Dear CS alumni, friends, and colleagues:

I just ran into an old student, an alumnus, in our local town library. We live in the same town. We run into each other once in a while. The last time I had seen him was in 2008, when his daughter and my son graduated from the town high school.

After we exchanged the usual pleasantaries we ended up talking about our children. He told me his youngest daughter is interested in Computer Science, as are his other children, if my memory doesn’t fail me. I asked if he was aware of the major transformation that has taken place on campus since his graduation. He was not. I asked if he’d be interested in a visit, a walk around. He said he was. I gave him my card and invited him to contact me, to come over. I promised I’d show him around.

Imagine the surprise that’s waiting for him. So many more students on campus (about 17,000, compared to 10,000, maybe 12,000 back then). And they, on the average, are coming with higher SAT scores, higher high school grades, and just about any other indicator. Ten new buildings. And the campus—when I first arrived in Lowell in 1989 the one thing that bothered me more than anything else was the lack of a real campus life. At my previous place, the University of Pennsylvania, I was used to getting out on a sunny afternoon to the college green and running into friends, colleagues, and other. There was nothing like that at Lowell in 1989, or 1990, or 2006, for that matter. But things are different today. I joke that we are on a transition from “The University of Massachusetts [at] Lowell” to “The City of Lowell at the University of Massachusetts.” But what it means for me is that, any day, when my brain is “pickled,” I can walk right out of my office and I am guaranteed to run into students, colleagues, or friends. (And if I wear one of my bow ties, I know someone—usually a student—who will stop her conversation with a bunch of friends to scream “great bow tie” and then continue whatever she was in the middle of before that.)

Our Computer Science Department is enjoying every little bit of that boom. No, we do not have ten new buildings. Not even one. (Maybe we should. But that’s another discussion, for another day.) But our enrollments are “rolling”; our students are coming in droves, and with much better credentials than in previous years. (Fall 2016 Freshman class is expected to be 280 people strong. That’s almost as many undergraduates as we had in all fours years back in 1989 when I arrived, and for quite a number of years after!)

I am not surprised. On the one hand, there is very little that one can do today without computers, without computer science. Surely, there is no science without us. No finance—try to turn off the computers at your bank. Young people (or is it their parents?) are paying attention, recognizing that a career in Computer Science is one of the few guaranteed careers in the foreseeable future. And word has gotten around that ours is a very strong program, that our graduates get snapped up for the ever-growing supply of jobs—very well-paying jobs. Many recruiters have told me that we are the only place they come back to recruit (quoting some big names—which I won’t repeat here—that they are NOT going to go back to recruit from). Combine this with our strong affordability and you’ve got a winning formula.

Our faculty members have substantially increased research funding over the last few years to around $4 million per year. Research funding offers more opportunities for students to be involved in state-of-the-art research, and to be funded while they are here.

We are very excited about the future. We are looking forward to welcoming new faculty members. These “young bloods” bring excitement and energy. Not that I would write off the “old timers” (I am one of them!) but the young additions always energize us onward and upward.

Imagine how all of these great things are impacting our campus, our Department. Not that “your grandpa’s place” here was that bad, it was great even then, but it is much greater today—and it’s going to be even greater tomorrow.

Or, better, instead of imagining, come see it with your own eyes. I’d like to extend to each and every one of you the same invitation I extended to my former student. Contact me, come over to visit. I’ll be happy to show you around. I promise you will not be disappointed.

I look forward to hearing from you.

All the best for a great summer, and beyond.

Haim Levkowitz, Ph.D.
Chair and Associate Professor
haim@cs.uml.edu
978-934-3654
Yu Cao (Co-PI), ECE Prof. Vinod Vokkarane (PI), and Prof. Yan Luo (Co-PI) have been awarded a $1M NSF grant to support big data networking and analysts for digital health research: “Network Cyberinfrastructure (CI) for Biomedical Informatics Innovation.”

