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Sophia Liu to receive Ph.D.

Sophia B. Liu, whose research focuses on uses of social media in times of crises and how concepts of history are evolving, will receive the ATLAS Ph.D. in Technology, Media and Society during graduation ceremonies on Thursday, May 5, in ATLAS 100.

Liu is the second student to be awarded the degree, which was created in October 2006. She successfully defended her dissertation, entitled “Grassroots Heritage: A Multi-Method Investigation of How Social Media Sustain the Living Heritage of Historic Crises,” on April 6. A video of her presentation is available at http://www.colorado.edu/atlas/liu/. Liu also plans to post her dissertation at http://www.sophiabliu.com

Interdisciplinary perspective

The dissertation investigates the socio-technical practices emerging from the use of social media and how these practices help to sustain the living heritage of historic crises.

“In the networked information age, it is critical that we examine socio-technical phenomena through an interdisciplinary perspective,” Liu said. “The impact of information and communication technology is affecting all parts of society that goes beyond traditional disciplinary borders. The ATLAS Ph.D. program fills an important gap by encouraging students to weave together knowledge from multiple disciplines of their own choosing.”

Project EPIC

Liu is a research assistant in Leysia Palen’s Connectivity Lab and is on the Project EPIC research team, housed in the Human-Centered Computing area of the department of Computer Science. Palen, a computer science professor, also served as Liu’s adviser.

“Dr. Liu’s work breaks new ground in how we think about heritage in the digital age,” Palen said. “Her accounts and insights on the use of social media to resurrect memories of prior disaster events are rich and moving, and will transform the way one thinks about the role social media plays in creation of collective memory.”

Liu has concentrated on research in the field of crisis informatics and examines how social media are used in times of crises, both during and after the emergency.

Researching crises

She has conducted crisis-related quick response research, spending a week on-site after the 2007 Virginia Tech school shooting, and on-line during that shooting, the 2010 Haiti and Chile earthquakes, the 2010 BP oil spill, and the 2010 Boulder fires. She also experienced first-hand how social media were used during a brush fire near her Boulder home in 2009. For her dissertation, Liu investigated the social media presence for 111 crisis events that occurred between 1960-2010.

NSF support

Palen’s Connectivity Lab and Project EPIC research team is a multi-disciplinary, multi-university, and multi-lingual research effort investigating the evolving role of information and communication technologies (ICT) in emergency and disaster situations, with a particular focus on information dissemination and the implications of ICT-supported public participation on informal and formal crisis response.

A 2006 National Science Foundation Early CAREER grant entitled “Data in Disaster” and a $2.8 million NSF grant in collaboration with the University of California, Irvine, entitled “PROJECT EPIC: Empowering the Public with Information in Crisis,” also support the researchers in Palen’s lab. Other ATLAS Ph.D. students working in the Connectivity Lab are Casey McTaggart, Kate Starbird and Sarah Vieweg and Joanne White.

Liu, who entered the ATLAS Ph.D. program when it started in 2006, was awarded a National Science Foundation graduate research fellowship for a proposal titled “Public Expressions: Peer-to-Peer Communications in Response to Crises.”

Will teach this summer

She received her bachelor’s degree in Social Science, specializing in research and analytical methods with a minor in Information and Computer Science and in Digital Arts at University of California at Irvine. She also studied abroad at the University of Sussex, England, taking geography and cultural studies courses.

She will be teaching an ATLAS course this summer entitled “Social Media for Social Good During Crises,” examining ways that social media are changing culture and society, including disasters and political crises like the Iran elections protests and Egypt protests.

Liu has been offered a postdoctoral position with Climate Communication directed by Susan Joy Hassol and will work on projects that strategically use social media to communicate information about climate change.
Alexandra Morgan, a graduate student in the ATLAS Master of Science in Information and Communication Technology for Development (MS-ICTD) program, is creating The Renaissance e-Institute, a pilot e-learning initiative that aims to provide easily-accessible technology-supported vocational education opportunities to Haiti’s rural population.

In February and March, Morgan traveled to Haiti to gauge the need, interest and feasibility of the concept. She met with leaders in education, technology and youth development—including the Ministry of Education and a Haitian software developer honored at the 2010 Grace Hopper Celebration—from which she gleaned the training needs and determined that Renaissance should shift from an urban focus to a rural one.

Morgan recently was awarded the University of Colorado Beverly Sears Graduate Student Grant Award, which she will use to travel to Haiti this summer to conduct research on sustainable agricultural practices, businesses and markets; technologies that can capture and disseminate a sustainable agriculture curriculum; and forge partnerships.

