Dear Students, Alumni, Faculty, and Friends:

The CS Department has had another great year. The whole department continues to enjoy huge growth and renewal, teaming with exciting activities, and beaming with promise and optimism. I am thrilled to present to you the 2012 Newsletter of the Department of Computer Science and share with you some of the exciting news.

Our CS student populations and student quality have greatly increased. Our freshmen class size rose to 45 in Fall 2012 up from 25 freshmen in recent years. Our MS program size has doubled in less than two years, rising from 250 to 500 students, while maintaining the same high quality and reducing the acceptance rate.

At the Ph.D. level, the number of CS applications has risen from 77 in 2008 to 136 in 2012, and our admission rate has steadily decreased from 21% to just 10% -- one of the most selective in North America. All those figures are strong indications of the rising reputation of our programs and the rising quality of our students.

Equally exciting is the creation of another Master’s degree program. In order to better meet the pressing need for a 30-fold increase in the number of Cybersecurity professionals required to defend and protect the Cyber infrastructure of our nation and the world economy, the CS Department launched this Fall a new MS degree program in Cybersecurity in Computer Science, one of only a few such MS programs in the US. This program, already running, is expected to attract many more students in the next few years.

As you all know, we have been hiring new faculty at an enviable rate. In 2011-12, the SEAS Dean and the GW Administration encouraged us to pursue target-of-opportunity hiring to recruit stars in Computer Science. We were fortunate to recruit a world-renowned scholar in the area of Natural Language Processing (NLP) and the top expert in Arabic NLP, Dr. Mona Diab from Columbia University. Dr. Diab will be joining the Department this January, bringing with her a well-established research program, an impressive network of collaborations, and many large grants from NSF and DARPA. We welcome Dr. Diab to our Department!

Our faculty and students continue to excel and scale new heights. From prestigious awards, like the NSF CAREER Award won by Prof. Parmer and the Air Force Young Investigator Award won by Prof. Clarkson, to highly competitive research and scholarship grants, to winning student competitions and student achievement awards. The Newsletter is full of such accomplishments.

Our Alumni continue to be generous with their time and resources. I would like to single out here one act of generosity. Four years ago, our alumnus Dr. David Karlgaard and his wife, Mrs. Marilyn Karlgaard, endowed the CS Department with a $100K endowment for undergraduate scholarships. This year, the Karlgaards increased the endowment to one million dollars! The proceeds of this endowment will be large enough for a full-fledged undergraduate scholarship. We are deeply grateful to the Karlgaards for their generous support.

These are just a few highlights. I invite you to read the whole Newsletter to learn more about the many great happenings and accomplishments in the CS Department, and to continue to witness a department bursting with growth, renewal, and energy, and resolved to make a difference.

Sincerely,
Abdou Youssef

Prof. Abdou Youssef
Department Chairman

Sincerely,
Abdou Youssef
Department News

The CS Department has created a new graduate degree program in cybersecurity which will be launched Fall 2012 semester. The Master of Science in Cybersecurity in Computer Science was created to respond to the fast-growing need for technical cybersecurity experts nationally and internationally. It is the first such degree in Washington, DC, and one of only a few graduate degrees in cybersecurity in the nation. “D.C. is one of the largest and most vibrant high-tech areas in the United States and the world”, CS Chairman Abdou Youssef said. “Professionals are in need of cybersecurity expertise to advance their career and help the private sector and the government secure their assets and protect against cyber attacks.” GW is a federally-designated Center of Academic Excellence in information assurance education and research. Click here for more information about the Master of Science in Cybersecurity in Computer Science.

Since 2006, the Fiske Guide to Colleges has singled out the CS Department as one of the top 8 “Strongest Programs” at GW, and this year’s edition – 2012 Fiske Guide to Colleges, 28th edition – was no exception, listing Computer Science as one of the 8 strongest programs at GW alongside Astronomy, Biology, Chemistry, Finance, International Business, Psychology, and Media and Public Affairs. Also in the Guide, GW was again listed among the “Private Universities Strong in Engineering,” alongside many prestigious universities. The Fiske Guide to Colleges is a famous guidebook to colleges which many high school students and their parents consult when looking for colleges and universities.

Our facilities are an important and integral part of our Department. Recently we made many new equipment purchases and other upgrades for our CS labs. The Motion Capture and Analysis Laboratory (MOCHA) under the direction of Prof. James Hahn has been expanded and moved to a better space on campus. Its participants are Prof. Taeyoung Lee (Mechanical and Aerospace Engineering), Prof. John Philbeck (Psychology), Prof. Brian Richmond (Anthropology), and Prof. Gabe Sibley. New equipment has also been added to the computer science robotics research laboratory in Tompkins Hall which is under the direction of Prof. Evan Drumwright, Prof. Gabe Sibley, and Prof. Claire Monteleoni.