Yu Cao, Xinwen Fu (Co-PI), and ECE Prof. Yan Luo (PI) have been awarded a $499K NSF grant, “Secure Data Architecture: STREAMS: Secure Transport and Research Architecture for Monitoring Stroke Recovery.” The objective is to develop secure and reliable networking and big data analytics for post-stroke patient monitoring.

Yu Cao (PI), Benyuan Liu (PI), and Health Science Prof. Maria Brunette (PI) have been awarded a $1.3M NSF/NIH Smart and Connected Health (SCH) grant, “A Sociotechnical Systems approach for Improving Tuberculosis Diagnostics Using Mobile Health Technologies.” The goal of this is to develop new deep learning and mobile health techniques for improving TB diagnosis.

Yu Cao (PI), together researchers from UMass Lowell (Benyuan Liu and Yan Luo), UMass Medical School, and UMass Boston, has been awarded $125,000 by UMass President Office’s Science and Technology Initiatives Fund (S&T) to develop and establish a center for digital health (CDH). The main objective of CDH is to undertake research, evaluate and validate tools, promote partnerships with industry, generate technology transfer and promote education for the digital health workforce.

Guanling Chen gave a tutorial “Hacking Personal Health Behaviors” at the IEEE on Ubiquitous Intelligence and Computing (UIC), Beijing, China, August 2015.

Guanling Chen (Co-PI) received a seed grant from the UMass College of Health Science for $8,000 with Yuan Zhang (PI): “Using Smartwatch to Investigate Health Behaviors of Nightshift Nurses.”

Tingjian Ge was invited to give a Distinguished Young Lecturer (DYL) talk at Web-Age Information Management (WAIM 2016). The purposes of the DYL series are: (1) to promote and involve active young researchers who have made significant progress in establishing themselves with highly visible and influential achievements in the web data management community, by sharing their experiences and lessons; (2) to set a model example of making good technical presentations for student audiences; (3) to provide a venue for young researchers to interact and mingle with students, thereby attracting good students for possible, subsequent collaborative research.

Sirong Lin can’t believe that she finished her first year of teaching at UML, and her first year of teaching ever! She loves the fact that she taught more than three hundred undergraduate students. She loved talking to and helping all of those students. She looks forward to a wonderful second year.

Benyuan Liu will serve as co-chair of IEEE International Performance Computing and Communications Conference 2016.

In July 2016, Fred Martin was elected to serve as chair of the board of the Computer Science Teachers Association (CSTA), for a two-year term commencing in 2017. A subsidiary of the ACM, CSTA (csteachers.org) is membership organization serving over 23,000 K-12 computer science teachers worldwide.

Jay McCarthy had a fun first-year at UML, returning to Lowell after almost ten years. During the year, he had the opportunity to teach alongside and learn from Professor Moloney in the systems sequence, enjoy participating in faculty hiring, get hooked on the Soylent meal-replacement drink, give a TEDx talk, and try out local lunch spots with his kids on their half-days.

Jay McCarthy received a grant from the National Science Foundation for $399,994: “Automated Protocol Design and Refinement.”

Anna Rumshisky received a grant from Philips Healthcare for $167,896: “NLP-driven Predictive Models for Patient Deterioration and Therapy Response.”

Anna Rumshisky received a grant from the National Institutes of Health for $367,638: “Natural language processing for characterizing psychopathology.”

Anna Rumshisky received a grant from the Army Research Office Core Program for $377,900: “Detecting civil conflict and information biases in polarized environments in social media.”

Kate Saenko’s team, led by her Ph.D. student Vasili Ramanishka won a top prize in the ACM and Microsoft Multimedia Grand Challenge.
Kate Saenko led the You Code Girl summer camp at the Lowell Public Schools in July.

Holly Yanco, Bryan Buchholz, Pei-Chun Kao, Yi Ning Wu, and Haim Levkowitz received a grant from UMass President’s Office Science and Technology Fund for $123,000: “NE2R2VE Center: Designing Better Robot Systems for People.”

