackling technology challenges. She said, "I am honored and excited to be listed among the Innovators under 35. The award encourages me to continue to push the boundaries in my work on Internet security and censorship measurements."

This year's honorees are featured in the online magazine, and in the September / October print version. They will appear in person at the upcoming EmTech MIT conference on Nov. 6-9 in Cambridge.

Dean Laura Haas said, "Acknowledging and supporting young innovators is essential to moving our field forward. We are pleased that the editors of the *MIT Technology Review* share our view of Phillipa — she is a true pioneer. Her interdisciplinary work towards forwarding human rights is an excellent example of the impact computer science can have on society."

Gill's interest in Internet censorship began when she was a postdoctoral researcher in the University of Toronto's Citizen Lab. Speaking with political scientists there, she found that her research on network measurement was directly related to problems around accurately identifying and measuring Internet censorship in high-risk, and sometimes dangerous, locations around the globe.

As she told the magazine, when she was at the Citizen Lab, she was surprised to find that there was no accepted approach for empirically measuring censorship. *TechReview* reported, "So she built a set of new measurement tools to detect and quantify such practices. One technique automatically detects so-called block pages, which tell a user if a site has been blocked by a government or some other entity. In 2015, Gill and colleagues used her methods to confirm that a state-owned ISP in Yemen was using a traffic-filtering device to block political content during an armed conflict."

At UMass Amherst since 2016, Gill and a group of graduate student researchers are now developing a software platform to address these and related problems by measuring online information controls. The software, dubbed ICLab, has been installed on 14 small, low-cost computers known as Raspberry Pis, and also runs on hundreds of Virtual Private Network (VPN) servers worldwide. The Raspberry Pis are deployed to countries such as Pakistan, Turkey, and Yemen, where a network of volunteers connect them to the Internet.

Once connected, ICLab uses techniques developed by Gill's research team to study traces of network packets to automatically identify whether content is blocked, as well as understand how governments implement censorship.

SAHA AWARDED NSF CAREER GRANT

Barna Saha

CICS Assistant Professor Barna Saha has been awarded a five-year, $549,986 faculty early career development (CAREER) grant from the National Science Foundation. It is the agency's most prestigious award in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and integrating education and research with their institution's mission.

Among other topics, Saha will explore one of the oldest problems in computing: the fundamental question of what problems can be solved by computers, and solved in a reasonable amount of time. These are problems that, "no matter how clever you are, you cannot solve them efficiently," she explained.

In the latter case, she added, "approximation algorithms can help. They are a less optimal tool, but very close to optimal is almost as good, in fact perhaps good enough when efficiency is concerned. This is one of the areas I'll be working on: Can we develop a faster algorithm for some of the very hard problems and if not, can we definitely say there is a computational barrier there? That conclusion is valuable because then people can stop working on that particular problem, and turn to ask different questions."

She intends to seek a "finer-grained design and analysis of algorithms" that will lead to a better understanding of "the extent of speed-up possible especially for high-degree polynomial time problems."

In using approximation algorithms, one trades quality for speed, Saha said, but even with improved algorithms and alternative strategic approaches to data management, in today's world of big data, it is becoming harder and harder for computers to successfully handle the data deluge.

She will develop "systematic techniques that emphasize on the trade-offs between running time, approximation and randomness and aid in designing low-complexity parallel algorithms which will significantly improve the state of the art."

Saha also hopes to design new courses for students at CICS, and to work closely with industry for possible adaptation of new methodologies for practical big data management problems.

Before joining CICS in 2014, Saha was a research scientist at AT&T Shannon Research Laboratory, which she joined after completing her Ph.D. in computer science at the University of Maryland, College Park in 2011. She is also a recipient of the NSF CISE Research Initiation Initiative award for developing fast algorithms for dynamic programming.

IMPACT: GRACE HOPPER CELEBRATION OF WOMEN IN COMPUTING

Thanks to contributions to the College of Information and Computer Sciences, the college was able to send the six students shown above to the 2017 Grace Hopper Celebration of Women in Computing in Orlando, Fla. (l. to r.) (Front) Janani Krishna, Manpreet Kaur. (Middle) Ani Gevorgyan, Ankita Mehta. (Back) Diane Tam, Nithyashri Govindarajan.

AFTER 36 YEARS AT IBM, LAURA HAAS RETURNS TO AMHERST TO LEAD CICS

For Laura Haas, taking the helm as Dean of the College of Information and Computer Sciences was not just a career shift—it was also a homecoming. Haas is an Amherst native and UMass "faculty brat" whose parents were both on the psychology faculty. After many years in California, she's been looking forward to a return to four seasons, the rigors of east coast hiking, and Amherst's mix of small town and sophisticated taste.

Haas returned to Amherst after a 36-year career at IBM, where she most recently served as director of the Accelerated Discovery Lab. In 2009, Haas was named an IBM Fellow in recognition of her accomplishments in the field.

During her IBM career, Haas spent a sabbatical year at the University of Wisconsin, Madison (1992) and at ETH Zurich (2009). She was drawn back to academia because she was excited about tackling the challenges facing computer science programs and eager to work with faculty and students.

While the reputation of CICS attracted Haas back to UMass Amherst, the warm and close-knit community she found among the faculty, students, and staff was also a significant draw. "I've never seen a computer science department that has this feel," she observes. "And then they couple that with excellent researchers, a strong tradition for research and teaching excellence, and a drive to succeed. It's a tremendously appealing and exciting atmosphere."

The college's well-rounded portfolio has impressed Haas, especially its strong faculty representation in the key areas of information and computer sciences, from networking and systems to machine learning, information retrieval, and cyber security. She's looking forward to helping the college enhance these strengths, expanding information science and informatics, human-computer interaction, and visualization, and broadening its work in information retrieval and data mining.

Haas is eager to address the challenges the college faces. Even before arriving in Amherst, she began working on the fundraising necessary for constructing a new building for CICS. She is also focused on increasing the capacity to teach more students without compromising the quality of the education, making sure students have thorough guidance in their career development, and increasing the diversity of the student and faculty community. As she candidly puts it, "If you don't get enough women and minorities in the early pipeline, we all suffer down the line."