In January of this year we added a sixth cohort to The George Washington University Master’s
Degree and Graduate Certificate in Computer Science Program in partnership with Booz Allen Hamilton. In May 2012, we graduated our third class of cohort graduates. Last year the CS Department participated in multiple career development fairs located at the Booz Allen Hamilton facilities to connect with employees and introduce them to the opportunities offered by this partnership. CS also instituted last November the cohort newsletter which is distributed regularly throughout the year to Booz Allen Hamilton employees. This partnership, begun by the CS Department in 2007, continues to be a great success.

Faculty News

It was a banner year for our Faculty!

Prof. Nan Zhang and his doctoral student Zhuojie Zhou won the $25,000 top prize of the GW fourth annual Business Plan Competition. Their winning entry was selected by a panel of entrepreneurs, investors, venture capitalists, and GW alumni, and beat out 144 applicants representing all of GW’s schools.

Their winning entry also won the Plug and Play Tech Award, a three-month accelerator program plus travel expenses to the Plug and Play Tech Center in Silicon Valley. The value of the Plug and Play Award is approximately $11,000. Their winning entry was a search engine for analysts called WiseAgg. The engine, which works on a regular computer, uncovers analytics far beyond what a normal search engine can find, giving the user valuable “deep web” data. According to Zhuojie and Prof. Zhang, “WiseAgg is the Google for Analysts – for people who want not only individual web pages but also a birds-eye view of the entire deep web sphere.”

Prof. Gabriel Parmer won the GW SEAS Junior Teaching Award. Accepting the award at the 2012 SEAS Teaching and Research Awards celebration held April 12, Prof. Parmer spoke on his approach to keeping students actively engaged in learning. Prof. Parmer has also been recognized each of the three years he has been Assistant Professor at GW with the CS Teacher of the Year by the E-Council, an award that reflects the admiration of his students.
Prof. Parmer received the GW Chapter of the Association of Computing Machinery (ACM) 2011-2012 Teacher of the Year Award. Prof. Parmer also received this award last year.

Prof. Timothy Wood was one of two recipients of this year’s University of Massachusetts Amherst Computer Science Outstanding Dissertation Award. Prof. Wood’s doctoral thesis title is “Improving Data Center Resource Management Deployment, and Availability with Virtualization”.

Prof. Rahul Simha was one of five national finalists for the 2011 Undergraduate Computational Engineering and Sciences (UCES) Award. This award program which was created in 2005 to promote and enhance undergraduate education in computational engineering and science, is sponsored by the U.S Department of Energy and the Krell Institute. Prof. Simha was recognized for his course Continuous Algorithms which teaches core concepts in continuous mathematics using computation. Prof. Simha gave a plenary talk on this topic at the annual Supercomputing conference in Seattle, WA last November.

Last Fall Prof. Nan Zhang was one of three SEAS faculty selected for special recognition and reward for exceptional faculty performance as part of the Faculty Recognition Program created last year by SEAS Dean David Dolling. The exceptional performance could be in teaching, research, or service, or a combination thereof. Each award recipient received $7,500.

Our Faculty were recognized as leaders in their field and awarded grants for their research.

Toyota Motor Engineering and Manufacturing North America awarded Prof. Gabe Sibley a $121,000 grant to develop robust visual perception technology for autonomous vehicle navigation. Prof. Sibley: “GW’s Autonomous Robotics & Perception Laboratory is excited to engage in research with engineers at Toyota Technical Center to develop visual perception technology for on-road car navigation that will ultimately lead to the automation of our roadways.”

Prof. Sibley and the Autonomous Robotics & Perception Lab were awarded a grant of approximately $70,000.00 from the California Institute of Technology to develop navigation software and the visual perception algorithms for the Alpha Dog platform.
**Prof. Sibley** was awarded a subcontract dealing with Robust Multi-Frame Visual Pose Adjustment from the Jet Propulsion Laboratory.

**Prof. Xiuzhen Cheng and Prof. Hyeong-Ah Choi** received a 4-year, $680,000 National Science Foundation grant for their research project “NeTS: Medium: Collaborative Research: Integrated Dynamic Spectrum Access for Throughput, Delay, and Fairness Enhancement”. The project investigates the challenges of enhancing cognitive radio network throughput, delay, and fairness via integrated dynamic spectrum access.