Holly Yanco was named University Professor this year. She was on sabbatical during the spring semester, during which she had the opportunity to visit colleagues in New Zealand, South Korea, and the Netherlands. She also attended a workshop organized by McGill University in Barbados that focused on testing robots on and under the water. Within the US, her trips included a training session at NASA’s Johnson Space Center in Houston, TX and a visit to a puppetry studio outside Portland, OR.

Holly Yanco received a grant from the Defense Advanced Research Projects Agency (DARPA) for $1,641,126: “Test and Evaluation Services for the Fast Lightweight Autonomy Program.”

Holly Yanco (Co-PI) and Taskin Padir (PI) of Northeastern University received a grant from NASA for $250,000 (and a Valkyrie humanoid robot valued at $2,000,000): “Accessible Testing on Humanoid-Robot-R5 and Evaluation of NASA Administered (ATHENA) Space Robotics Challenge Tasks.”

Holly Yanco (PI) and Aaron Steinfeld (Co-PI) of Carnegie Mellon University received a grant from the National Science Foundation for $184,656: “EAGER: Collaborative Research: Exploring Models for Conveying Imminent Robot Failures to Allow for Human Intervention.”

Karen Daniels’ Retirement

Prof. Karen Daniels recently retired from the Computer Science department after almost 15 years of service. At her retirement dinner she expressed her deep gratitude to the administration, her colleagues, the staff, and the students for making UMass Lowell such a supportive and enriching environment in which to teach and do research. Her affiliation with UMass Lowell actually started back when the school was the University of Lowell and she was a Master’s student doing work in computer graphics under the guidance of Prof. Georges Grinstein. Fond memories of the faculty and students brought her back as a professor. She most often taught the core undergraduate and graduate algorithms class as well as undergraduate foundations. Specialty classes included graduate computational geometry and geometric modeling.

Her research often followed a theme of applied algorithms and computational geometry, but also included pattern recognition, applied topology, bioinformatics, optimization and, more recently, visualization. Some of her research was supported by NSF and DARPA. All the research projects involved students of all levels ranging from high school to Ph.D. Some led to exciting trips with students to places like Australia and the beautiful city of Banff in Canada. Early in her UMass Lowell faculty career she was a co-principal investigator on an NSF grant to guide and mentor students with financial need through research projects. This involved 82 undergraduate and graduate students, each matched with one or more of 22 faculty members drawn from the Electrical and Computer Engineering, Computer Science, Mathematics, Chemistry, Biology and Plastics Engineering departments. Prof. Daniels personally mentored ten students under this program.

Prof. Daniels continues to be involved with the University and the CS department in her retirement by helping to guide Ph.D. students, doing joint visualization research, and collaborative research grant proposal submission with colleagues in the Electrical and Computer Engineering Department. She plans to become involved in volunteer work in her local middle or high schools. Much of her focus during retirement is on family activities with her husband, two daughters, three grandchildren and a large extended family spanning many parts of the USA and two continents. To blend technical work with family, she plans to finally read each of her daughters’ dissertations from cover to cover – but as a mother, not as a professor!

As Prof. Daniels enters the next phase of her career, many things in the Department, College, and the University are also in flux. We have a new Chancellor, new Provost and a new Dean on the way. A new Department Chair and new faculty will be welcomed in as others leave. Student enrollments are increasing. In this time of change, she is confident that the Department, College, and University will continue to be a wonderful place to teach, learn and do research. She feels privileged to be part of this community and looks forward to what the future will bring.
Thank You to Students for My Academic Career
Jesse M. Heines, Professor Emeritus

My 31\frac{1}{2} years as a college professor are of course filled with memories both fond and, well, not so fond. Like any job – or any relationship, for that matter – there have been ups and downs. But as Gladys Knight and the Pips sing in You’re the Best Thing That Ever Happened to Me: “Fate’s been kind, the downs have been few. I guess you could say that I’ve been lucky. Well, I guess you could say that it’s all because of you.”