In addition to her aspirations for the college, Haas is excited about the crucial role UMass Amherst will continue to play in the broader field. "In the last decade, technology has transformed almost every aspect of our daily lives. With the quality of people we have at UMass Amherst and in CICS, we are uniquely prepared to be a huge part of the changes and growth that are coming in the next ten years," she predicts. "There is almost no field, whether in the sciences, social sciences, or humanities that won't require support or innovation from computer science. That's really the cool thing, to be on the leading edge and to be able to help shape some, what we would call in industry, 'big plays,' where we can have a real impact."

Laura Haas, Dean

While the reputation of CICS attracted Haas back to UMass Amherst, the warm and close-knit community she found among the faculty, students, and staff was also a significant draw.

Haas earned her Ph.D. in computer science at the University of Texas Austin and holds an A.B. in mathematics and computer science from Harvard University. She is fellow of the Association for Computing Machinery and an elected member of the American Academy of Arts and Sciences and the National Academy of Engineering. Among numerous awards and accolades, she received the Anita Borg Technical Leadership Award and the SIGMOD Edgar F. Codd Innovations Award, the highest honor in the database field, in 2010 and 2015 respectively.

CELEBRATING 25 YEARS OF THE CENTER FOR INTELLIGENT INFORMATION RETRIEVAL

For 25 years, the Center for Intelligent Information Retrieval (CIIR) has been at the forefront of research in information retrieval and applied natural language processing and engaged in groundbreaking industry and government collaborations.

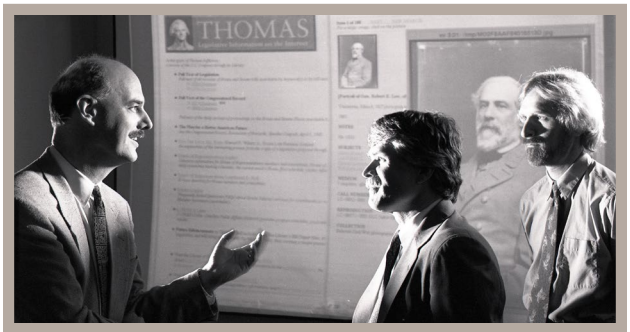
"When the center was first proposed, it would have been hard to envision the dramatic changes in the Internet and web search that would take place over the next twenty years, but we found that the relevance of the CIIR's research focus increased with each change," observed Distinguished Professor W. Bruce Croft, director of the CIIR since its creation in September 1992 and former dean of CICS.

The CIIR began with an eight-year National Science Foundation (NSF) State/Industry University Cooperative Research Center (S/IUCRC) program grant. Croft was the director, Professors Rick Adrion, Wendy Lehnert, Victor Lesser, and Edwina Rissland were co-principal investigators, and Paul McOwen served as administrative director. The S/IUCRC program provided $300,000 annually from the NSF and $300,000 from the state, with matching funds provided by the CIIR industry members. In total, 18 faculty have been involved in the CIIR, including Professor James Allan (current CIIR co-director and chair of the faculty in CICS) and Jamie Callan (professor at Carnegie Mellon University and former CIIR assistant director). Professor Andrew McCallum joined the CIIR in 2002 and is now the Director of the Center for Data Science.

From the start, the CIIR was unique in its use of an innovative non-profit technology transfer corporation, ACSIOM (Applied Computing Systems Institute of Massachusetts), to quickly license and commercialize technology developed within the center. ACSIOM and Rick Adrion, the chair of the ACSIOM Board, were critical to the success of the proposal and the technology transfer operations of the center.

Information retrieval (IR) studies how people access and understand information and how computer-based systems can support that process. The CIIR is recognized as one of the world's leading IR research groups. Its researchers have made significant contributions to the field, including:

CIIR faculty, postdocs, students, visitors, and staff in 2016



In this 1995 photo, Bruce Croft, Paul McOwen, and Jamie Callan discuss the U.S. Library of Congress projects being undertaken by the CIIR.

- Understanding and improving information access though probabilistic retrieval models, including the first description of a retrieval system based on statistical language models.
- Introducing and improving numerous techniques for text and query representation, such as phrase representations, passages, "named entities," statistical stemming, and query expansion.
- Leading the development of techniques for distributed search based on automatically representing databases and combining local searches.
- Producing the first high capacity probabilistic filtering architecture and carrying out some of the earliest evaluations of machine learning algorithms for filtering.
- Helping define and evaluate the first versions of event detection and tracking software.
- Carrying out some of the earliest research on ranking and representation techniques for Asian languages, and showing how bilingual dictionaries can be an effective basis for a cross-lingual system.
- Developing some of the first approaches to information extraction that emphasized learning.
- Evaluating novel techniques for indexing images and video using joint models with associated text.
- Developing search engine software that has been used by thousands of academic groups, government agencies, and companies.

As a testament to their impact, CIIR researchers have received six ACM SIGIR Test of Time Awards (and additional honorable mentions) recognizing their "long-lasting influence" on IR research. Croft and co-authors received the awards for leading research in the areas of relevance based language models, query expansion using document analysis techniques, and inference networks for searching distributed collections. Allan and co-authors received the award for their influential work on topic detection and tracking.

A continuing priority for the CIIR is providing information retrieval research tools to the academic community and to the public. The Lemur Toolkit, a collaboration with Carnegie Mellon University's Jamie Callan, is open-source software that has become a standard resource for researchers in the field of information retrieval. Academic mentoring has also been a key focus, and hundreds of talented research staff, students, and visiting researchers/postdocs were involved with the CIIR over its 25-year history.

In addition to producing fundamental research advances, the CIIR has been involved in many innovative industry collaborations. In the early 1990s, corporate partners used the CIIR's search technology in numerous "firsts," as they began using the web. For instance, Lotus Development Corporation, well known for its Lotus 1-2-3 spreadsheet application, worked with the CIIR to create a worldwide online customer support system based on CIIR technology. The early web search company Infoseek used CIIR technology, and West Publishing (now Thomson Reuters) based their WIN legal document retrieval system on information retrieval technology from the CIIR. In a well-publicized example of industrial collaboration, the CIIR worked with IBM on the question answering technology behind the company's intelligent computing system, Watson, that defeated two top-winning quiz show contestants in 2011's first-ever human vs. machine "Jeopardy!" competition. Watson used a variant of the CIIR's Indri search engine as one of its two main document search engines.