The Renaissance e-Institute is gaining the attention of Haiti’s Diaspora, business and development communities.
Heather Underwood, an ATLAS Ph.D. student, attended the Computer Research Association’s Committee on the Status of Women in Computing Research (CRA-W) cohort workshop for women in April in Boston. More than 300 women attended the workshop, which brought together masters and Ph.D. students for two days to teach and learn practical skills, discuss hard-to-talk-about issues concerning advisers and working in a male-dominated field, and create a supportive atmosphere for networking and collaboration.

ATLAS master’s program director Revi Sterling was invited to speak at the University of California at Irving and Michigan State University as part of information and communication technology speakers series at both institutions. She talked about recent work on the ethics of community participatory fieldwork.

Sterling also received a $1,500 Dorothy Martin Faculty Award from the University of Colorado. “We were very impressed with your consistent and exceptional contributions to the women of the University of Colorado and beyond,” the awards committee noted. “You are a creative force in your field and have made a deep impression on behalf of the causes with which you identify.”

JoAnne White, a Ph.D. student, is researching crisis informatics and how people use social media in times of disaster as a research assistant with Project Epic, which is housed in the Human-Centered Computing area of the Computer Science department and is run by computer science professor Leslyia Palen. She co-authored a chapter on Social Media Literacy in the book Educating Educators with Social Media, and is working on a co-authored paper looking at how people used Twitter to convey information about medical needs and help during the Haiti earthquake disaster. She also is working with ATLAS Ph.D. colleagues Meg Ambrose and Heather Underwood to submit a workshop proposal to the Grace Hopper Conference.

Ph.D. student Edwige Simon is investigating the impact of online teaching on the professional identity of teachers who transitioned to the online classroom and the role played by current and emerging technology in this process. She is looking at virtual worlds, telepresence, gaming and social media.

Sara Viewig’s Ph.D. dissertation research focuses on automatically identifying and categorizing tweets that contribute to situational awareness during mass emergency. This process involves a macro-level, behavioral analysis of the information communicated during six different mass emergency events, as well as a micro-level analysis that identifies how different types of information are linguistically constructed. The list of her publications is at: http://www.sarahvieweg.com/publications.html.

Leslie Dodson, a Ph.D. student, is working on a meta-analysis of information and communications technologies cases that will be the basis for two papers she is co-authoring with Revi Sterling for submission to the 2012 ICTD conference. She also applied to present a poster and co-led a panel session at this year’s Grace Hopper Women in Computing Conference. In addition, a paper she co-authored with Sterling for the IDIA (International Development Informatics Association) conference in Cape Town, South Africa, has been selected for consideration for the special issue of the Electronic Journal of Information Systems in Developing Countries. That paper is titled “Ethics of Participation: Research or Reporting?”

Kara Behnke’s Ph.D. research involves designing and developing effective games and practices that facilitate new modes of communication, cooperation and collaboration between multinational peoples in both Eastern and Western societies. Bridging this cultural gap through games, she notes, may provide significant potential to collaboratively understand and develop more effective solutions for real-world social needs.

Sarah Hug of the ATLAS Assessment and Research Center taught two qualitative research methods workshops in Revi Sterling’s Fieldwork Methods for ICTD Practitioners. In March, she spoke with computer science educators at SIGCSE about the benefits of peer-led team learning, an educational initiative that supports undergraduates who lead their peers in course-related activities. She also discussed the National Science Foundation’s GK12 program with evaluators, graduate students, and program PIs involved in K12-university partnerships at the annual GK12 conference in Washington, DC. She also went to Puerto Rico to evaluate the 2011 CAHSI meeting, a group that supports Hispanics’ advancement in computing fields.

Tim Weston of the ATLAS Assessment and Research Center is co-author on a forthcoming article in the ACM Special Issue on Speech and Language Processing of Children’s Speech for Child-machine Interaction Applications. The article, entitled “My Science Tutor: A Conversational Multi-Media Virtual Tutor for Elementary School Science,” describes the preliminary assessment of voice-recognition tutors used to teach science to elementary school students.
Clayton Lewis, a CU computer science professor and ATLAS Board member, has received the prestigious Social Impact Award from the Association for Computing Machinery (ACM) Special Interest Group on Computer Human Interaction (SIGCHI).

The award is given to individuals who promote the application of human-computer interaction (HCI) research to pressing social needs.

“This is a great honor bestowed upon CableLabs by the Academy,” said CableLabs president and CEO Paul Liao. “Beginning with the leadership of (former CableLabs CEO and current ATLAS Board member) Dick Green, CableLabs has worked very hard to help cable operators become broadband leaders by establishing this standards-based, world-class technology.”

