

## EDITOR'S NOTES

Welcome to the first all green issue of The Debugger. We will be publishing The Debugger on the departmental web page from now on and invite your comments and input. While I make requests for articles and do edit the contents of the articles, I have help in getting the format ready for the web site. Mr. Li Casanova an undergraduate computer science major has offered to help with the formatting task. I have involved Ms. Tess O'Neil to help with formatting also. Dr. Waleed Farag is the web page administrator for the departmental web site and is our final check before items appear on the web. Further, I would like to apologize for this issue being posted later than usual. As is our grading policy I have already deducted 10% from my grade for being late.

In this issue, you learn more about the primary activities of the department. Mr. Bruce Moser (Computer Science 2002) is the second contributor to the "Alumni Corner". I found his article to be very interesting reading. He begins by characterizing his career as "not a typical path." One of the reasons I thought it would be interesting to hear from the alumni is to see the wide range of paths that are open to computer science graduates. Thanks again Bruce for your input. We need to hit the links this year.

Dr. Bill Oblitey has provided an overview and update on the Information Assurance initiative within the department. I wanted to get this from Bill before he left for Africa. Bill is on a one year Fulbright Scholarship which he tied to a full year sabbatical. The department will be without his valuable services for at least one year. We will keep you informed. Bill has arrived in Africa and he reports that it is hot.

Carol and I have been discussing the "Wall of Excellence" where the best student in each of the core courses each semester is identified on a plaque and receives a small award. Rebecca Sterley a long time friend and employee of IUP provided some unique artwork to help set off the wall. This semester the department will mount a campaign to renew the funds which pay for the plaques and provide the award.

Enjoy reading and stay in touch.

--Charley Shubra, Editor

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## FROM THE CHAIR

--Charley Shubra

Well hello again. The summer issue of The Debugger had a throne and an electric chair on the cover. This reflected my uncertainty about how the job of chair would go. Well after one semester I can report that no one has pulled the switch, but that might be because everyone is too busy to look for it. Actually, I have been very pleased with the cooperation and support provided by the faculty. Carol and the ladies in the dean's office have been indispensable. So far so good and we did accomplish a few things.



Dr. Shumba and Dr. Oblitey have headed up the departmental efforts to secure reaccreditation for the Information Assurance track. We should hear within the next few months, but all looks good so far. On November 7<sup>th</sup>, the department sponsored the first ever Information Assurance Day. Four speakers from industry and government made interesting presentations. Mr. Dominic Glavich (Computer Science '93), Principal Information Systems Security Engineer, Concurrent Technologies Corporation presented: "*Incident Response, Tales From the Trenches*." Mr. Daniel Larkin (Criminology '82), FBI's unit chief, Cyber Division, National Cyber-Forensics and Training Alliance (NCFTA) presented "*Responding to New and Evolving Threats to IA*". Mr. Thomas Richardson, Chief Systems Engineer, Asst Vice President, and Program Manager, Science Applications International Corporation (SAIC), and featuring Mr. Brian Corl, IUP Computer Science intern at SAIC presented "*Peripheral Topics to Information Assurance*". Tom Hendricks, Deputy Chief, National Security Agency Blue Team, Vulnerability Analysis and Operations, Information Assurance Directorate, presented "*Creating Value from Vulnerability*." We very much appreciated the valuable contribution each of these presenters made to the success of the first IA Day. We plan on having our second IA Day in November 2009 and are looking for interesting speakers.

The efforts to secure ABET accreditation for the Language and Systems track progressed this fall semester. While several major tasks remain (completion of the Self Study Questionnaire, administering a survey to our alumni and analyzing the results), we plan on applying for accreditation which should result in a Fall 09 site visit from ABET. Please respond to the web based survey when it is completed. Your participation will be requested via email.

We experienced an increase of incoming freshmen this fall and plan on ramping up our efforts to keep the good trend going. The department is participating in a grant secured by Dr. Richard Lamberski and Mr. Mark Anthony to produce a brochure promoting the department in general and Information Assurance and internships specifically. Ms. Caitlin Hamryszak an impressive communications media student is heading up the efforts to produce the brochure. Once completed, we will be mailing it to high school guidance counselors and faculty who teach computing. The final product will be available on our web site.