**Prof. Parmer** was awarded the National Science Foundation Faculty Early Career Development (CAREER) grant. The award is worth $400,000 over five years and is awarded to junior faculty members who excel at both research and teaching. Prof. Parmer’s research proposal for the grant involves investigating how to make computer systems essentially self-repairing – able to recover from faults and resume predictable operation. He and his students have already begun developing a new operating system structure for real-time systems to prevent software faults from making embedded systems ranging from those controlling airplanes and cars to medical equipment from affecting the entire system, and enabling the system to reboot or rebuild the malfunctioning part without disrupting the rest. Prof. Parmer also gives lectures about computer programming to high school students at Edison Academy, part of the Fairfax County Public School system in Alexandria VA, and plans to use the CAREER grant to also expand his involvement with students there who are interested in advanced computing.

**Prof. Michael Clarkson** won the Air Force Office of Scientific Research’s Young Investigator Research Program (YIP) grant. The grant is for $855,000 over a 3 year period for his research proposal “Making Cybersecurity Quantifiable”. The proposal seeks to make it possible to quantify, and consequently to compare, the security of computing systems - instead of merely declaring a system secure or not, enabling a measurement of security. The research focuses on constructing mathematical models and metrics for cybersecurity in three important areas: privacy, access control, and availability. The objective of YIP is to foster creative basic research in science and engineering, enhance early career development of outstanding young investigators, and increase opportunities for the young investigators to recognize the Air Force mission and the related challenges in science and engineering. Prof. Clarkson’s winning proposal was one of 48 selected out of a pool of over 200.
GW has been awarded $87,491 to develop the program for a significant meeting of the principal investigators of the NSF’s Secure and Trustworthy Cyberspace (SaTC) program. **Prof. Lance Hoffman** is GW’s principal investigator on this project. The purpose of this new NSF program is to foster effective collaborations among computer scientists, electrical engineers, economists, psychologists, sociologists, and others working on cybersecurity.

Our Faculty has been very active presenting their research, contributing in their areas of specialization, and being honored in their respective fields.

**Prof. Abdou Youssef** was the subject of a feature article in the May 7 issue of *GW Today* entitled “Professor Abdou Youssef discusses the future of computer science”.


**Prof. Wood** attended the Usenix Annual Technical Conference and HotCloud Workshop in Boston, MA June 12-15. He presented 2 co-authored papers, “An Empirical Study of Memory Sharing in Virtual Machines” and “Seagull: Intelligent Cloud Bursting for Enterprise Applications” Last October, **Prof. Wood** presented a paper entitled “PipeCloud: Using Causality to Overcome Speed-of-Light Delays in Cloud-Based Disaster Recovery” at the Symposium on Cloud Computing in Lisbon, Portugal. The paper described how to use cloud computing platforms for high performance disaster recovery.

**Prof. Hoeteck Wee** in July gave a talk at the MIT Cryptography and Information Security Seminar while visiting Microsoft Research New England.

**Prof. Rachelle Heller** co-led the panel “Academic Dual Career Situations in the Sciences and Engineering” at the 2012 International Dual-Career Network Conference Beyond the Trailig Spouse: The Future of Dual-Career Support in the Academy, June 4-5 in Worcester, MA. She also presented the poster “PAY It FORWARD: National Model
Workshops for Mentoring Women in STEM”, JAM Meeting.

Prof. Sibley presented his co-authored paper “Continuous-Time Batch Estimation Using Temporal Basis Function” at the IEEE International Conference on Robotics and Automation (ICRA 2012).

Prof. Sibley gave an invited honorarium entitled “Mobile Robot Perception for Long-term Autonomy” at the Naval Research Laboratory last October. The talk described advances in robot perception algorithms aimed at enabling persistent long-term, autonomous operation in unknown situations spanning weeks or more.

On May 18, Prof. Sibley co-ran the second Workshop on Long-term Autonomy at the IEEE International Conference on Robotics and Automation. The problem of long-term autonomy is attracting increased attention in the robotics research community. The Workshop, which gathered some of the most prominent researchers in the field, helped to crystallize and identify key issues and challenges as robotic systems operate in increasingly large-scale environments and over long periods of time.

Prof. Sibley gave a robotics and intelligent machines seminar at Georgia Tech on April 23. His talk described recent advances in perception that enable long-term autonomous operation of mobile robots in novel environments.

Prof. Sibley gave the keynote talk “Towards a Common Framework to Study the Function of the Insect Central Complex” at the Janelia Farm Research Center conference on April 15. The talk focused on looking for similarities between robot and insect-brain visual navigation algorithms.

Prof. Claire Monteleoni gave an invited talk entitled “Clustering Algorithms for Streaming and Online Settings” to the Department of Computer Science at Virginia Tech, National Capital Region on April 27.