“You,” for me, is plural: it’s the students who have been in my classes (about 4,000 by my reckoning!), who have visited me for advising, or who have simply come to my office to talk. Some of you may think that I have given you something valuable of my knowledge, experience, or judgment, but I assure you that you have given me far more. Another song, Getting to Know You from “The King and I” by Rodgers & Hammerstein, expresses this perfectly: “It’s a very ancient saying, but a true and honest thought: That if you become a teacher, by your pupils you’ll be taught.”

I thank you students for enriching my life both personally and professionally. There was no World Wide Web back in 1985 when I began teaching here, nor even in the early 1990s when I began teaching GUI programming. Students showed me things, taught me tricks, and pointed me toward technologies I had to learn to keep teaching relevant GUI programming techniques right through my last semester, when we tackled the MEAN stack for the very first time.

I have no great words of wisdom to pass on as a last formal act of teaching. Instead, I encourage you to view what I consider to be the finest Commencement address I have ever heard, delivered right here at UMass Lowell in 2007. In that address U.S. Representative John Lewis of Georgia spoke about building “the beloved community.” You can find a video of this address posted at [https://uml.ensemblevideo.com/playlist/jheines](https://uml.ensemblevideo.com/playlist/jheines) where it is entitled “Commencement 2007 - Lewis.” The video image is small and grainy, but the audio is crystal clear.

Rep. Lewis’s words may be even more relevant today than they were then. Our current climate of political vitriol is the antithesis of how Lewis defined beloved: “not hateful, not violent, not uncaring, [and] not unkind.” It is also the antithesis of community, defined as: “not separated, not polarized, [and] not locked in struggle.” Most importantly, Lewis offers the only solution: to effect change we must all take the responsibility to do so ourselves. We have to “find a way to get in the way” of the people and situations that divide us.

Quoting the Bill Parrish character at the end of the film Meet Joe Black, I wish you all “a life as lucky [and fulfilling] as mine” has been. I thank you all sincerely for being significant contributors to that fulfillment.

Selected Student Researcher Graduations


**Willie Boag**, graduating senior from the Text Machine Lab, has received an NSF Graduate Research Fellowship and has been admitted to a Ph.D. program at MIT in Electrical Engineering and Computer Science. Advisor: Anna Rumshisky.


**Zheng Li**, Ph.D. Graduated in August 2015 and has been working as a Member of Technical Staff at Oracle in Nashua, NH on DBMS development. Advisor: Tingjian Ge.


**Baochen Sun**, Ph.D. Dissertation Title: “Correlation Alignment for Domain Adaptation.” Advisor: Kate Saenko.


Brianna Gainley

In last year’s newsletter, we carried Bri’s story about “Fighting Back from Bone Cancer.”

Brianna Theresa Gainley of Burlington, at the age of 24, passed away on Saturday, April 23, 2016, after a valiant five year battle against osteosarcoma. Brianna was born in Winchester and was a lifelong resident of Burlington. She was a 2010 graduate of Burlington High School, and after high school, Brianna attended the University of Massachusetts on a full Commonwealth Scholarship. It was in her freshman year of college when Brianna’s symptoms first appeared. A sharp pain in her right knee was eventually diagnosed as osteosarcoma. As the cancer progressed and Brianna was faced with many challenges, she leveraged her inner strength to remain positive and overcome the obstacles she was confronted with. After Brianna had to have her leg amputated early last year, she learned to walk again with a prosthetic leg and finished the ¼ mile “survivor’s lap” at last summer’s Relay for Life at Burlington High School.