The CIIR was also involved in many firsts with its government partners. In the early 1990s, the CIIR developed Govbot, the first federal government information portal for a one-stop search site for government information and technology across the entire federal government (all .gov and .mil sites). Using the CIIR InQuery software as their search engine, the Clinton/Gore White House was the first presidential administration to provide a web search capability for presidential speeches, press briefings, and other documents.

The U.S. Department of Commerce chose the CIIR to make its National Trade Databank searchable over the Internet for the first time. In another first, the U.S. Holocaust Memorial Museum collaborated with the CIIR on making the museum's entire collection of text, audio, images, and films available and searchable over the Internet. The CIIR worked with the U.S. Library of Congress (LoC) on a number of groundbreaking and high-visibility projects, and CIIR technology was used in the THOMAS System, a searchable corpus of Congressional Research Reports, Public Policy File, and all existing federal law and pending bills. THOMAS was an enormous success emulated in countries around the world. The CIIR also worked with the LoC to provide access to several collections, including the American Memory collection of historic photographic archives and the Global Legal Information Network. Other CIIR government partners included the Patent and Trademark Office, Internal Revenue Service, National Library of Medicine, and the U.S. Department of Transportation.

"A goal of the NSF S/IUCRC program was for centers to become self-sustaining after the NSF funding ended. The CIIR achieved that goal and remains a thriving center today, 25 years after the original funding began," noted Croft. "With the advent of mobile search and voice-based search, and new developments in neural net models, there is enormous potential for new and exciting research and industry collaborations in this area and we expect the CIIR to be an important part of that future."

A timeline with highlights from a quarter century of the CIIR is available at **ciir.cs.umass.edu/timeline.**

BY THE NUMBERS 1992- 2017

$75 MILLION+ FUNDING

500+ CIIR PERSONNEL

NEARLY **400** STUDENTS SUPPORTED (50% GRAD; 50% UNDERGRAD)

75 PHDS PRODUCED

18 FACULTY INVOLVED

60 STAFF

100+ CIIR INDUSTRY/GOVERNMENT MEMBERS

1,000+ PUBLICATIONS (JOURNALS AND CONFERENCE PAPERS)

300+ SOFTWARE LICENSES

OVER **100K** SEARCH SOFTWARE DOWNLOADS

(l. to r.) Steve Harding, Bruce Croft, Dan Nachbar, Michelle LaMar, Bob Cook, and Margie Connell gather for a CIIR research meeting in the early 1990s.

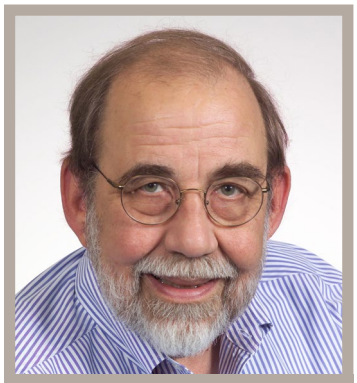
COMPUTER SCIENCE FOR WESTERN MASSACHUSETTS SCHOOLS

As part of the efforts around the CSforAll Initiative, UMass Amherst and the Five College Consortium will collaborate with district and school administrators and teachers in the Springfield and Holyoke, Massachusetts public schools to develop research-based planning, design and implementation processes that will facilitate introducing computational thinking across all grade levels and provide computer science curricula and content to all students.

Funded by a $300,000 NSF EAGER grant, the program is a collaboration between Rick Adrion, CICS professor emeritus; Enobong H. Branch, professor of sociology; Nilanjana Dasgupta, professor of psychology; Rebecca H. Woodland, professor of education; and Marla Solomon, the Five Colleges Consortium director of partnership programs.

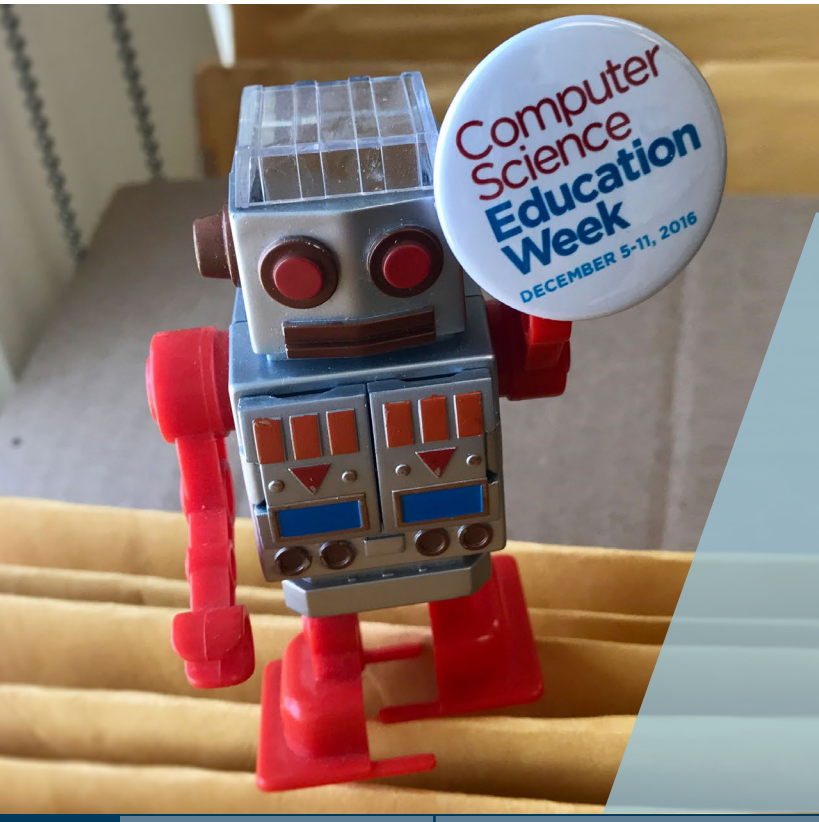
The CSforAll Initiative helps states to develop comprehensive five-year plans to make computing curricula available across all public high schools, get students involved in CS learning opportunities in elementary and middle schools, and ensure access for all students, including girls and underrepresented minorities.

The researchers will work with the two school districts to create processes that will lead to effective district-level CSforAll strategies, informed by research and evaluation that will serve as models for other Massachusetts districts and provide a roadmap for national adoption.



Rick Adrion

The effort will bring together research and practice communities to create networked improvement communities, which include district and school administrators and teachers, members of state and local computing education initiatives, professional development providers, representatives from state education authorities, students, parents, and a strong team of CS and STEM education professionals and education and social science researchers to assess options and to begin to design strategies that best fit district priorities and constraints.