Prof. Monteleoni gave an invited talk at George Mason University in April. The talk entitled “Clustering Algorithms for Streaming and Online Settings” was part of the GRAND (“Geometry, Graphics, Robotics, AI, Algorithms, and Data Mining”) Seminar talk at GMU’s Computer Science Department.

Prof. Monteleoni presented by invitation her poster “Online Clustering with Experts” at the IMA Annual Program Year Workshop, Machine Learning: Theory and Computation, which was held in March at the Institute for Mathematics and its Applications (University of Minnesota).

Prof. Heller hosted the 2012 Women’s Leadership Conference: You’re Not Supposed to Be Here at the GW Mount Vernon Campus in March.

Prof. Hoffman was featured in a CNN piece on the need for cybersecurity specialists which
aired the weekend of April 21. A version of this news piece was also featured in a CBS piece on cybersecurity jobs which aired July 16. **Prof. Hoffman** participated in the Summit on Education in Secure Software, an NSF sponsored event, last October. The Summit was co-sponsored by two directorates of NSF: Computer and Information Science and Engineering (CISE) and Education and Human Resources (EHR). The Summit was by invitation only and featured active development of innovative concepts in teaching secure programming at all levels.

**Prof. Hoffman, CS Senior Research Scientist Dr. Costis Toregas, and Diana Burley** co-authored the article “Holistically Building the Cybersecurity WorkForce” published in the March-April 2012 issue of *IEEE Security & Privacy* magazine. The article describes how fields such as public health care and cybersecurity are inherently complex and cross-disciplinary, and encourages collaboration amongst computer science educators, human resources professionals, and experts in cybersecurity with an eye to producing appropriate workforce for the future.

In January the GW Cyber Security Policy and Research Institute (**CSPRI**) held a debate on SOPA: “Resolved: The Internet’s Domain Name Systems (DNS) Should be Utilized to Try to Control Bad Behavior Such as Copyright and Trademark Infringement”.

Last October, **CSPRI** was the academic sponsor for a *Washington Post Live* breakfast panel discussion on cybersecurity featuring Janet Napolitano, Secretary of the U.S. Department of Homeland Security, and General Michael Hayden, former Director of the CIA, who discussed the important high-stakes public policy issues around cybersecurity. Other speakers included Rep. Mac Thornberry (R-TX); Gregory P. Schaffer, Acting Deputy Secretary for Cybersecurity, National Protection and Programs Directorate, Department of Homeland Security; and Tim McKnight, Vice President and CISO, Northrop Grumman Corporation.

**CSPRI** is the cover story of the Summer 2012 issue of *GW Magazine*. **Click here** for the CSPRI article entitled “Of Mice and Menace: The tug-of-war for digital dominance requires an increasingly skilled crop of defenders. Enter GW CyberCorps”.

**Prof. James Hahn’s** Bioengineering research was featured in the July GW research blogs (**http://www.gwresearchblog.com**) and in the March Engineering Hall Update (**http://www.gwu.edu/scienceandengineeringhall/newsletters/022912.html**).

**Dr. Costis Toregas**

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The article “Interactive Visualization and Analysis of Multimodal Datasets for Surgical Applications” co-authored by Prof. Hahn and his former CS doctoral students and postdoc, Can Kirmizibayrak, Yeny Yim, and Mike Wakid, was published online in February in the *Journal of Digital Imaging*.

Prof. Evan Drumwright was quoted in “Robots Are Learning to Take Care of Pets”, a January 20 blog article on Forbes.com. The article discusses the work being done by students in Prof. Drumwright’s robotics course. The blog on which the article was posted focuses on futurism, cutting edge technology, and breaking research.

Prof. Drumwright’s class “Autonomous Robotics” was featured in the article “New Robot, Old Tricks, GW students learn intricacies of autonomous robotics by tackling pet projects” in the January 9 issue of *GW Today*. A main research interest of Prof. Drumwright is developing robots that can perform occupational tasks autonomously and effectively. “But before we can develop better robots, we need better computer robotic simulations,” said Prof. Drumwright. Students in his course first learn about programming languages and the mathematics of robotics and control theory. Next they work on writing their own simulation programs for specific real world robot-performed tasks which they finally work on with actual robots in the lab. Many of the Autonomous Robotics class students said they plan to continue working on their class research problems.