The "Wall of Excellence" outside of the departmental office has recognized the outstanding students in each of the core courses for over a decade. Students who excel have their names placed on plaques and receive a small monetary reward. We have a campaign planned for spring semester to replenish the funds to keep this program going strong. Further, Carol and I wanted to give the wall more recognition. We needed a

sign. After several ideas, Becky Sterley of the IUP' IT services, suggested providing a unique artwork for the wall. We are very pleased with the collage of used computer technology which resulted. Now "collage" was the word I used, but Becky said it was an "assembly" which made perfect sense for a computer science department. There is a great deal of symbolism in the assembly, but I will save that story for another time. Becky is a very talented individual and we thank her again for her excellent efforts. Be sure to see Becky's article in this issue and be sure to see "Excellence" when you are on campus.

Business wise, we have two faculty going for tenure this semester and one for promotion. Mr. David Smith is chairing our faculty search committee. We have two open positions.

Happy New Year!

[TOP](#)

## circuitry REcycled

--Rebecca S. Sterley

**FEATURED**

"I refer to my art works as "circuitryREcycled". Every day we are funneled into an ever demanding cyber world. Our fingertips command our computers, cell phones, PDA's, TV remotes, and an ever increasing number of work and leisure devices. Our command is sent, and bingo - our desires are instantly met, be it locally or on the other side of the world. In a blink we have instant gratification - usually! Parts do go askew. Once scrutinized, if the part can't be saved and salvaged and it is deemed and doomed as end-of-life, off to a dumpster it goes, and then off to a landfill - our land, our fill.

My "circuitryREcycled" works are about the fun and joy of new artistic creations from our technology discards. Freed from their external casings the exposed computer components offer the eye an intrigue of design, composition, texture and flow. Tearing off the casings from the heavy computer cables reveals a twisted array of colorful wires. The circuit boards, motherboards, fans, wires and all the interesting parts and bits seem to beg to be amalgamated and fused into a new synergy form."



Ms. Sterley's work as seen in Stright Hall, 3<sup>rd</sup> floor.

## CAROL'S CORNER

Hi Everyone!!

I hope you are all having a wonderful fall and winter and you aren't getting too much bad weather. Winter came fast in Indiana which, I know won't surprise many of you. We had snow the last week in October, and I do mean snow. But I must admit, we had a nice Indian Summer after that. Then it turned cold and snowy again for Thanksgiving. I shall bring you good and interesting news, but before I do, I need to pass along some sad news.



[Dr. John Sweeney](#) passed away on September 19. He taught in the Computer Science Department from 1979 to 1998 when he retired. He was 80 years old. I'm sure many of you remember him. He will be missed!! We send our sympathy to his family.

And, we send our sympathy to [Mike Everett](#) (5/97) on the death of his mother in October. And, as you may remember, Mike has been teaching for us on a part-time basis while still working for IBM. We're really enjoying having Mike as part of the team. It would be nice if we could have all our alumni here with us.

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[Nick DiBuono](#) (12/07) has been working at CTC in Johnstown as a software engineer. He really sends out kudos to his colleagues on helping him become as adept in his job as he now is and he attributes that great working relationship to the fact that all CTC employees work with their direct managers to create a set of goals they wish to accomplish in the next year. Right now his focus is on emerging web technologies and trends. He's been working on Web 2.0, Web 3.0, Semantic Web, Rich Internet Applications 5 and says the opportunities are practically endless for upcoming graduates and interns interested in this field. He's also involved in a Special Interest Group at CTC that uses the Google Reader RSS feed engine as a leverage point for sharing information.

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Dr. Shubra also heard from [Ross Pavlik](#) (12/80) who is now working as the IT Director for Helena Industries (and, no, I don't know where or what that is), so hopefully Ross will give us a really good, up-to-date story on his life since IUP. And, we both heard from [Dave Trainer](#) (5/02) and what an exciting life he's been leading. After graduation, he worked for PNC in Eric Meredith's Architecture Technology Group for three years before moving to Online Banking and left that in 2006 to work for TimeSys, a company in Pittsburgh that specializes in embedded Linux developer tools. While there, he learned web-based community development while working on their developer product and relaunching their website. He started a small web design/development business where he builds sites for small/medium businesses and writes about Web content management and open source software. Last year he left TimeSys to work as an ICT Volunteer for the US Peace Corps and was writing to us from a small volcanic island off the west coast of Africa where he's been living for over a year. While there he has built a website for PC Volunteers in Cape Verde ([peacecorps.org.cv](http://peacecorps.org.cv)), built another site to increase tourism ([www.cmmost.cv](http://www.cmmost.cv)), and helped to train the new group of Volunteers from the States. He's