CAITE CELEBRATES #CSEDWEEKMA

CICS's Commonwealth Alliance for Information Technology Education (CAITE) and the Massachusetts Technology Leadership Council (MassTLC) Education Foundation partnered to provide teachers with materials and ideas for activities to raise awareness about computer science in their classrooms during Computer Science Education Week held from Dec. 5-11, 2016. CICS student volunteers also worked with students in three area schools on coding-related activities. Work is underway for Computer Science Education Week 2017.

Dear Alumni, Parents, and Friends,

In the past academic year, members of our community stunned us with their generosity.

Donors gave more than $384,000 in gifts to scholarships and the CICS general gift fund, and an additional $110,000 was pledged for the coming years. We received generous memorial gifts honoring faculty members, gifts of appreciation from parents of current and past computer science students, and generous scholarship gifts that brought a new endowment to life and will more than double the principal of four existing endowments.

Our donors choose to give for a variety of reasons. Some give to honor an inspiring faculty mentor, or in gratitude for a successful career in industry or research. Others remember how important scholarships were when they were students, and give to provide those opportunities to another generation. Others choose to establish a philanthropic legacy through gifts that reflect their values and interests.

Julie Stubbs

Both donors and the students who benefit from this generosity are uplifted by their experiences with philanthropy. Donors are thrilled to see the impact of their gifts on students who are excited to enter the field. Student recipients so greatly appreciate the support, they vow to give back themselves once their careers are established.

As you look back on the people and experiences that contributed to your success, I hope you will consider how you wish to give back. Current-use gifts provide immediate funds to enrich our students' educational experiences. Endowment gifts are invested and provide an annual payout in perpetuity. Gifts committed through an estate plan provide valuable support for the college far in the future.

Thank you all for your generosity, and for staying engaged in the life of the College of Information and Computer Sciences.

Warm regards,

Julie Stubbs

Director of Development
stubbs@cics.umass.edu
(413) 545-1220

Thank you for your philanthropic support!

The following alumni and friends have made gifts to the College of information and Computer Sciences from **July 1, 2016 – June 30, 2017**. Philanthropy is vitally important to the college and helps maintain a world-class instructional and research program. Contributions from alumni and friends help fund scholarships and important special activities that are not supported through the state budget.

If you are interested in making a gift to the college, please contact Julie Stubbs, director of development (**stubbs@cics.umass.edu** or 413-545-1220).

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SILICON VALLEY CS ALUMNI SCHOLARSHIP ESTABLISHED

A group of computer science alumni working in Silicon Valley have created a new endowed scholarship called the Silicon Valley Computer Science Alumni Scholarship.

Beginning in 2018, the endowment will provide an annual scholarship to an undergraduate student who is pursuing an interdisciplinary program combining computer science and another discipline. Eligible recipients will have financial need as determined by the Financial Aid Office, with preference to members of underrepresented groups within the College of Information and Computer Sciences.

The donors to this scholarship are a diverse group of professionals working in Silicon Valley. These alumni and friends of the college recognize the importance of bringing employees with a broad range of life experiences, interests, and backgrounds to enrich the innovation of Silicon Valley and build more inclusive companies. Recognizing that computing has transformed every industry and academic discipline, they wish to support the development of truly interdisciplinary students well-trained in computer science and broadened by exposure to other fields.

The Silicon Valley Computer Science Alumni Scholarship is the 5th endowed scholarship for the more than 600 undergraduate computer science majors who qualify for financial aid.

CICS SCHOLARSHIPS ASSIST TALENTED STUDENTS

Olivia Higgins ('20) Awarded First Congrad Wogrin Scholarship

The first Conrad Wogrin Undergraduate Scholarship in Computer Science was awarded to freshman Olivia Higgins in January 2017.

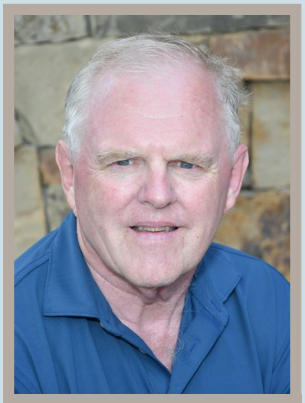
The Wogrin Scholarship, created in honor of the late Professor Emeritus Connie Wogrin, provides scholarship support to undergraduates in the UMass Amherst College of Information and Computer Sciences. Eligible recipients must demonstrate outstanding interest and promise in the field of computer with preference given to students who are members of underrepresented groups and who demonstrate financial need as determined by the Financial Aid Office. The scholarship is awarded to a freshman or sophomore, and is renewable each semester until graduation.

Olivia remarked on the impact of the scholarship: "It is an honor to be the first recipient of such a huge award and I am very grateful to be selected. Because I am expected to pay for books and personal expenses, your scholarship will go a long way to supplementing my funds. Thank you for significantly lightening my financial burden. I hope that one day I can help others to achieve their goals, just as you have helped me."

"I hope that one day I can help others to achieve their goals, just as you have helped me."

WHY I GIVE

Every single gift to CICS is appreciated and has an impact on our students and programs. This is why John Woods (B.A. '70, M.S. '76, Ph.D. '80) chose to give…



John Woods
(B.A. '70, M.S. '76, Ph.D. '80)

"I recently made a donation to the Robbie Moll Scholarship Fund, in appreciation for the role Robbie played in my graduate education at UMass Amherst. The scholarship provides financial support to students who attended community college, particularly students who are first in their family to attend college.

I was the first person in my family to go to college. I had gone to UMass Amherst as an undergraduate, and had been out of college for several years before I applied to UMass Amherst's Ph.D. program in computer science. However, my undergraduate degree was in theater and I hadn't taken many of the undergraduate computer science and mathematics courses viewed as requirements for admittance.