In last Fall’s election, the City of Takoma Park again used the Scantegrity voting system developed in part at GW. That election marked the first time that it was possible for absentee voters or voters with visual disabilities to participate in a secret-ballot, independently-verifiable governmental election, and the election website was more secure through the use of the Composite operating system. Prof. Parmer, Prof. Poorvi Vora, CS post-doctoral scientist Dr. Filip Zagorski, CS doctoral students Jiguo Song and Qi Wang, and CS students Tyler Kaczmarek and John Wittrock worked on this research project. Some of the work extended previous work by former CS undergraduates Alex Florescu and Jan Rubio. The research was supported in part by NSF awards.

Our Faculty members were active on the international stage as well.

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Prof. Monteleoni gave 2 invited talks at workshops last December in Spain: “Clustering Algorithms for Streaming and Online Settings” at the Workshop for Women in Machine Learning in Granada, and “Climate Informatics” at the Workshop on Machine Learning for Sustainability” at the Neural Information Processing Systems Conference in Sierra Nevada.

Prof. Monteleoni attended the 15th International Conference on Artificial Intelligence and Statistics (AISTATS) held in April in La Palma, Canary Islands. Her co-supervised doctoral student gave a talk on their paper “Online Clustering with Experts”. AISTATS is one of the top 5 international conferences in machine learning and the acceptance rate for talks at this conference was 6%.

Prof. Hahn was one of the two keynote speakers in the international plenary session of the First Congress of Innovation in Materials and Equipment for Health (CIMES) which was held in Sao Paul, Brazil April 10 and 11. Prof. Hahn spoke on the collaboration between the medical and engineering disciplines in biomedical research with successful examples from GW. The Congress was attended by representatives from government, industry, universities, science and technology institutions, and regulatory agencies that have direct relation to the health industry in Brazil. The main theme of the Congress was the support of strategic collaboration among the major players in the rapidly growing health industry in Brazil.

Prof. Wee in April travelled to Cambridge, UK to present his co-authored paper “Dual Projective Hashing and its Applications – Lossy Trapdoor Functions and More” at Eurocrypt, one of the top two crypto conferences. In May, he presented in Darmstadt, Germany at the Public Key Cryptography Conference “Public Key Encryption against Related Key Attacks” his co-authored papers “Functional Encryption for Threshold Functions (or, Fuzzy IBE) from Lattices”, and “Efficient Password Authenticated Key Exchange via Oblivious Transfer”. In June, he was the invited speaker at the workshop on “Theory and Practice of Multiparty Computation” in Aarhus, Denmark, where he presented his co-authored paper “Functional Encryption with Bounded Collusions via Multi-Party Computation”. This last paper will also be presented at the Crypto conference in August.


Prof. Clarkson gave the invited lecture titled “Verifiability in Electronic Voting” at the Second International Summer School on Electronic Voting in Wadern, Germany, July 16.

Prof. Drumwright gave an invited talk as chair of the session on manipulation at the 13th International Symposium on Experimental Robotics (ISER), June 17-21 in Quebec, Canada. ISER is one of the most prestigious conferences in the field of robotics and is held only once every 2 years.
Student News

Our students achieved distinction in the 2011-12 academic year.

CS doctoral student Roxana Leontie presented her paper “Load Equalization on a Two-Armed Robot via Proprioceptive Sensing” at the 13th International Symposium on Experimental Robotics (ISER) held June 17-21 in Quebec, Canada. The paper was co-authored by her advisor Prof. Evan Drumwright and by Prof. Rahul Simha.

CS doctoral student Jinho Hwang together with his advisor Prof. Timothy Wood presented a poster titled “Mortar: Filling the Gaps in Data Center Memory” at the Usenix Annual Technical Conference and HotCloud Workshop in Boston, MA, June 12-15. Jinho also presented a paper he co-authored with his advisor Prof. Wood titled “Adaptive Dynamic Priority Scheduling for Virtual Desktop Infrastructures” at the IEEE/ACM International Workshop on Quality of Service (IWQoS) in Coimbra, Portugal, June 4-5. Jinho received a Best Student Paper award for this paper. This Summer Jinho was an IBM T.J. Watson Research Center Summer Intern, working on “Cloud data center management in heterogeneous infrastructure environment”.

CS doctoral student Scott McQuade presented the poster he co-authored with Prof. Claire Monteleoni titled “Global Climate Model Tracking Using Geospatial Neighborhoods” at The Learning Workshop, a premier, invitation-only, machine learning workshop which was held April 3-6 in Snowbird, UT. It was also presented in the Computational Sustainability and AI Special Track at the Twenty-Sixth Conference on Artificial Intelligence (AAAI), 2012, and accepted as both a talk and poster at the July 22-26 conference.

