

# the debugger




Computer Science Department • Indiana University of Pennsylvania



Spring 2013  
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Dr. Waleed Farag  
Editor-in-Chief

Comments?  
Suggestions?  
Submit at:  
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## EDITOR'S NOTES

First, I would like to welcome everyone to this new release of the IUP Computer Science Department's newsletter, the Debugger. I am thrilled to take over the editing of our long established newsletter and hope you enjoy the various topics presented here.

In this issue, our chair, Dr. Oblitey, discusses several departmental updates in his "From the Chair" article. He covers a wide spectrum of updates and some of them will be further discussed in other articles. An interesting set of Alumni updates and department news was compiled by our Secretary, Ms. Yvonne Dougherty. Thanks, Yvonne, for that section. For our Alumni, we are always happy to hear from you and know about your stories. Please keep sending us your updates and we will publish them in future issues.

This year, our Department in collaboration with the Institute for Information Assurance held a successful Information Assurance Day (IAD) where nationally recognized security experts were among the presenters (see the IAD article). I also kept you informed with our colloquium series status in the "Colloquium Updates" section. In this issue, Dr. Smith reports on the participation of our programming team at the ACM Regional Programming Contest.

The Computer Science Education Week was last December and I included a motivating article from their web site. Moreover, this issue briefly presents club updates and some general news. Again, I hope you enjoy reading through it.

Waleed Farag, Editor

## From the Chair

William Oblitey



Hello everyone,

While I'm examining things that have happened this year to report to you, I want to take the time to thank all the alumni who showed up for the homecoming breakfast on October 6. It was very nice to see you all and I, in particular, had a wonderful time just visiting with you. I think we did well in surprising you by combining our program with that of the Math Department and I am very glad that you appreciated that because I saw you visiting with your Math profs and I especially enjoyed how enthused most of you were to visit and mingle. Both Dr. Alarcon and I think that the mix of Computer Science and Mathematics was so much of a success that we plan to continue the alumni breakfasts that way. It was great also to see your young children and I am counting on them to apply to the department as soon as they come of age. I just can't promise to be around to teach them.

Now, in case you have not heard already, we do have a new dean in our college. Dr. Deanne Snavelly, a chemist, started work at IUP on August 1, 2011 and immediately took charge of the college. She runs an open shop and she actively encourages alumni, faculty, and student participation in the affairs of the college. She came to us from Bowling Green State University where she served as interim associate dean of the College of Arts and Sciences and interim dean of the graduate college and vice provost for research. And then, while I'm at it, I need to inform you also that we have a new president. Dr. Michael Driscoll, an electrical engineer, started as IUP's new president on July 1, 2012. What everyone loves about him is that he has continued interim president David Werner's monthly "open forums" to take questions from faculty and staff on issues of their choosing.

Concerning recruitment, our freshman intake numbers for the past three years have been 84, 78, and 76. The good thing about our freshman enrollments that I want to report to you is that the SAT scores have been high for all of them and so we were sure that we could retain all of them until graduation. However, there could be other issues of concern for them and so it happened that this Fall we had 21 students transfer into our department while 17 students transferred out. Last Fall 2011, we have had thirteen (13) students transfer into our department but fifteen (15) have transferred out. We will need to do better to retain our students. I must add, however, that some of the students who transferred out made it a point to

come and chat with me and we discussed their future plans and what would excite them with their daily work to help decide the best majors for them. Yes, we will retain our students but we still want them to have their hearts in computing so their future lives would be delightful for them.

The Computer Science Club meets every Monday and they have been doing some wonderful things with android programming. The current officers, Thomas Taylor - President, Kyle Adamski - Vice-President, Maria Shah - Secretary, and Joseph Gibson - Treasurer, have held some fund raising activities which have included sale of t-shirts and cookies. The club has held workshops on android programming and they have implemented some android apps. They also offer tutoring for students in COSC 105, COSC 110, and COSC 210. The Information Assurance Club has Carrie Estes for President with Travis Deyarmin as Vice-President. The club meets every other Wednesday from 6:00 to 7:00. At their meetings they have had interesting discussions, including current happenings in the Information Assurance field, which Information Assurance related jobs are available and how attractive they can be, and some discussions of programming languages and which of them lend themselves for secure programming. Both clubs are very eager to have any of you come and discuss the interesting and exciting things you are doing with computing at your institutions. Just let me know and I'll work with them in getting you over for a good discussion.