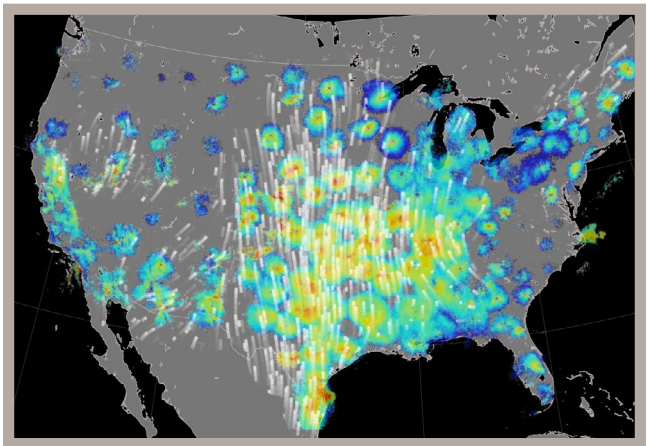
Despite the fact that I didn't have the formal background, Robbie came across my application and saw reason to believe that I might be a non-traditional success. He argued to have me admitted to the program.

Subsequent events, of course, showed that it was a reasonable choice as within a year I was viewed as one of the department's top students. I then went on to earn a Ph.D. and later had a successful career.

There is absolutely no doubt that non-traditional students who break through not only succeed, but also frequently provide the spark to help us look at something differently. It is important to find ways to assure that students from diverse backgrounds are not excluded from any important endeavor.

I give so that talented students from all backgrounds have access to a computer science education."

DARK ECOLOGY PROJECT WILL USE WEATHER RADAR DATA TO TRACE BIRD MIGRATIONS



A national radar mosaic showing heavy bird migration throughout the Midwestern United States on the night of May 2, 2015. Streamlines show simulated bird trajectories based on radar measurements of migration.

Billions of birds migrate across the United States, largely unseen under the cover of darkness. Researchers, led by CICS Assistant Professor Daniel Sheldon, plan to develop new analytic methods with data collected over the past 20 years — more than 200 million archived radar scans from the national weather radar network — to provide powerful new tools for tracking migration.

Sheldon said, "The Dark Ecology Project will develop new resources allowing us to estimate the densities of migrating birds over the U.S. each year for the last 25 years." His collaboration with CICS Assistant Professor Subhransu Maji and Steven Kelling, director of information science at the Cornell Laboratory of Ornithology, is supported by a three-year, $1.2 million National Science Foundation grant.

Kelling's information science team developed eBird, a citizen science project that collects observations from birdwatchers across the globe. The researchers use big data methods to piece together eBird observations to reveal complex patterns of bird occurrences and to guide international bird conservation. Maji's group has developed computer vision techniques for fine-grained categorization, which are already helping citizens connect with nature by automatically recognizing species of birds, animals, and other organisms in photographs.

A long-term vision for the new grant is to combine these new data resources to provide a detailed continent-wide view of bird migration. Sheldon said, "eBird data can tell us about bird distributions and which species are present at different locations and times of year, while radar data can tell us how birds are moving over the continent throughout the year."

Access to the radar scans was enhanced in 2015, when Amazon Web Services reached a research agreement with the U.S. National Oceanic and Atmospheric Administration to increase the amount of NOAA data that is made available via the cloud. This made NEXRAD data accessible at a much lower cost.

The scientists plan to make the resulting dataset freely available as an information resource for researchers to estimate the number of birds migrating on any given night, measure the patterns and trends of bird populations, and do hypothesis-driven science.

(Source: UMass Amherst Office of News & Media Relations)

SYMPOSIUM SHOWCASES IMPACT OF DATA SCIENCE RESEARCH

Over 100 researchers across industry and academia attended the second annual Center for Data Science Research Symposium on April 27, 2017 to explore practical applications of data science and the potential of its research. Former UMass Amherst Provost and Senior Vice Chancellor for Academic Affairs, Katherine Newman, shown below, participated in the Workforce Analytics Workshop, one of three workshops held in the afternoon.

EXTENDING BATTERY LIFE FOR MOBILE DEVICES

A team of CICS researchers led by Professor Deepak Ganesan introduced a new radio technology that allows small mobile devices to take advantage of battery power in larger devices nearby for communication.

Ganesan and his graduate students, Pan Hu, Pengyu Zhang, and Mohammad Rostami, designed and are testing a prototype radio that could help to extend the life of batteries in small, mass-market mobile devices such as fitness trackers and smartwatches. They hope using "energy offload" techniques may help to make these devices smaller and lighter in the future. Ganesan and colleagues have dubbed the new technology Braidio for "braid of radios," and say it can extend battery life hundreds of times in some cases.

The researchers showed that they have made strides toward fixing this energy storage problem, designing a radio that has the ability to offload energy to larger devices nearby and, in effect, making both device size and battery consumption proportional to the size of battery.

To achieve this, they embellished Bluetooth with the ability to operate in a similar manner to radio-frequency identification (RFID), which operates asymmetrically. That is, a reader does most of the work and pays the majority of the energy cost of communication, while a tag, typically embedded in a smaller device or object, is extremely power-efficient.

Braidio operates like a standard Bluetooth radio when a device has sufficient energy, but operates like RFID when energy is low, offloading energy use to a device with a larger battery when needed.

Hu said their Braidio test results show that when a device with a small battery is transmitting to a device with large battery, Braidio can offer roughly 400 times longer battery life than Bluetooth, since the smaller device's battery is preserved longer.

"To be clear, our results only cover the cost of communication or transmitting data," Hu added. "If a radio is transmitting from a camera that consumes hundreds of milliwatts while using its sensor, clearly the sensors may dominate total power consumption and reduce the benefits of optimizing the radio."

Ganesan said that technologies like Braidio open up a new way of thinking about the design of mobile and wearable devices. "Wearable devices are often bulky due to large batteries needed for adequate battery life," he said. "Perhaps such energy offload techniques can reverse this trend and enable thinner and lighter devices."

Deepak Ganesan

INTRODUCING DIVERSITY IN ONLINE LANGUAGE ANALYSIS

For the past 30 years, computer science researchers have been teaching their machines to read so computers can learn the English they need to run search engines like Google or mine platforms like Facebook and Twitter for opinions and marketing data.

However, using only standard English has left out whole segments of society who use dialects and non-standard varieties of English, and the omission is increasingly problematic, said CICS Assistant Professor Brendan O'Connor and Lisa Green, director of UMass Amherst's Center for Study of African-American Language. They collaborated with CICS doctoral student Su Lin Blodgett on a case study of dialect in online Twitter conversations among African Americans. The authors believe their study has created the largest data set to date for studying African-American English in online communication, examining 59 million tweets from 2.8 million users.