The GW CS team competed in 2 cyber defense competitions in 2012: Mid-Atlantic Regional Collegiate Cyber Defense Competition (CCDC), and the National Cyber League (NCL). Maya Larson, an SFS scholar in the CyberCorps program, also worked as a judge in the Pacific Rim Regional CCDC. The competitions provided opportunities for students to practice cyber defense skills in simulations of networks under several attack scenarios. Cyber defense participants included Cole Ashcraft, Maya Larson, and Princess Allen. The GW team won the second round for the Eastern Conference in the National Cyber League (NCL) Defense Competition. The SFS/CyberCorps program at GW is led by Prof. Roxana Leontie.
Lance Hoffman, Prof. Rachelle Heller, and CS Lead Research Scientist Costis Toregas.

CS student Andrew Olowude won the 2012 GW Spring Festival of Animation for his project “Trials of the Heart”. (see Events and Celebrations)

CS student David Breneisen received the 2012 Gary and Judy Bard Entrepreneurial Engineering Endowment Award for his Senior Design Project entitled “Handy Chem”. “Handy Chem” is an automated grading tool for chemistry. By using handwriting recognition, “Handy Chem” can grade chemistry homework and tests, thus saving teachers time and giving students instant feedback. Click here to learn more.

CS student Chantree Chandrapunth received the 2012 Arnold C. Meltzer Award for her Senior Design Project entitled “Sculpteo”. “Sculpteo” allows the user to play with 3D virtual playdough using gesture control. The user manipulates the virtual playdough by performing grab and drag gesture in 3D spaces. The system simulates playdough, imitating a real-world material in response to the hand gestures as if the hands exert force directly on its surface. “Sculpteo” was also selected as one of the top 100 teams in the first round of Microsoft’s Imagine Cup Competition. Click here to link to “Sculpteo”.

Chantree Chandrapunth won the 2011 GW Fall Festival of Animation for her project “Ninja”. (see Events and Celebrations)

The Department of Computer Science nominated Xiaolong Jiang’s Senior Design Project “Magic Hands” for the 2012 SEAS-wide Pelton Award for Outstanding Senior Project.

CS MS student Sujith Bhashyam published his paper “RFID Factor Authentication Application for Trusted Identities in Cyberspace” in the International Journal of Software Engineering (February 2012), and his abstract paper “Toward a Safe and Secure Cyber Identity” at the NCUR 2012 Conference at Webster State University.

CS doctoral student Nadezhda Radeva was voted the 2012 GW Chapter of the Association of Computing Machinery (ACM) Graduate Teaching Assistant of the Year.
Events and Celebrations

In September last year we held our first CS Colloquium of the 2011-12 academic year. We featured 13 guest speakers in all. Click here for the complete list of the 2011-12 CS Colloquiums.

On September 29th, WiCS (Women in Computer Science) held its kick-off event of the 2011-12 academic year – an evening reception for women students, faculty, and alumni in computer science. WiCS was very active throughout the academic year, holding a Brown Bag Lunch each month, in addition to other events. You can now join WiCS on Facebook! The group is called “Women in Computer Science (WiCS) at GWU”. In October, WiCS Movie Night featured “Top Secret Rosies: The Female Computers of WWII”.

On October 20th, the inaugural meeting of COSEC – Computer Security Seminar - was held. Organized by Prof. Michael Clarkson, this new reading group discusses recent technical papers in the computer science area of cybersecurity, including computer and network security in order to foster technical discussions among the GW research community. COSEC is open to all GW faculty and students interested in research. Click here for the Fall 2011 COSEC schedule.

Also in October, the SEAS National Advisory Council (NAC) Meeting was held. The CS and MAE (Mechanical and Aerospace Engineering) Departments were featured, and Prof. Abdou Youssef gave a presentation on the state of the CS Department. Prof. Claire Monteleoni gave an informative overview of her teaching and research interests. In the afternoon, a panel discussion on cybersecurity moderated by Prof. Youssef and featuring Dr. Lance Hoffman, Prof. Nan Zhang, Prof. Michael Clarkson, and Prof. Hoeteck Wee generated much discussion.

In December, WiCS hosted an illustrious Career Panel for its members. The Panel was comprised of Naa-Obosie Alexander-Reindorf, senior consultant with Deloitte – Information Management Practice; Malek Ben Salem, research scientist at Accenture’s cyber-security lab; Lyz Charter, senior account executive of Systems Maintenance Services; Prof. Rachelle Heller; Diana Holcomb, software engineer at Booz Allen Hamilton; Lindsay Ladd, cyber analyst for Navy Criminal Investigative Services (NCIS) and information systems
security manager for the U.S. Department of Health and Human Services; and Prof. Monteleoni.