been spending his days teaching computer and internet literacy classes, and thinking about branching out into new projects, like energy, agriculture and small business development. Since there's no internet there, he's working on building and launching an Internet cafe in his neighborhood. Congratulations to the [Ringhoff family](#) on the birth of Maya Claire Ringhoff at 8:17am on 10/09/08. She was 7 lbs 5 oz and 20 inches long. Last issue I mentioned that [Vickie \(Pearce\)](#) (12/94) was due in October and I thought it might be nice for her to be born at the Homecoming breakfast. Well, Vickie didn't agree with me and it's probably a good thing because the bad news is Maya was transported to West Penn NICU the day after she was born due to complications from a collapsed lung, and she had to stay for ten days, but everything turned out well and they finally were able to get her home. Big sister Rylee just LOVES her and won't leave her alone. Vickie sent pictures and what a little doll baby they have. And Rylee is taking really good care of her baby sister. She's going to be a terrific big sister. Rylee is just as cute as ever. You have a couple really cute kids, Vickie!!

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I had a really nice email from [Dave Murphy](#) (12/92) with some updates. First of all, Dave is no longer engaged - he became a happy husband in June of this year when he married Dawn, the love of his life. However, I guess there was some question that Dawn maybe just could have married him to change her name from Bartoszewicz but Dave is sticking with the love angle and I think that's probably accurate. Dave just recently wrapped up his role at Fannie Mae (after 3 years) and is moving on to a role with the Veterans Administration in the Office of the CIO, helping them develop and execute a strategic plan for the development of an integrated, department-wide enterprise architecture. He's been having the good fortune of having his company continue to grow with the recent addition of a few .NET developers to a contract they won with the Army National Guard. One exciting phase of Dave's life is that as an early 60th birthday present for his father, he traveled to Africa with his father, his uncle and [Mike Steele](#) (IUP grad around 6/92 I think) and climbed to the summit of Mt. Kilimanjaro. Dave attached a photo with the four of them and Dave hasn't changed much!! That was a wonderful gift for your dad, Dave!!! Great hearing from you - keep in touch!

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I had a nice email from [Michael Pace](#) (12/03), and I owe Mike an apology. He knows why but I don't really want to publish my flaws cause I know as far as anyone reading this is concerned, I don't have any. So, I shall apologize to Mike and continue. After graduation, Mike worked for Raytheon in State College, working mainly in information security. He was there for about 3 years and became a Certified Information Systems Security Professional (CISSP). He subsequently left Raytheon and, for the past two years he has been working at UPMC as a systems administrator. He will finish his masters of science in Information Assurance Engineering from Capitol College in December. We congratulate you on that effort and hard work, Mike. He's been married to Amber who is a Slippery Rock graduate (for which we forgive him) for over two years and they are currently living in Penn Hills in the suburbs of Pittsburgh.

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Had a nice email from [Karl Cherry](#) (12/86) and he's going to try to make a trip to Indiana to visit one of these days and he'll bring his bride, Theresa. Karl either said his bride of 19 years or his 19 year old bride; I'm not sure which it was. No, I'm just kidding, it was his bride of 19 years. They also will bring their two children who are four and seven years old. Hopefully that will be soon, Karl. It will be great to see you. Karl is still working at Fiserv in Pittsburgh.

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So, who was at the Homecoming breakfast??? First I'll tell you who WASN'T at the breakfast after telling me he'd be there and who decided on Key West instead??? That would be [Donnie Wishard](#) (5/95). And, Donnie is well aware that is has moved to the top position of my fecal roster since he actually promised me he would be here.

Editor's note: I am glad that I no longer hold the number 1 position on that list. Thanks Donnie.



But many thanks to those who were there and it was great to see everyone. I gave a homework assignment and can report new and exciting information from them. Such as: [Mike Bigrigg](#) (5/91) who says he graduated a long time ago (but it was really only 17 years), he's at CMU doing computer stuff; and I won't add the rest of the stuff he said cause it was all flattery about the greatest secretary on earth and I don't want to make her seem conceited. Mike's wife, Karen, has been teaching a Microsoft Office course here at IUP on Saturdays through Continuing Ed. Just as we're happy to have Mike Everett here with us, we sure do miss having Mike Bigrigg here with us.