The researchers evaluated their model against existing language classifiers to determine how well existing natural language processing tools perform in analyzing African-American English in user-level and message-level analyses. They found that current widely used tools identify African-American English as "not English" at higher rates than expected, O'Connor said. "Since African-American English is analyzed poorly, that implies information access is worse for texts authored by African-American English speakers. The issue of fairness and equity in artificial intelligence methods is of increasing concern, since they are crucial to technologies we use every day, like search engines."

Brendan O'Connor

Twitter Language Identifier, the model developed by the researchers, is now available for download at: **slanglab.cs.umass.edu/TwitterLangID**

Jensen, Levine: IEEE INFOCOM Test of Time Award

David Jensen

Brian Levine

Professors David Jensen and Brian Levine and alumni John Burgess (BS '04, MS '06) and Brian Gallagher (MS '04) received a 2017 IEEE INFOCOM Test of Time Paper Award for their 2006 paper, "MaxProp: Routing for Vehicle-Based Disruption-Tolerant Networks."

Brun: Teaching Honors

Yuriy Brun

Associate Professor Yuriy Burn was awarded a 2017-2018 Lilly Teaching Fellowship from the UMass Amherst Institute for Teaching Excellence and Faculty Development (TEFD). The program enables promising junior faculty to cultivate teaching excellence by developing or redesigning a course. He is one of fifteen CICS faculty who have received the fellowship since the program's inception in 1986.

Brun is also the recipient of the 2017 CICS Outstanding Teacher Award. Candidates for this award are nominated by their students and peers and selected by the CICS Awards Committee.

Gill, O'Connor: Google Faculty Research Awards

Phillipa Gill

Brendan O'Connor

Assistant Professors Phillipa Gill and Brendan O'Connor were awarded Google Faculty Research Awards for work in networking and natural language processing. The one-year awards are structured as unrestricted gifts to recognize and support the research of permanent faculty members at top universities around the world. Only 15% of applicants receive funding.

BARTO: IJCAI-17 AWARD FOR RESEARCH EXCELLENCE

CICS Professor Emeritus Andrew Barto is the 2017 recipient of the International Joint Conferences on Artificial Intelligence IJCAI-17 Award for Research Excellence.

The lifetime achievement award recognizes scientists who consistently produce high-quality research in their field resulting in several noteworthy findings or outcomes. Barto is being recognized for his groundbreaking and impactful research in both the theory and application of reinforcement learning.

This is the second IJCAI Research Excellence Award for UMass Amherst artificial intelligence pioneers; Professor Emeritus Victor Lesser received the award in 2009.

Barto also received the 2004 IEEE Neural Network Society Pioneer Award for his contributions to the field of reinforcement learning. He is a fellow of the American Association for the Advancement of Science, a fellow and senior member of the IEEE, and a member of the Society for Neuroscience.

Barto has published over one hundred papers or chapters in journals, books, and conference and workshop proceedings. He is co-author with CICS alum Richard Sutton (Ph.D. '84) of the book "Reinforcement Learning: An Introduction," MIT Press, 1998, which has been cited over 25,000 times – Barto and Sutton are currently working on the second edition.

He joined the Computer Science Department in 1977 and served as department chair for four years prior to his retirement in 2012. He received a B.S. with distinction in mathematics from the University of Michigan in 1970 and his Ph.D. in computer science in 1975, also from the University of Michigan.

The award will be presented to Barto at IJCAI/ECAI 2018 in Stockholm, Sweden.

Andrew Barto

CICS MOURNS THE PASSING OF CONRAD WOGRIN

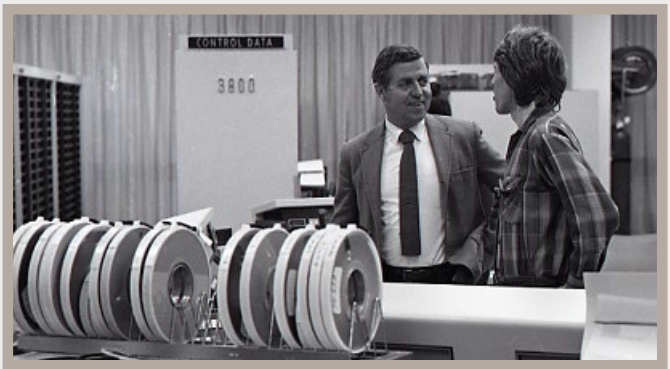
Emeritus Professor Conrad "Connie" Wogrin, 92, died peacefully on March 8, 2017, surrounded by his family.

Wogrin served as a professor of computer science starting in 1967 and director of the University Computing Center (UCC) from 1970 to 1988. He was one the first seven faculty hired in computer science and was instrumental to the growth of the program at the university. Along with the general responsibility of the UCC (now UMass Amherst Information Technology), where he was instrumental in supporting the research on visualization of massive data sets and the use of supercomputers, his research interests were in image processing, computer-based education, and computer-aided design.

Wogrin was the acting chair of the Computer Science Program at UMass Amherst from 1969-1970 and took on the responsibility to search for a new chair. With his help, the program was upgraded in 1972 to the Department of Computer and Information Science (COINS) offering MS and PhD degrees in the Faculty of Natural Sciences and Mathematics.

"Connie Wogrin was one of the major figures involved in establishing, nurturing, and growing computer science at UMass Amherst," said Bruce Croft, distinguished professor and former CICS dean.

After over a decade of phenomenal growth, Wogrin became acting chair again in 1985. Prior to his retirement in 1992, he continued his research interests in intelligent tutors and computational strategies in learning and education. He also served as the acting associate vice chancellor for research and graduate studies for the university from 1990 to 1992.



Wogrin in the early days for the University Computing Center (UCC)

He was the first member of his family to attend college, receiving his bachelor's, master's and doctoral degrees in electrical engineering at Yale University, where he later was a professor until leaving for the position at UMass Amherst.

In 2015, Wogrin's family founded the Conrad Wogrin Undergraduate Scholarship in Computer Science to provide support to undergraduate students who show particular promise and demonstrate financial need, with preference to students who are members of groups underrepresented in computer science. To learn more or make a gift, visit **cics.umass.edu/wogrin**. Photos of Wogrin's time at UMass Amherst can be found at **bit.ly/2n1HKtE**.