On December 9, CS students displayed their work in game design at the CS Department hosted Fall Festival of Animation - a bi-annual event featuring project presentations by students in the computer animation and video games courses. As always, the Festival was very well attended and great fun! The Festival’s winner was CS student Chantree Chandrapunth, CSCI 181, for “Ninja”. The winning project is about a ninja who becomes a thief and sneaks into a house at a very bad time.

In January, we held our Annual CS Freshmen Welcome. This fun-filled event was inaugurated 3 years ago and has proven to be immensely popular, as well as a great opportunity for Computer Science freshmen and new transfers to mingle casually with CS Faculty, CS freshmen-courses GTAs, CS Staff, SEAS undergraduate Deans and Administrators, and the leaders of the various GW computer science-related student organizations. The evening featured specially catered food, giveaway bags filled with various items bearing the unique “CS@GW” logo, and prize raffles.
In February, the Sixth Annual Student Research & Development Showcase was held. The CS Department submitted 13 posters to the Showcase this year and had a respectable showing. On February 20th, Prof. Gabriel Parmer gave the first talk in the GW Chapter of ACM new lecture series. Prof. Parmer’s talk entitled “Behind the Scenes in Object-Oriented Languages” discussed how concepts such as method dispatch, inheritance, polymorphism, and prototype-based class systems are implemented.

In March, the first Open House to learn about the new MS in Cybersecurity in Computer Science was held. This new degree program in the Department of Computer Science has generated a great deal of excitement! (see Department News) Also in March, Prof. Wee’s crypto class had a very special guest speaker: Jean Paul Degabriele of the Information Security Group at Royal Holloway, London, UK. Mr. Degabriele works on real-world crypto and has appeared at the top security and crypto conferences. He lectured the class on his work on attacking the crypto underlying IPsec.

In April, Prof. Eugene Spafford of Purdue University presented the GW 2012 Frank Howard Distinguished Lecture. Prof. Spafford spoke on the topic “Why Fixing CyberSecurity Is So Difficult”. One of the senior and most recognized leaders in the field of computing, Prof. Spafford has been an advisor on issues of security and intelligence, education, cybercrime and computing policy to major companies, law enforcement organizations, and academic and government agencies including Microsoft, Intel, Unisys, U.S. Air Force, National Security Agency, GAO, FBI, National Science Foundation, U.S. Department of Justice, U.S. Department of Energy, and two U.S. Presidents.

On April 19th, we held our Annual CS Senior Design Projects Presentations.
Congratulations to all of the 2012 CS Senior Design Projects award winners! (see Students News) David Breneisen won the Gary and Judy Bard Entrepreneurial Engineering Endowment Award. Chantree Chandrapunth won the Arnold C. Meltzer Award for best overall Project. Xiaolong Jiang’s Senior Design Project represented the CS Department at the 2012 SEAS-wide Pelton Award for Outstanding Senior Project.

On May 3rd, CS students displayed their work in game design at the CS Department hosted Spring Festival of Animation. The Festival’s winner was CS student Andrew Olowude, CSCI 4553, Computer Animation II, for “Trials of the Heart”. The winning project is about a couple who discover that not all love stories have a happy ending.

On May 4th, the CS Department recognized all our graduating students with our Annual Honoring Our CS Graduates Party held in the Marvin Center Grand Ballroom. The event can no longer fit in the Continental Ballroom! As always, there was lots of good food, fun, and laughs!

CS Alumni attended and shared with our newest CS Alumni some of their personal experiences as students in the CS Department and the great benefits of a GW CS degree.
Several awards were presented at the Party. The 2012 Outstanding CS Alumni Service Award was presented to Dr. David C. Kaarlgard (D.Sc.’74). Dr. Kaarlgard was the 2010 recipient of The George Washington University Alumni Outstanding Service Award, is a member and former Chair of the National Advisory Council of the GW School of Engineering and Applied Science, and a member of the External Advisory Board of the CS Department. In 2009, Dr. Kaarlgard and his wife endowed the Kaarlgard Scholarship for CS undergraduate students.

The 2011-2012 GW Chapter of the Association of Computing Machinery (ACM) Graduate Teaching Assistant of the Year Award was presented to CS doctoral student Nadezhda Radeva.

The GW Chapter of the Association of Computing Machinery (ACM) 2011-2012 Teacher of the Year Award was presented to Prof. Parmer. Prof. Parmer also received the Award last year.