CableLabs was honored for its development work on data over cable service and broadband video. This technology enables cable operators to bond multiple cable channels such that hundreds of megabits per second of data may be delivered to consumers. The technology has been deployed by cable operators around the world.

Kevin McElhinney (above left, and at right on the right), a student in the ATLAS master’s degree in Information and Communication Technologies for Development program, and Mahmoud Al Juhani (at left on the left), a CU telecommunications program student, used their spring break to deploy a closed Wi-Fi network to connect local markets to a community radio station in rural Owerri State, Nigeria.

Their work is an extension of the Ph.D. work developed by Revi Sterling, who currently is director of the ATLAS master’s program. (See Boulder Camera newspaper article at http://bit.ly/lyxS5g.)

Leslie Dodson (above), an ATLAS Ph.D. student with international television reporting experience, hosted the Rocky Mountain PBS documentary “Green Up Colorado,” which aired April 21.

The program presented an unusual behind-the-scenes look at Colorado’s local food movement, alternative energy projects and a range of recycling and green jobs, through the eyes of a diverse cross-section of artists, activists and social entrepreneurs. Excerpts of the show are available online at http://www.rmpbs.org/greenup/.

Dodson has worked as a correspondent for CNBC, MSNBC, NBC WeatherPlus, Reuters Financial Television and NHK Japan based in London, New York, Tokyo and Denver.

Doug Price, an ATLAS Advisor Board member, is president and CEO of Rocky Mountain PBS.

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Lewis also is scientist in residence at the Coleman Institute for Cognitive Disabilities at CU. He has had a strong influence on HCI with regard to designing for people with cognitive, language and learning disabilities. He has made designers and developers of accessible technologies aware of these groups, where previously they had been left out. He was elected to the CHI Academy in 2009.
A new approach to social media called “Tweak the Tweet,” conceived by CU-Boulder graduate student Kate Starbird and deployed by members of CU’s Project EPIC research group and colleagues around the nation, helped Haiti relief efforts by providing standardized syntax for Twitter communications.

Through consistent use of specially placed keywords, or “hashtags,” in Twitter posts to communicate critical information such as location, status, and road conditions, the “Tweak the Tweet” approach made information computationally easier to extract and collate.

“Project EPIC has done extensive research on the use of Twitter and other social media during disasters,” said Starbird, a National Science Foundation graduate fellow who is pursuing her doctorate in technology, media, and society in CU’s ATLAS program. “A slight change to current Twitter behavior allows the platform to be used as a broad-reaching crisis communication tool for anyone with access.”

Starbird conceived of the “Tweak the Tweet” idea with Jeannie Stamberger of Mountain View, Calif., at a national hacker competition in 2009.

A group of eight CU-Boulder students and professors worked alongside dozens of colleagues nationwide to develop and diffuse the syntax across the Twitter community immediately following the Haiti earthquake. The group members have tweaked hundreds of help messages on Twitter into the standardized syntax to fuel adoption by others and have built a bilingual instructional Web site. Starbird said the project has been a way for computer scientists, who would otherwise feel helpless, to contribute to relief efforts.

EDITOR’S NOTE: This article appeared in the premiere edition (Winter 2011) of the CU publication Colorado.
Speakers explore diverse topics

Experts from a variety of backgrounds presented research on a broad set of topics during the ATLAS Speaker Series this spring semester.

The Speaker Series is made possible by a generous donation by Idit Harel Caperton and Anat Harel. The events are free and open to the public.

Here is a summary of topics (the numbers correspond to the clockwise photos at right):

1. **Nadine Dabby** of the California Institute of Technology gave a presentation entitled “Building a Molecular Robotics Tool Kit” that explored recent experimental work programming the active self-assembly of molecules using DNA on March 30. A video of her presentation is at [http://www.colorado.edu/atlas/dabby/](http://www.colorado.edu/atlas/dabby/).

2. **Ian Bogost**, an award-winning videogame designer and media philosopher who is an associate professor and director of the digital media graduate program at the Georgia Institute of Technology, talked about video games as an expressive medium on Feb. 17.


4. **Amy Sliva**, a University of Maryland Institute Advanced Computer Studies, Laboratory for Computational Cultural Dynamics, talked about how artificial intelligence is used by national security researchers to analyze terrorist groups and global conflicts on Jan. 31.

5. **Margaret Dickey-Kurdziolek**, a computer science Ph.D. student with Virginia Tech, spoke about the interactions students and teachers have with technology and each other, and how these interactions can help developers create better learning technologies, on April 13. A video of her presentation is at [http://www.colorado.edu/atlas/speakers/kurdziolek.html](http://www.colorado.edu/atlas/speakers/kurdziolek.html).