Dr. Rose Shumba is away on a two-year leave of absence. In her absence, Dr. Waleed Farag has taken over as the director of the Center for Information Assurance. On November 1, he organized the fifth IUP Information Assurance Day (IA Day). It was held at the Delaware Room of the IUP Hadley Union Building. The event featured a number of security experts including Dr. Patrick McDaniel, Professor of Computer Science and Engineering at the Pennsylvania State University. Professor McDaniel discussed his experiences as the lead investigator of the "Evaluation and Validation of Election-Related Equipment, Standards and Testing (EVEREST)" study. He demonstrated how and discussed examples of security vulnerabilities in the voting systems being used in Ohio. Dr. Adam Lee, Assistant Professor of Computer Science at the University of Pittsburgh, talked about "Improved Privacy Through Exposure Control." In his talk, he discussed the results of an ongoing research collaboration between the University of Pittsburgh and Indiana University at Bloomington that is addressing various facets of the exposure problem of using pocket-computing devices such as smartphones. Cpl. John Roche, Coordinator at the Southwest Computer Crime Task Force of the Pennsylvania State Police Bureau of Criminal Investigation, discussed some case studies in Computer crime Investigation.

I am particularly delighted to report to you the collaboration of faculty and students in the department. Drs. David Smith and Terrence Fries collaborated with the students Thomas Taylor, Joseph Gibson, and Zachary Seymour to develop a paper, “Educational Aspects of Undergraduate Research on Smart Phone Application Development.” The paper was presented at the Second International Symposium on Integrating Research, Education, and Problem Solving in Orlando, Florida and was voted the best paper in its session. Kudos to our students.

We still welcome your calls to the department. Our secretary, Yvonne, is as good as Carol in making and keeping conversations going and we would be happy for you to call just to say hello. 🖥️

## Alumni News/Updates

### UPDATES



#### **Cathy Gruss (1985)**

Cathy's daughter *Rebecca Gruss* portrayed one of two children stranded on a deserted road in New Mexico who discover a man locked in the cellar of an abandoned gas station. The short film *Mile 27* had screenings at the Long Island International Film Expo, in London at the Wimbledon Shorts Film Festival, and at the Artisan Festival International in The Hamptons.

Cathy's son *Evan Gruss* has the role of Eddie in the short film *My Mom and Other Monsters*. The horror film was accepted into the San Diego Comic Con Independent Film Festival and went on tour with the Viscera Film Festival. The plot centers on a young boy trying to escape his overbearing mother with the help of two imaginary monster friends.

#### **Raymond Becker (1985)**

Raymond Becker is the IT Specialist/Engineer for the USDOJ

#### **Jason Agostoni (1997)**

Jason Agostoni is the owner/founding member at AppFinch LLC

#### **Brian Geibel (2000)**

Brian Geibel, Class of 2000 (B.S. in Computer Science) has founded a new venture along with a team of other industry veterans. It is called A3 Freight Payment and the launch press release is below:

*MEMPHIS, TN* - A team of veterans of the freight payment industry has launched A3 Freight Payment, a new and exciting venture in the freight payment space. Backed by significant experience and capital, the Core Team at A3 Freight Payment has been in the planning and design stages for many months. This development work has culminated in a system capable of processing \$3-5 billion US dollar equivalent of freight payments per year. The A3 Freight Payment system brings shippers the highest degree of transparency, customization, and processing control found anywhere in the freight payment industry. Its robust design reflects the Core Team's significant experience with the systems of long-time players in the freight payment space including: AIMS Logistics, Green Mountain Consulting, PowerTrack, Syncada, Schneider Payment Systems and CTSI-Global.

"Our Core Team has an expansive understanding and knowledge of the industry, and has seen what works and what does not in the freight payment process," said Ross Harris, CEO. "By drawing upon our experience with numerous different platforms, we are truly bringing the best of all these worlds together for the benefit of large volume shippers."