Continuing the tradition begun 3 years ago, at this year’s Annual Honoring Our CS Graduates Party we gave each of our CS graduating seniors and graduating graduate students a special gift from their CS Family: a selection of our “CS@GW” logo items. We want all our CS graduates to carry their CS Family with them wherever they may go! At the Party we also recognized each of our CS Department Tutors
with a specially engraved “CS@GW Tutor with Appreciation” glass jar filled with personalized “CS@GW Tutor” M&Ms in the GW school colors of buff gold and blue, and presented all the attending CS Alumni with a “CS@GW” logo mug.

Again this year, we combined our Annual Honoring Our CS Graduates Party with demonstrations of this year’s CS Senior Design Projects. All our graduating students, as well as our CS Alumni, Faculty, and guests, had the opportunity to view these intriguing Projects firsthand and discuss them with their creators.

This year, the Party also featured student poster presentations selected from some of this year’s CS research courses. The posters created a great deal of interest.

Next year’s Annual Honoring Our CS Graduates Party and Senior Design Projects Demonstrations will take place Friday, May 10, 2013 in the Marvin Center Grand Ballroom. Be sure to circle the date on your calendar! We extend a special invitation to all our CS Alumni to join us and celebrate welcoming the 2013 Class into our CS Alumni Family!
Our academic year drew to its traditional close on May 17th with the Doctoral Hooding Ceremony and May 18th with the SEAS Graduation Ceremony. This year’s guest speaker at the SEAS Graduation Ceremony was Dr. Ronald Ross, Senior Computer Scientist and Fellow, National Institute of Standards and Technology (NIST). Dr. Ross is an expert in cybersecurity and last year was named to InformationWeek Government’s CIO 50, which identifies top information technology decision-makers in government.
Congratulations to all our graduates on their great achievements! We wish you much success in all you do. Keep in touch so we may share your future successes with all our CS Family!

News Features

CS Alumna Presents at International Conference

CS Alumna Gloria Washington (Ph.D. ’11) presented her paper “Does User Frustration Really Decrease Task Performance?” at the 4th International Conference on Applied Human Factors and Ergonomics 2012 held July 21-25 in San Francisco, California. The paper examines literature surrounding user frustration and the causes of user frustration, explores user frustration as an emotion that has amounts or intensities, and seeks to understand if all amounts of user frustration decrease task performance in human-computer interaction. The paper is based upon the research Dr. Washington conducted as a doctoral student at CS where she was one of three African-American women awarded the Computer Science Ph.D. in the 2011 graduating class. Dr. Washington is Lead Information Systems Engineer at MITRE. Her work at MITRE includes research on social signal processing, semantic technologies, and usability engineering.

CyberCorp Program Graduates Cited in Bloomberg News

Patrick Kelly and Mischel Kwon, both graduates of the GW CyberCorps Program, were quoted in the Bloomberg News article “Cyber ‘MacGyvers’ Trade Hacking Expertise for U.S Scholarships” (see http://www.bloomberg.com/news/2011-11-03/cyber-macgyvers-trade-hacking-expertise-for-u-s-scholarships.html). The article describes the U.S. government program to beef up its pool of cybersecurity experts by offering full scholarships and a stipend to attend the two-year Master’s Degree program in cybersecurity. The GW CyberCorps Program is one of such programs, and is part of the Scholarship for Service administered by the National Science Foundation. Almost all the students who graduate from the Program get a top security clearance and secure top job offers with federal agencies, including the National Security Agency, Central Intelligence Agency and the Department of Homeland Security, as well as with industry and research centers. Mischel Kwon, former director of the U.S. Computer Emergency Readiness Team, was a part-time instructor for the CyberCorps Program at GW. Patrick Kelly is a branch chief at the U.S. Department of Health and Human Services and a part-time instructor for the GW CyberCorps Program.
CS Doctoral Dissertations: 2011-2012

NAME: Anasse Bari
DISSERTATION TITLE: Biologically Inspired Data-Mining Framework and Algorithms
ABSTRACT

NAME: David Charles Christian
DISSERTATION TITLE: An Evolution Framework for Asynchronous Collaboration Tools
ABSTRACT

NAME: Erhan Guven
DISSERTATION TITLE: The Robust Classification of the Emotion in Human Speech Using Features from a Spectogram
ABSTRACT

NAME: Xin Jin
DISSERTATION TITLE: Privacy Preservation and Data Exploration on Databases
ABSTRACT

NAME: Eugen Leontie
DISSERTATION TITLE: Hardware-Enforced Fine-Grained Isolation of Untrusted Code
ABSTRACT

NAME: Hongjun Yu
DISSERTATION TITLE: Golay Code Clustering Using Double Golay Encoding Technique
ABSTRACT
We hope you enjoyed reading this Newsletter and invite you to share with us your successes.