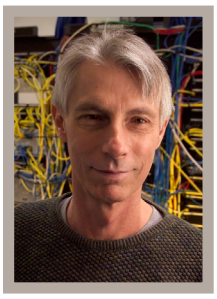
2017 SENIOR CELEBRATION HONORS NEW COMPUTER SCIENTISTS

On May 12, 2017, the College of Information and Computer Sciences held its Senior Celebration to honor the accomplishments of 213 new computer scientists, the college's largest undergraduate class.

FACULTY NOTES

Effective September 1, **Erik Learned-Miller** and **Gerome Miklau** have been promoted to full professor.

Associate Professor **Yuriy Brun** and collaborators received a Best Paper Award for their paper, "Continuous Analysis of Collaborative Design," at ICSA 2017.



Distinguished Professor **Donald Towsley** received a Distinguished Graduate Mentor Award from the UMass Amherst Graduate School in recognition of the graduate teaching and advising work he does outside the classroom. Towsley was also recognized as a UMass Amherst Spotlight Scholar.

Rick Adrion, professor emeritus, co-authored the Computing Research Association's report, "Generation CS: CS Undergraduate Enrollments Surge Since 2006."

Professor **Shlomo Zilberstein**, Assistant Professor **Daniel Sheldon**, and alumni **Xiaojan Wu** (Ph.D. '16) and **Akshat Kumar** (Ph.D. '12) received a Best Paper Award in the AAAI-17 Special Track on Computational Sustainability for their paper, "Robust Optimization for Tree-Structured Stochastic Design."

Teaching faculty member **Neena Thota** was selected to participate in a Summer 2017 Innovate@ symposium designed to provide faculty with training in the latest instructional technologies.

A paper by Assistant Professor **Alexandra Meliou** and collaborators was selected as an ACM SIGMOD Record Research Highlight. The paper, "A Scalable Execution Engine for Package Queries," appeared in the May edition of the SIGMOD Record.

The 2005 SIGIR paper, "A Markov random field model for term dependencies," by Distinguished Professor **Bruce Croft** and alum **Donald Metzler** (Ph.D. '07) was selected for the SIGIR 2017 Test of Time Award Honorable Mention.

Assistant Professor **Amir Houmansadr** gave a keynote talk, "The Cyberspace Battle for Information: Combatting Internet Censorship," at Brazil's national security conference, SBSeg 2016, on Nov 9, 2016 in Rio De Janeiro, Brazil.

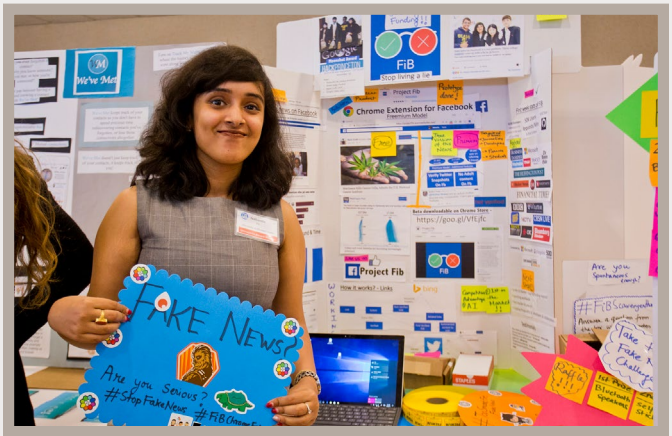
Lee Spector, adjunct professor, was named an IEEE Senior Member.

STUDENT NOTES

In the wake of the 2016 election, **Nabanita De** (M.S. '17) and her HackPrinceton teammates received national attention for an algorithm, "FiB," they developed to distinguish between real and fake news on Facebook. De, now a software engineer at Microsoft, also received a Harold Grinspoon Entrepreneurial Concept Award for her work on FiB.

Six undergraduate seniors were awarded CICS Outstanding Undergraduate Achievement Awards during the college's Senior Celebration on May 13, 2017: **Elaina Bliss**, **Dominic Arthur Defuria**, **Amanda Kaitlin Doucette**, **Christopher N. Jennison**, **Nicholas Reilly McAvoy**, and **Thai Ngoc Nguyen**.

The National Science Foundation awarded its prestigious and highly competitive Graduate Research Fellowship to two CICS students, graduate student **Su Lin Blodgett** and undergraduate senior **Aaron Weiss** (B.S. '17).



Nabanita De

KRUSELL APPOINTED COLLEGE'S FIRST DIRECTOR OF CAREER DEVELOPMENT

Brian Krusell was named the new CICS director of career development. In this new position within the college, Krusell will be focused on helping computer science undergraduates and graduate students discover, explore, and pursue professional experiences. His approach includes partnering with employers, alumni, faculty, staff, and parents to support students as they build their professional networks.

Krusell's primary responsibilities include managing employer relations through the college's Industrial Affiliates Program (IAP) and leading efforts to develop a broad range of career resources and events for students, supported by a new recruiting platform called Handshake.

Prior to joining CICS, Krusell was a management consultant with Alvarez & Marsal (A&M). He was part of their technology services group, serving as a program manager for large system implementations and mergers and acquisitions activities. One of his most memorable projects involved leading a global technology implementation for a Fortune 500 healthcare company. Krusell was responsible for facilitating the technology selection process, integrating the global, cross-functional agile development team, and managing scope and risks. His role expanded to include serving as the scrum master for the reporting and analytics module. While at A&M, Krusell was also active with A&M's employee training programs and campus recruiting.

Krusell graduated Phi Beta Kappa from Dickinson College with a double major in economics and international studies. He is an avid marathoner and is excited to explore all of the great running trails in the Pioneer Valley.

Brian Krusell

Krusell will be focused on helping computer science undergraduates and graduate students discover, explore, and pursue professional experiences.

CICS ALUMNI AWARD RECIPIENTS RECOGNIZED

On Friday, April 28, CICS celebrated the recipients of the college's ninth annual Outstanding Achievement and Advocacy (OAA) Awards. The OAA banquet was held at the UMass Amherst Marriott Center on the 11th floor of the Campus Center.

The CICS OAA Awards recognize the remarkable accomplishments of graduates of the college's degree programs and acknowledge the support of important friends of the college.

Bruce Croft, former dean of the College of Information and Computer Sciences, and James Allan, chair of the faculty, provided welcoming remarks. Between the presentation of awards, distinguished professor Jim Kurose, assistant director of the National Science Foundation for the Computer and Information Science and Engineering Directorate, delivered a speech titled, "Computing Research and Education: What's National is Local." Leon Osterweil, professor emeritus and chair of the OAA committee, presented the 2017 OAA awards to six CICS alumni listed below.