A3 Freight Payment, a nationwide provider, is headquartered in Memphis, Tennessee. The company recently launched its website ([www.a3freightpayment.com](http://www.a3freightpayment.com)) and is actively

soliciting opportunities to service large volume shippers. For more information, visit [www.a3freightpayment.com](http://www.a3freightpayment.com)

### **Jason Plank (2011)**

**CORRECTION:** Jason and Kelsey McClelland (Art Institute of Pittsburgh – 2011 / Web Design and Interactive Media) set their engagement date as June 8, 2011. Their wedding date is June 30, 2012.

### **Nosipho Masilela (2012)**

After graduating, Nosipho acquired a position as an Associate Systems Engineer at MAXIMUS in Reston, Virginia. MAXIMUS is a for-profit company partnering with government agencies across North America, the United Kingdom, Australia, and Saudi Arabia to provide administration to cost-effective health and human services programs. She enjoys working for the company and there is many new technologies she will have to learn. The environment is very friendly and accommodating to new hires.

### ***May-August 2012 Graduates***

Three IUP students won awards at the third Northeastern United States Chinese Proficiency Competition for Foreign College Students, held at St. Vincent College on March 24. Senior Jazminn Jones won second place. She advances to the national finals at Pace University on April 7. **Senior Courtney Wirtz (Computer Science student dual majoring in Languages and Systems Track and Information Assurance Track)** and sophomore Christopher Barr won third place. Thirty-three students from around the region competed. Contestants were judged on Chinese language proficiency and talent and knowledge of China. Judges for the competition were Professor Huili Zheng, Saint Vincent College; Professor Yueming Yu, Carnegie Mellon University; and Professor Rae Yang, Dickinson College.

Posted on 4/9/2012 8:20:59 AM

### ***May-August 2012 Graduates – Where are they after graduating?***

Steven Geisel – Systems Analyst (Quality Assurance) with UPMC in Pittsburgh, PA

Nicholas Johnson – Software Engineer with SAIC in Johnstown, PA

Joshua Schwartz – Security Consultant with Mandiant in San Francisco, CA

Eric Strittmatter – Information Technology Generalist with IUP in Indiana, PA

Shane Serafin – PNC in Pittsburgh, PA

Christopher Wright – Center Associate with Deloitte in Camp Hill, PA

George Yauneridge – Java Developer with Vanguard in Malvern, PA

### ***WHAT ARE CURRENT COSC STUDENTS DOING?***

**Dan O'Hara**, a Geoscience and **Computer Science** double major from Ebensburg, PA, was one of 90 students chosen to receive an honorable mention from the prestigious Goldwater Foundation. Dan was nominated by the faculty of IUP and was part of an impressive field of 1,123 mathematics, science, and engineering students from across the nation.