Throughout her ordeal, Brianna continued to pursue her college education and enjoy life. She had a very creative mind and enjoyed painting, sketching, music, reading, arts and crafts, video games, anime, computers, and programming. Brianna loved being outdoors, and enjoyed bicycling, being on the water, and boating on the Merrimack River. She was a member of a robotics team at UMass Lowell that won an award at a national NASA robotics competition in Houston. After Brianna received her terminal diagnosis several weeks ago, UML held a special graduation ceremony where Brianna received her degree and was introduced as the first graduate of the Class of 2016.

Brianna had a special spirit that prevailed during her life. She didn’t let her illness define her, limit her, or keep her from accomplishing her goals. Brianna will be fondly remembered for many things, including her strength, perseverance, determination and courage. Although her life was much too short, Brianna lived life to the fullest during the short time that she had on earth. She made many friends, traveled, earned her college degree, found true love, and enriched the lives of everyone who knew her.

Brianna was the loving fiancée of Ryan Hart. She was the cherished and much loved daughter of Maureen (Duggan) and Frank Gainley, Jr. of Burlington. She was the older and loving sister of Tayla, Marlea, and Shaylinn Gainley all of Burlington. She was the granddaughter of Judy Gainley of Burlington, the late Frank Gainley, and the late Robert and Theresa Duggan. Brianna was the niece of Lisa and Tom Dimino of Peabody, Karen Duggan of Athol, Kevin and Joan Duggan of MS, and Shawn Duggan of CO. She was also survived by many friends, classmates, and colleagues.

In accordance with Brianna’s wishes, funeral services were held in private. In lieu of flowers, Brianna wanted to help others who have osteosarcoma and requested that donations in her memory be considered and made to: http://www.curesarcoma.org/in-memory-of-brianna-gainley

For an article about Brianna’s graduation ceremony, visit: https://www.uml.edu/News/stories/2016/Brianna-Gainley-Graduation.aspx
Selected Faculty and Student Publications


Chunyao Song, Tingjian Ge, Cindy Chen, Jie Wang. Event Pattern Matching over Graph Streams. In the VLDB Endowment (PVldb journal), Volume 8, Issue 4, and International Conference on Very Large Data Bases (VLDB 2015), 2015.


Ke Huang, Xiang Ding, Jing Xu, Guanling Chen, and Wei Ding. Monitoring Sleep and Detecting Irregular Nights through Unconstrained Smartphone Sensing. International Conference on Ubiquitous Intelligence and Computing (UIC), 2015.


Zhen Ling, Junzhou Luo, Qi Chen, Qinggang Yue, Ming Yang, Wei Yu, Xinwen Fu. Secure Fingertip Mouse for Mobile Devices, in IEEE International Conference on Computer Communications (INFOCOM), 2016.


Lijian Wan and Tingjian Ge. Event Regularity and Irregularity in a Time Unit. IEEE International Conference on Data Engineering (ICDE 2016), 2016.


Steven Coughlin, Herpreet Thind, Benyuan Liu, Nicole Champagne, Molly Jacobs, Rachael I Massey. Smartphone Applications for Preventing Cancer through Educational and Behavioral Interventions: State of the Art and Remaining Challenges. JMIR mHealth and uHealth, 2016.


Lijun Ni, Diane Schilder, Mark Sherman, and Fred Martin. Computing with a community focus: outcomes from an app inventor summer camp for middle school students. Journal of Computing Sciences in Colleges, 31(6), 2016, p. 82–89.

Samantha Michalka, James Dalphond, and Fred Martin. Inquiry Learning with Data and Visualization in the STEM Classroom. Society for Information Technology & Teacher Education International Conference, 2016

Fred G. Martin Computational Thinking is a model-eliciting activity. CSTA Voice 12(1), March 2016, p. 8.


Willie Boag, Renan Campos, Kate Sansen, Anna Rumshisky. MUTT: Metric Unit TesTing for Language Generation Tasks. ACL 2016.


Abraham Shultz, Sangmook Lee, Thomas B. Shea, and Holly A. Yanco. Biological and Simulated Neuronal Networks


Center and Program News

Center for Cyber Forensics

The University of Massachusetts Lowell has been designated as a National Center of Academic Excellence in Cyber Defense Research (CAE-R).