Additionally, during the awards, J. Eliot Moss, graduate program director, presented the Outstanding Graduate Student awards to Stephen Giguere and Sofya Vorotnikova (synthesis project), Garrett Bernstein and Adarsh Rangaiah (teaching assistant), and to recent Ph.D. alumni Charles Curtsinger and Pengyu Zhang (doctoral dissertation).

Outstanding Contributions to Society:
Shashi Buluswar
(M.S. '95, Ph.D. '02)
CEO,
Institute for Transformative Technologies

Outstanding Achievement in Entrepreneurship:
Tareef Kawaf
(B.S. '94)
President,
RStudio

Outstanding Achievement in Research:
Jamie Callan
(M.S. '87, Ph.D. '93)
Professor of Computer Science,
Carnegie Mellon University

Outstanding Achievement in Technology Development:
Brian Kettler
(B.S. '87)
Chief Scientist, LM Fellow,
Lockheed Martin

Outstanding Achievement in Management:
Rajesh Jha
(M.S. '90)
Executive Vice President,
Microsoft's Office Group

Outstanding Achievement by a Young Alum:
Sarah Osentoski
(Ph.D. '09)
Co-founder and Chief Operating Officer,
Mayfield Robotics

SAVE THE DATE: OAA 2018

Recipients of the 10th annual Outstanding Achievement and Advocacy (OAA) Awards will be honored in Friday, April 27, 2018. For details, go to: **cics.umass.edu/oaa2018**.

ALUMNI NOTES

Laurie Dillon (Ph.D. '94), professor of computer science at Michigan State's College of Engineering, received the 2017 ACM SIGSOFT Distinguished Service Award for outstanding leadership and service to the software engineering research committee.

Penghu Zhang (Ph.D. '16) was awarded a 2017 ACM SIGMOBILE Dissertation Award for his dissertation, "Leveraging Backscatter for Ultra-Low Power Wireless Sensing Systems." Zhang's work also received the 2016 CICS Outstanding Dissertation Award.

Thomas Gruber (M.S. 84, Ph.D. '88), head of advanced development for Apple's Siri, was named to the Board of Directors for the Partnership of AI, a not-for-profit established to study and formulate best practices in AI.

Ian Ricci (B.S. '12) reports that he has founded two Massachusetts-based start-ups: SolBid, a commercial solar energy company, and Remagine, a software development and IT services company.

The Royal Bank of Canada (RBC) has named **Richard Sutton** (M.S. '80, Ph.D. '84) as a head academic advisor to RBC Research in machine learning.

In memoriam: **Adele Howe** (Ph.D. '92), professor of computer science at Colorado State University, passed away in January 2017 after a long battle with cancer. Howe was an influential AI researcher with significant contributions in planning and scheduling.

How do you celebrate CICS? Colin Tincknell (B.A. '14, M.S. '16), now a software engineer at Google, answered by writing the name of one of CICS's legendary professors, Robert Moll.

2017 NEW ENGLAND ALUMNI MEET-UP

Over 80 CICS alumni gathered at TripAdvisor's headquarters in Needham, Mass. on Oct. 19, 2017 to catch up with friends and learn about the exciting things happening in CICS. We'll be holding alumni events in Silicon Valley and Seattle in 2018 — stay tuned for dates.

ANN WONG ('12) CULTIVATES SUPPORT AND MENTORSHIP OF WOMEN AT CIMPRESS

Ann Wong graduated from CICS in 2012, but her resume already reads like that of a veteran in the field. Starting at Cimpress, the parent company of Vistaprint, immediately after graduation, Wong quickly grew in her career by taking on challenging projects and leadership roles. Her most notable achievement has been co-launching a Cimpress Women in Technology (WIT) group, which has grown exponentially and provided support and mentorship to women throughout the organization and beyond.

Throughout her career, mentorship has been a consistent factor in Wong's success. Her early mentors were UMass Amherst computer science faculty, especially Robert Moll, who taught her Introduction to Java course, and David Fisher, who taught her first software engineering course. Moll's course sold Wong on computer science as a career and she has remained in touch with him ever since. Wong credits Fisher with seeing her potential as a manager and teaching her to work effectively within a team. Even now, as she moves between teams, she draws on that training: "You learn to adapt and brainstorm and really make beautiful products."

Wong began at Vistaprint as a software engineer, integrating Vistaprint technologies with those of partner companies. Early in her tenure, she met fellow engineer Siyi Gu. Observing the small number of women in the company, Wong and Gu discussed creating something similar to their college support groups. Wong's colleague and mentor Charles Dale immediately supported her. "It doesn't need to be anything grand, just grab a few friends and start the club," she recalls Dale saying. "That was really wonderful encouragement."

In June 2014, Wong and Gu launched the Cimpress WIT group, hosting luncheons with a handful of colleagues. Interest in the group grew immediately, and they started inviting Cimpress' female leaders to speak about their career paths. Once the group passed 100 members, they branched out, hosting presentations from members and outside speakers, making connections with colleges, nonprofits, and other companies, and organizing trainings and networking events in the greater Boston area.

As WIT has grown, so has Wong's career at Cimpress. Seeing the success of WIT and Wong's leadership skills, Charles Dale encouraged her to take on a management role, even though she had only been with the company for three years. With strong management training from the company, Wong took the opportunity and has loved serving as a mentor herself.

Ann Wong (B.S. '12)

Wong is currently a lead software engineer on the Design Platform team at Vistaprint, working on the backend that powers the interfaces customers use to design marketing materials. She remains a WIT leader, which now has nearly 200 participants. Wong and her partners had hoped to initiate WIT chapters in other Cimpress offices, and not long after they started, they learned a group in the Tunisia office had already read about WIT and had already started their own. WIT has also inspired Cimpress' LGBT community to form the Pride group. Wong has been thrilled to see the way her work is serving as a model for colleagues as they navigate their careers and to see what an impact she has had so early in her own.

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To get yours, go to:
cics.umass.edu/lifetime-email-forwarding

WE ♥ STARTUPS

CICS and Valley Venture Mentors co-hosted Startup Recruiting Night on April 11, 2017 at AmherstWorks, a new co-working space in downtown Amherst. The evening successfully connected CICS students with some of the Pioneer Valley's most innovative new businesses.