[Mark Minser](#) (5/2000) is still at Raytheon in St. College doing Oracle DBA. In his spare time, he does some bike riding along the Ghost Town Trail and the Hoodlebug Trail. The rest of his spare time is spent driving back and forth to St. College - since he's still living in Armagh. Great to see you, Mark.

[Brandon Minich](#) (5/04) is at BAE Systems where he does on site web development work for the National Center for Medical Intelligence located in Fort Detrich in Frederick MD and he lives in nearby Mt. Airy. He's involved with the Sovereign Grace church in Frederick and for fun; he plays league volleyball and softball for the NCMI team. Brandon's brother, Chris, is now a student here in the Honors College studying English. Yeah, I know, it's the wrong kind of language, but what can we do??

[Joseph McCausland](#) (5/99) is working at ESRI in Johnstown PA. He works with Defense Solutions. He's been married for seven years to Kelly; their only child as of now is an English Mastiff. In his spare time and for fun, Joe works on cars. Good to see you Joe!!

Also, great to see [Randy Warren](#) (5/85). Randy is working at Alion Science and Technology in Annapolis Junction, MD and is primarily doing Java Web Services. He's been living in Annapolis for the past twenty-three years. Not too long ago he spent a week hiking and camping in Yellowstone National Park.

Randy's dad lives here in town and he gets here once in awhile to visit. Stop in any time you're in town, Randy. It's always nice to see you.

Editor's note: I loved Yellowstone.



[Justin Killian](#) (5/06) is working at Carnegie Mellon University doing Web development in ASP.net/C# for the Tepper School of Business - if you take a look at the web site, Justin probably developed it. They also just

launched their own alumni/social-networking website. Justin also has started grad school at CMU for a masters in Software Engineering. He's involved in softball, volleyball and bowling leagues and likes to take in the Pirates and Penguins games and hopes to hit a Steelers game in the near future. He has a motorcycle so you might just see him riding around Pittsburgh or he might be hanging out with people like [Chris Boehm](#) (5/06) and [Jon Chalecki](#) (5/06).



Editor's note: The three amigos ride again.

And, speaking of [Chris Boehm](#) (5/06) - he is now working at Dollar Bank in Pittsburgh doing programming and web design in .NET. He rewrote the banks' entire Mortgage website and coded a secure messaging system. He lives in Pittsburgh which happens to be his home town so he is very close to his friends and family. His lovely girlfriend is in her last year here at IUP. For fun, he frequents the city nightlife, watches sports and hangs out with friends. He's hoping to visit Europe within the next few years. Chris may have some more news for us soon and, no, it doesn't have anything to do with the girlfriend. Keep us posted, Chris!

[Anthony Popp](#) (12/98) was there with Victoria, who is 5 now, and Vivian who is now 3 and they are the cutest little things you've ever seen. Antionette who is now a year old was at home with her mommy. Tony is still working for ESRI in Johnstown doing server development in Java, Client development in C# and database development in Oracle. They are living in Johnstown PA with their Boston Terrier, Smoochie. I didn't get a chance to talk with them as much as I would have liked. But those girls are adorable. I heard there was a little food switching going on between the girls when no one was looking. What fun, Tony!!

[Zack Howe](#) (12/96) is working for Bank of America doing Data Architecture and ETL Design. Zack has taken up the "sport" of running and ran a half marathon in March and has been training for a full marathon. He's also going to try to fit in a trip to Disney in January. I think it's also safe to say Zack doesn't like COBOL. Zack's is still living in Atlanta. Zack is originally a townie, so stop in any time, Zack.

[Donna Rosenberger](#) (12/81) is an adjunct math faculty member for three difference colleges which include: Carlow University, Warner Southern College and the Community College of Allegheny County. For the past two years she was a counselor at "Pony Camp", Wesley Woods for the United Methodist Church. She's still helping with the Girl Scout Day Camp at Blue Spruce Park. Son, Don Paul, is now a Communications Media major here at IUP; Susannah is a Physics Education major in the Honors College here at IUP, and Danielle is in 5th grade at Ben Franklin Elementary and is in band and Orchestra.

[Chris Wastchak](#) (5/03) came with Jenny, Charlee and Eli. Those kids are adorable. Eli is like a midget football player. He is just solid. Both kids look like their dad. It was really great to see you guys!! I think I mentioned last time that Chris is now working for Gather.com. They're still in Pittsburgh. Chris sends me pictures of the kids every once in awhile and I sure do appreciate getting them, Chris. They are so much fun to watch grow up.