6. **Catherine Havasi**, a researcher in artificial intelligence and computational linguistics at the MIT Media Lab, gave a presentation entitled “Digital Intuition: Understanding the World Using Common Sense” on Feb. 21. Her work is part of the Open Mind Common Sense (OMCS) project, which collects and studies concepts of common sense from the Internet. The collected information is converted, using automatic Natural Language Processing (NLP) techniques, to a semantic network called ConceptNet.
Joel Swanson, director of the Technology, Arts and Media program, has been awarded a nearly $3,000 grant through the University of Colorado Graduate Committee on the Arts and Humanities for an artwork that will illustrate Sol Lewitt’s essay, “Statements on Conceptual Art.”

“This essay holds particular value for those artists who work within the digital arts, where the ideas and concepts behind art-making take precedence over tangible, physical art-objects,” Swanson wrote in the grant proposal.

Swanson plans to build physical representations of the essays by building wooden structures that mimic diagramming the sentences in the essay.

The project will be displayed, along with the larger body of work, at an upcoming solo exhibition entitled “Formalisms” at RedLine Art Space in Denver (http://redlineart.org), where Swanson is an artist in residence.

Final deadline nears for applications to Boulder Digital Works

Applications to the 60-week Boulder Digital Works (BDW) graduate certificate program in digital arts and sciences are way up for the fall semester; the final deadline to apply is June 1.

BDW, which became part of ATLAS in January, plans to admit 40 students to the program. BDW offers the 60-week multidisciplinary, project-based educational certificate program to provide skills needed by employees and entrepreneurs in the digital communication fields. It also offers intensive immersion programs in digital fluency for working professionals, and other programs and workshops.

It recently offered a workshop from April 28-29 entitled “Making Digital Work 4,” designed for people working in client and agency organizations. More information about BDW and its programs is at http://bdw.colorado.edu.
Student Showcase

Capstone projects on display in ATLAS

(More projects on Back Page)

“POST HUMAN” Brittany Ansay’s mixed media installation posits a plugged-in post-human existence personified by “Rose,” who projects information on various screens.

“THE LUNGS OF OUR LAND” Anthropology major Chris Hurlbert has studied many cultures, and he believes that people in the U.S. have become separate from our natural world.

“100 THINGS THAT INSPIRE ME” Maggie Schoonmaker, a journalism major, explores typography and the interplay of words as they move in space in this mobile.

“LIVING ROOM (STOP MOTION)” Advertising major Kali Adams explores the distinction between perception and reality.

“ARE THESE THEIR PRIORITIES OR OURS?” Advertising major Cassi Cusman graphically illustrates that efforts to help Africa technologically ignore basic needs such as clean water.
“SEPTEMBER SIXTH” A MEMOIR OF FOURMILE FIRE: CU music graduate Nathan Wheeler created a musical/theatrical memoir in response to the devastation of the Sept. 6, 2010, Fourmile Canyon fire in Boulder. The house he grew up in, built by his grandfather, was destroyed in the fire. The January Black Box production included objects that were melted during the fire (above), as well as photos of the fire’s aftermath. (See the Camera newspaper article at http://www.dailycamera.com/fourmile-canyon-fire/ci_17221453, and the ATLAS blog at http://cuatlas.blogspot.com/2011/01/performance-memoir-of-four-mile-fire.html.)

“AND THEY LYNCHED HIM ON A TREE”: A collaboration between CU’s College of Music and the Department of Theater and Dance, the powerful February production was based on a landmark 1939 work by black American composer William Grant Still and white poet Katherine Garrison Chapin.
LAPTOP ORCHESTRA: The Boulder Laptop Orchestra (BLOrk) premiered new works by local composer/performers John Drumheller, Hunter Ewen, Darwin Grosse, John Gunther, Cole Ingraham, EJ Posselius and others in a Black Box performance in February.

MEDIA ENSEMBLE: Amherst musician Tim Eriksen (at microphone) and the Batteries Die Media Ensemble perform experimental rock in March in the Black Box. Michael Theodore, director for the ATLAS Center for Media, Arts and Performance, is second from left on guitar.
“OEDIPUS COMPLEXLY”:
The award winning HoME Theatre Company of Prague collaborated with CU theater professor Chip Persons (at right and in the background projection) to present the American premiere of the production “Oedipus (complexly)” in March in the Black Box. The ancient Greek, patricidal, incestuous story of Thebe’s infamous King Oedipus was told with a twist, involving the audience in the story directly. The production also explored the potential for alternative endings.