We are happy to be able to meet the increasing demands of the program criteria and will serve the nation well in contributing to the protection of the National Information Infrastructure. The Presidents’ National Strategy to Secure Cyberspace, 14 February 2003 and the International Strategy for Cyberspace, May 2011, address the critical shortage of professionals with these skills and highlight the importance of higher education as a solution to defending America’s cyberspace.

NERVE Center

A collaborative team composed of Northeastern University (Taskin Padir and Robert Platt) and UMass Lowell (Holly Yanco) receive in May one of two humanoid robot awards from NASA, an R5 “Valkyrie” robot, building off of the teams’ work with humanoid robots at the DARPA (Defense Advanced Research Projects Agency) Robotics Challenge. “We look forward to hosting the 6 foot tall ‘Valkyrie,’ at UMass Lowell’s NERVE Center, as we work with our collaborators at Northeastern,” says Professor Yanco. The second award will go to MIT. Researchers at the NERVE Center will be developing a set of tasks and test methods, in addition to the extreme environments already created, for Valkyrie to experience in anticipation of the 2017 Space Robotics Challenge (SRC).

In other NERVE news, we turned the old F-15 hangar at Joint Base Cape Cod into a giant warehouse to test autonomous UAVs for DARPA’s Fast Lightweight Autonomy program.

Visit nerve.uml.edu for awesome videos about both of these items.

Text Machine Lab

Our lab will run an international competition on humor detection at the main venue for shared tasks on semantic evaluation for natural language processing (International Workshop on Semantic Evaluation, SemEval-2017). We will run Task 6: #HashtagWars: Learning a Sense of Humor

Our lab will also run a Clinical Natural Language Processing workshop in Osaka, Japan, focusing on automated understanding of clinical text to improve patient outcomes.

Undergraduate Program Update

By David Adams, Undergraduate Coordinator

This year we were very pleased to welcome a new lecturer to our first- and second-year teaching team: Dr. Sirong Lin. Dr. Lin received her graduate degrees from Virginia Tech studying parallel thinking pedagogy and worked in industry for a few years as a user-interaction designer and software engineer before turning to academia. She brings a deep passion for education and enjoys working with the students. The students in her classes have given her great reviews, and she is also contributing to the Department as Assistant Undergraduate Coordinator.

We added the Assistant Undergraduate Coordinator position to help manage the huge growth in incoming students over the last four years. That growth increased from 11% three years ago to a whopping 42% last year. We are on track for another 40% increase this year and will begin educating the largest incoming class in over twenty years.

We have additional new faculty joining us in the Fall 2016 semester, including Asst. Prof. Wenjin Zhou, who will be taking over the popular GUI Programming sequence from retiring Prof. Jesse Heines. A new project sequence in Mobile Computing and Security is also being added, to be taught by Assoc. Prof. Guanling Chen.

Our increased enrollment has also justified the addition of another lecturer and another tenure-track professor. We hope to have people on board to fill these positions to further address our increased teaching needs.

The Department will undergo ABET Accreditation review with a visit from the accreditation team in November of this year demonstrating the commitment of the department to continuous improvement and program excellence.
Learning with Purpose

A newsletter from the
Department of Computer Science
Univ. of Massachusetts Lowell
Olsen Hall, 198 Riverside Street
Lowell, MA 01854

Because of you, UMass Lowell students can achieve their dreams. Your contribution helps students acquire the knowledge and skills essential for their careers. Through your support, they graduate work ready, life ready, and world ready. Gifts to the Computer Science Department enable faculty and staff to enhance academic programming, keep equipment up-to-date, and fund research.

Yes, I would like to support UMass Lowell with a gift.

☐ $500  ☐ $250  ☐ $100  ☐ $50  ☐ Other

Please designate my gift to:

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