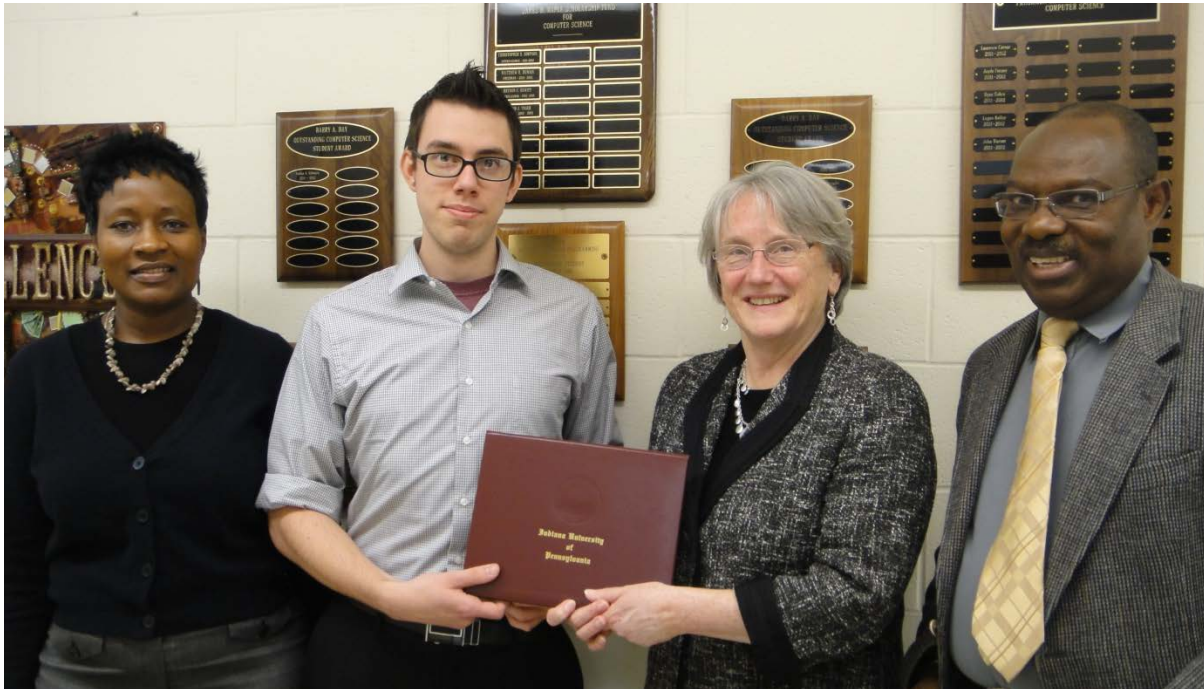


Named for Senator Barry M. Goldwater, the Foundation supports the training of highly qualified scientists, mathematicians, and engineers by awarding scholarships to college students who intend to pursue careers in these fields.

Posted on 4/17/2012 9:12:00 AM

## Barry Day Award

The Barry Day Outstanding Computer Science Student Award was established by Barry Day, an alumnus of the IUP Computer Science program. This award is normally given to a senior in recognition of his/her achievements and contributions to the department. The recipient for the 2011-2012 academic year is Joshua A. Schwartz. A few highlights from Joshua's college career: Information Assurance Club President, COSC Student Advisory Board Member, represented the department at numerous cyber security competitions and conferences (e.g. DerbyCon, ISSA, CUP, Security B-Sides), and served as a panel member at the IUP Information Assurance Day. Joshua received the 2011 Outstanding Student Award for Computer Organization and Design, worked as a student grader and tutor, and is an IT consultant. He was also selected for participation in Independent Research on System Exploitation.



Pictured: Dr. Rose K. Shumba, Information Assurance Director/COSC Professor; Joshua Schwartz, Barry Day Award recipient; Dean Deanne Snavely, College of Natural Sciences and Mathematics; Dr. William W. Oblitey, COSC Chair/COSC Professor.



## The 2012 Information Assurance Day

*Waleed Farag*

The Computer Science Department, in collaboration with the Institute for Information Assurance at IUP, hosted the fifth annual Information Assurance Day on November 1, 2012, 9:00 a.m. – 4:00 p.m., at the Delaware Room in the HUB at IUP.

This year's event featured a number of security experts from recognized academic institutions in addition to security specialists from the PA government and local communities. The talks addressed several essential and practical security aspects of our daily computer-dependent life. The event was very well attended; over a hundred students were in attendance at some sessions. Talks were very contemporary and addressed practical aspects of securing your digital assets. Below is a brief description of these talks.

The first talk, titled “Electronic Voting: A Retrospective”, was presented by nationally-recognized security expert Dr. Patrick McDaniel who is a Professor of Computer Science and Engineering at Pennsylvania State University. Dr. McDaniel is editor-in-chief of the ACM journal Transactions on Internet Technology, and serves as associate editor of the journals ACM Transactions on Information and System Security and IEEE Transactions on Computers. He shared with attendees his experience working as lead scientist of a research study focusing on evaluating and validating electronic voting machines. He reported on various vulnerabilities found by his research team and how such issues can compromise the integrity of the voting process. His talk was very timely and attracted the attention of people in attendance. His talk also fostered a scholarly discussion at its end and during the Questions and Answers session.

Dr. Adam Lee, an assistant professor of computer science at the University of Pittsburgh, presented the second talk titled “Improved Privacy Through Exposure Control “. Dr. Lee's research interests lie at the intersection of the computer security, privacy, and distributed systems fields. His recent research has been funded by the National Science Foundation and DARPA. Dr. Lee's talk focused on the necessity of an exposure control loop in which sharing preferences are specified, exposure is quantified and visualized, and users react by revising their information sharing habits and preferences. The talk was followed by a brief Q&A session.