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[Jason Agostoni](#) (12/97), Jackie and Skyler were here. Jason is still working with CEI and Jackie is still working at Shadyside Hospital. Skyler is now two, and she was dressed for the runway and I don't mean where the planes land, I mean the models runway. How cute!! She also had a bit of the boo boo on her face and I heard it whispered about that there may have been some child abuse, but I chose to believe that the story they told me about her fall was the truth. Great seeing you guys again.

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I also heard a little bit of gossip during the course of the breakfast - but good gossip. Such as:

[Ryan Repinski](#) (5/00) is still at PPG and they are expecting a baby and probably have had the baby by now. Guess somebody needs to send us an email about that.

[Chris McLaughlin](#) (12/97) and wife are expecting and due in December. They maybe have had the baby by now, too; so somebody else needs to send us an email.

[Chuck Ruffing](#) (5/00) and his wife have had a second baby.

[Derek Fairman](#) (5/03) got married about a year ago.

Editor's note: There goes the old golf game!!!



[Jeff Kosto](#) (12/00), [Darren Flango](#) (8/05), [Tony](#) (5/92) and [Lisa \(Dillon\)](#) (12/93) [Bosslett](#), [Chris McLaughlin](#) (12/97), and [Geff Caruso](#) (12/00) are all still working at Raytheon. Geff Caruso and his wife had a baby about a year ago.

[Michael Rudge](#) (5/83) and Celeste were planning on coming but, at the last minute, Celeste ended up having to work at the YMCA, so I reluctantly gave them an excused absence. Sorry we missed you two.

Also given an excused absence was [Cathy \(Fleig\) Gruss](#) (12/85). I would have liked to see them, but, wait til you hear this!! First a little bit about the kids. The twins, Mandy & Becky are now fifteen and have tried a little bit of everything in pursuit of what they love. The boys, Alex, twelve and Evan, ten are still wrapped up in soccer, football, baseball, basketball but all four kids have branched into something really exciting. They have all discovered they love film acting, and, so, for the past three years, they have been traveling to NY to get the kids as much film acting as possible. The boys recently filmed a commercial for PA Donar and in October, Mandy & Becky filmed a twins role in a short SAG film called Standing Up by Nick Cabonaro. The kids have all met lots of celebrities by playing background roles in large films like 27 dresses and Stephen Seagals new Pistol Whipped. There are other large films that they have been in that aren't out yet. Now, in case you have the films at home, Evan is in the photo with the goat during the engagement party projector scene in 27 dresses and Alex is the altar boy in Pistol Whipped. Alex was the little boy, Ethan's, photo double in Will Smith's "I Am Legend" and he got to spend 10 days on set with Will. Mandy & Becky sat behind John Travolta, Robin Williams and Seth Green in the Disney movie coming out called Old Dogs which was one of Bernie Mac's last films. Well, anyway, they were planning on coming to the breakfast and wouldn't you know Evan got called for an audition on the Saturday of Homecoming. Well, Evan did get the lead role in that movie and it has started filming in Waterbury CT. Alex just finished up a film one weekend and started another one the next weekend. He also got stopped on the street at NYU to possibly be cast in a student's film the end of



November. Mandy & Becky have had three auditions in New York. In addition, Evan went on an audition for a role in TV series pilot of a young boy who creates animatronics. Alex and Evan will be in the Law and Order CI episode "Astoria Helen". Alex will be riding a bike and Evan will be in a group of kids coming out of school. Mandy & Becky are filming with Helen Hunt's new movie "Every Day". They will be middle school kids.

[Michael Rudge](#) (5/83) and his wife, Celeste, were planning on attending, but at the last minute Celeste had to work, so I reluctantly gave them an excused absence.

And [Ron Edwards](#) (8/89) was another one who said he'd be here and then discovered he had booked a trip to Kentucky. Well, that's just unacceptable. That's all I'll say on that subject.