“THREE VIGNETTES OF JOB”: Anthony Green (conducting in top photo, and in middle above), a graduate student at CU’s College of Music, presented “Three Vignettes of Job,” a multimedia production based on the Book of Job, in April in the Black Box. The performance included live music, dance, theater and film.
Carnivals and Snowstorms

This interdisciplinary theater production explored the nature of dreams, memory and the afterlife during April performances in the Black Box. The production immersed the audience in video and graphics of another time and place, with a set derived from vintage carnival booths, the elegance of 1930s-inspired costumes and retro-inspired choreography.
INTERDISCIPLINARY COURSES:

Film Studies professor Mark McCoin and Art and Art History professor Mark Amerika collaborated and combined two separate courses at the end of the semester and the students showcased their projects in the Black Box. Amerika’s course was entitled “Remix Culture,” and McCoin’s course was entitled “Digital Art 2.”
NCWIT presents Aspirations in Computing awards

The National Center for Women and Information Technology (NCWIT) in March presented its national award for Aspirations in Computing to 35 young women at the headquarters of Bank of America, which sponsors the awards, in Charlotte, N.C.

The award recognizes young women at the high school level for their participation in technology and their plans for a tech-related career.

NCWIT also has expanded the award to the affiliate level and made those awards and runners-up awards in Ohio, Indiana, Puerto Rico, Texas, Massachusetts, Oregon, California, Arkansas, Florida, Georgia and New Mexico.

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Each local affiliate committee includes representatives of K-12 organizations, colleges and universities and local employers. The committee makeup helps the women gain direct contact with clubs and organizations that offer K-12 programs in computing, faculty at the schools they might attend, and local companies that offer internships and jobs.

More than 20 NCWIT member universities are providing scholarships to Aspirations award winners, and NCWIT members Motorola, Google and Microsoft have provided support to grow the local affiliate program.

Google this year also recognized educators who had endorsed a young woman for the award. Google provides funds for NCWIT to send letters of thanks and an Amazon gift card to the educators.

NCWIT cites innovator

NCWIT has presented its Symons Innovator Award to Audrey MacLean, an associate professor at Stanford.

The award honors women who have built and funded an information technology business.

MacLean is founder of Network Equipment Technologies, and Adaptive, is executive chair of Coraid and is a venture capital adviser.

MTV Networks is hosting a celebration to honor MacLean following the NCWIT May Summit in New York City.

CU group gets award

The National Society of Black Engineers at the University of Colorado and the Association of Computing Machinery for Women at the Colorado School of Mines have received $500 each through the National Center for Women and Information Technology (NCWIT) Academic Alliance Student Seed Fund.

The award, given through a partnership with Return Path, is given to student-run programs and initiatives that promote increased participation of women in computing and information technology programs.

Sara Preston is ATLAS Award recipient

Sara Preston, an ATLAS accountant, is the recipient of the ATLAS Award, an annual ATLAS recognition given “to the person who shoulders a heavy burden for ATLAS.”

Preston, who joined ATLAS in July 2010, has been overwhelmingly helpful with new expense reporting requirements and has taken on large new responsibilities as the Boulder Digital Works moved into ATLAS.

Preston, who has a communications degree from CU, also worked at Sun Microsystems for nine years and has experience in several entrepreneurial ventures.

Stubbs is ATLAS Titan of Quarter

Vickie Stubbs, who is ATLAS assistant to the director, assistant building processor and assistant event coordinator and whose duties have expanded with the addition of Boulder Digital Works into ATLAS, is the recipient of the ATLAS Titan of the Quarter award.

The award is given in recognition of outstanding efforts on behalf of ATLAS.

A native of Georgia and mother of three, Stubbs came to Colorado to study Japanese, German and political science at CU.

She has a love for languages and triathlons. In the photo at right, she is finishing a triathlon in Canada last summer.

She previously worked as events coordinator in the BOLD Center, which is a K-12 math and science outreach program that also supports under-represented populations in the CU College of Engineering.

VICKIE STUBBS
The Alliance for Technology, Learning and Society (ATLAS) at the University of Colorado at Boulder was established in 1997 as a campus-wide interdisciplinary initiative.

ATLAS broadens the benefits of the networked information age by providing multidisciplinary curricular, research and outreach programs that integrate information and communication technology with a wide variety of disciplines and people, both inside and outside the university.

More information about ATLAS and its initiatives can be found at http://atlas.colorado.edu.

To contact ATLAS, call 303-735-4577 or e-mail cuatlas@colorado.edu.

Follow ATLAS on the Web at http://atlas.colorado.edu, and on:

University of Colorado Boulder