The third talk, titled “Computer Crime Investigation: A Case Study”, was presented by Corporal John Roche from the Pennsylvania State Police. In his talk, Corporal Roche elaborated on a recent investigation that employed various aspects of computer crime investigation and digital forensic techniques. Corporal Roche augmented his talk with several demonstrations that kept all attendees very interested. He articulated several important recommendations that deemed very important to our students on the subject. Many people attended this talk which was concluded by a productive discussion during the Q&A session.

The last talk was presented by Todd Cunningham, Executive Director, IT services at IUP. In this talk, Mr. Cunningham and his staff discussed various mobile security issues and some proposed guidelines. The talk also addressed a variety of strategies, tactics and operational techniques developed by IUP to deal with the increasing use of mobile devices on campus. This presentation also expounded the IUP’s Mobile Device Security Guidelines – which have been recognized as a model within the Pennsylvania State System of Higher Education (PASSHE).

In summary, we had a very successful event in which high quality presenters delivered several state-of-the-art security-related topics. The event had also a very good turnout from IUP students, staff, and faculty members. Finally, I would like to express my appreciation to all who contributed to such a great, fruitful event.

For additional details, please check the event site at:  
<http://www.iup.edu/page.aspx?id=103128>



## Colloquium Status

*Waleed Farag*



Hello Everyone,

As the Department of Computer Science Colloquium Series Coordinator, I would like to give you a brief status report on the progress of our series during the last semester. As you might be aware, over the past few years, the department colloquium series has been very active and is considered a valuable resource to our students. Over the years, our series has featured a number of nationally recognized scholars in the field and also featured many of our loyal alumni who came back to IUP to present their experience and success stories to the newer student generations. Our department web site is always updated with plenty of information about each talk including talk abstract, date, flyer, presentation if any, and biography of speakers. Please check the following link for complete details <http://www.iup.edu/page.aspx?id=72705>.

During the Fall 2012 semester, two talks were presented. The first talk titled “Overview of Deloitte Consulting: Application Management Services Division” was delivered on 9/19/2019 by Vinit Kavathekar, Senior Manager at Deloitte company. In his talk, Mr. Kavathekar gave detailed description of the inner working of the application management services division at Deloitte. Towards the end of the talk, three of our Alumni who are working for Deloitte have shared their experience working at the company. Such a presentation was very motivating and inspiring to the students who attended. The talk was also an excellent recruitment opportunity for our students in which the Deloitte presenters asked interested students to contact them and submit their resumes to the company. The talk was concluded by fruitful discussions raised during the Q&A session.

The second talk was presented by Jim Bartek on 12/4/2012 and was titled “Sugar CRM: Finding Your Fit”. Jim is one of our Alumni who graduated from the Department of Computer Science about 9 years ago. He worked for several startups and is currently working as a core engineer for SugarCRM, the world’s fastest-growing customer relationship management company. Jim’s talk focused on how to find a career that is the best fit for you as a person. He discussed what some

startups are looking for in their future hires. He shared his experience working at SugarCRM and other companies and presented several tips on how to look for and find a working place that suites you and at the same time satisfies your ambition. Many students got involved at the end of the talk in the Q&A session and benefited from Jim's experience.

I hope this briefing managed to familiarize you with our series and please contact me if you are interested in presenting at one of our talks.



## From the Programming Team

*Dave Smith*



Hello everyone,

Each year the Association for Computing Machines (ACM) together with IBM sponsors an annual world-wide intercollegiate programming contest where the finest upcoming minds in computer science are given a number challenging of algorithmic problems to be solved. I am pleased to report that interest in this event has continued to grow with our students. This year IUP Computer Science Department sent three teams to compete at the ACM East Central North American Regional Contest at Youngstown, Ohio on November 3rd. Pictured above are the teams in action. On the first team are En-Ui “Annie” Lin, David Kopczyk, and Brandon Smith (left to right in top left picture). On the second team are Eric Carroll, Joe Kolenda, and Matthew Sulkosky (left to right in top right picture – Matt is missing). And on the third team are Davidjohn (Dj) Gerena, David Fulton, and Travis Deyarmin (left to right in bottom picture). Over 130 teams participated in this regional contest coming from Western Pennsylvania, Ohio, Michigan, Indiana, and Ontario Canada. While CMU, University of Toronto, and Waterloo were the winners of this contest and go on the World Finals in St. Petersburg Russia, I am pleased with the efforts of IUP’s teams and the diligence of our students to prepare to compete against such teams. Each member of our teams received a Certificate of Achievement for their participation. We are thankful for the support from the Foundation to support our students at these events and look forward to competing next year.



*Pictures of our Programming Teams Compete at ACM Regional Programming Contest*



## CS Education Week

Source [csedweek.org](http://csedweek.org)

What do making the homeland secure, developing the skills and tools that make robotic surgery possible, sequencing our DNA and addressing global problems like hunger and poverty have in common? These are all innovations made possible through the use and understanding of computer science.

In spite of the important contribution of computer science in addressing these critical issues, there is a troubling shortage of certified teachers, rigorous curriculum and K-12 courses available to students with an interest in learning about computer science and pursuing careers in this exciting—and lucrative—field. The Bureau of Labor Statistics projects that by 2018 more than 800,000 high-end computing jobs will be created in the economy making it one of the fastest growing occupational fields. Computer Science Education Week (CSEdWeek) is a national effort to both celebrate the importance of computer science education and to expand public understanding and advocacy to address these shortages.

From December 9-15, 2012, thousands of events took place around the country in schools, on university campuses and many other community locations where students, teachers, community leaders and the public can learn more about computer science and its relationship to the innovations that infiltrate our daily lives. The technologies we rely on today would quickly become obsolete absent the innovations that computer science and computer scientists constantly seek and improve. By leaving computer science out of the school day we are shortchanging students and leaving them unprepared for well-paying jobs that are both challenging and keep the US globally competitive.

What can you do to expand opportunities in computer science for students in your community? Explore the CSEDWeek website at [csedweek.org](http://csedweek.org). There you will be able to sign on to the PLEDGE to participate in or create your own CS event. You can read about the thousands of innovative activities and events that your colleagues around the country have developed to promote public understanding of computer science and expand opportunities to study computer science in your local schools. You can learn more about innovative programs and curriculum being used in other communities and effective professional development programs that are available to teachers who want to get certified in the field of computer science.



You might even learn about an event that is already underway that you can encourage others to attend.

Computer science is the key to a safer future where innovation helps the US lead the way in solving the most troubling and challenging problems that face our planet. Make sure students in your community are prepared to take part. Sign the PLEDGE at [csedweek.org](http://csedweek.org) today.



## Club Updates

### Computer Science Club Thomas Taylor

This semester (Fall 2012), the computer science club has taken a different approach in running its meetings. We are running our meetings in a workshop type manner hosting biweekly meetings teaching interested students the Android mobile operating system. The club has created an application for a RSS reader of our website. We have been teaching a range of students from freshman with no programming experience to seniors. There has been three main fundraisers, a bake sale, Sheetz coupons and selling computer science t-shirts dramatically increasing our club budget.

### Information Assurance Carrie Estes

The Information Assurance Club has met several times to speak about hacking, programming, and various other topics. A few key members helped facilitate Information Assurance Day on November 1, 2012. In future meetings we will be discussing security tools and working on physical entrance skills to learn all aspects of how to keep computers and sensitive company information safe. We will also discuss a possible trip to participate in a Capture the Flag contest and listening to presentations on security at APPSEC in Washington DC.



## Awarded Grants

### **Oblitey, Shumba, and Gosset Receive Cyber Catch Grant**

The School of Graduate Studies and Research is pleased to announce that William Oblitey, Rose Shumba (Department of Computer Science), and Jennifer Gossett (Department of Criminology) received a funding award in the amount of \$231,000 from the National Science Foundation for their project, "The Cyber Catch Scholarship Program."

The total funding for this project over a five-year period is anticipated to be \$1,148,531.

### **Farag Awarded Funding for Computer Programming Modules Project**

The School of Graduate Studies and Research is pleased to announce that Professor Waleed Farag, Department of Computer Science, has received a funding award from the Pennsylvania State System of Higher Education in the amount of \$11,998 for his project, "Designing and Deploying Novel Online Shared Computer Programming Modules."





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