I heard from [Kathy \(Scott\) Bachofer](#) (12/98), and she was writing from Brazil where she was spending a week helping with a training session. And, it's also where she was spending her next to last week of work. She was with Target Software for over eight years and said it was the ideal company. However, there were two buy-outs and the second one was what changed everything for Kathy. So, she's moving on to InVentiv Health which is located in New Jersey. But she said it's a very comfortable move since they were one of the Target clients and she's worked with them off and on for the past 8 years. For the past few years, she's been in a position which was directed towards software project and product management, and she also mentions with a smile that she got as far away from actual development as she could. In her new job, she'll be programming again for a year or so and then will be back to a project/product management role. On the personal side, life is great and she and her husband, Dave, have an adorable two year old named Ethan. Kathy sent a picture and he is a sweetie and he looks like his mother! Daddy was holding down the home front while mommy was in Brazil. Kathy is still running but has been recovering from a stress fracture she got after the San Diego marathon in June. She's running again now, but had to take three months off. Her real passion is quilting and she's doing lots of that, too. She's also gotten into art quilting. That sounds like a lot of fun!! Send pictures of some of your quilts, Kathy, and include Ethan in them.

[Brian](#) (5/02) and [Angela Rhea](#) are doing well and little Ava is now a year old and starting to talk and is walking all over the place and getting into everything. Angie is still working from home as an E-REP/Downline Manager with Avon, and Brian is doing really well with his recent promotion to Assistant Vice President in the IT department in Wachovia. He is hoping to get into the Fraud Investigation/Secret Service IT area soon as well and is really excited about that. Angie sent pictures of Ava and she is SO cute. Keep the pictures coming, Angie!

[Rick Engberg](#) (5/91) checked in with me. From the time of graduation until February of this year, Rick was working at the University of Pittsburgh as a Systems Programmer supporting National Institutes of Health (NIH) funded health care research. While he was working there, he noticed a common and recurring problem among the clinical research projects he supported and so he decided to play around with it in his spare time and see if he could come up with a solution. It started as an exercise in Enterprise Java, but it turned out to be much more relevant to clinical research than he had anticipated. Many researchers at Pitt began using the program so he transferred the intellectual property rights to Pitt, went through the technology transfer process, found an angel investor to fund a startup company, and in August 2006 Almedtrac LLC ([www.almedtrac.com](http://www.almedtrac.com)) was created to commercialize the Study 360 Clinical Trial Management System. In late 2007, he got a commitment from an investment group for a significant amount of money, but it was on condition that he leave Pitt and work for Almedtrac full-time. So in February 2008 he became President and CEO of Almedtrac Incorporated where

he spends most of his time courting investors and raising capital. He manages to engage in some sales and marketing and has netted Study 360 (that's the name of the software) an installed user base of seven, including one recent new customer in Belgium. Oh, and he even finds time to continue to develop and improve the software. On the personal level, he is the proud father of four year old Jacob; and, as an aside, Rick started writing this program at the time he learned Jake was on the way. He also plays guitar and sings in a rockabilly band called Highway 13 and if anyone is interested, you can google them (I did). His stage name is Woody.

[Josh Hankinson](#) (12/03) is still with Diamond Pharmacy here in town. He's working as a development supervisor, and they've been looking for a few good men or women. I got the job posted, Josh, and I hope you got some calls. If anyone out there is looking for something here in Indiana, give Josh a call - or call me I'll give you Josh's phone number.

I hope you all have a fantastic holiday and please write and tell me what Santa brought you.

[TOP](#)

## NEWS FROM THE LAB

--Joe Shyrock

Not a lot to update this semester, so this update will be rather brief. Firstly, the classroom of the future and Tompkins lab both got new machines in time for the spring semester. The biggest most noticeable change with these new machines is the flat panel monitors. All of the university vendors are now going exclusively with wide screen.

The university is also still running Windows XP SP3. Vista is being looked at but with the release of Microsoft's next operating system around the corner Vista may be skipped all together. I guess we'll have to wait and see.

Remember your I-card. Well its days as you remember it may be coming to an end. A replacement is being sought and may happen soon. This is pretty exciting, and may allow for some really cool new features.

Lastly the departments Linux server Kodiak is going off line and is being replaced with a new one named Redhawk. Redhawk runs Debian Linux. The previous Linux server (Kodiak) served the department for nearly a decade.

That pretty much sums up everything, have a good year!



## THE INFORMATION ASSURANCE PROGRAM

--Dr. William W. Oblitey

### Background

We established the Information Assurance program in 2002 following a quarter of a million dollar National Science Foundation grant that we obtained in 2001 and 2002. With the grant, we took leadership in Information Assurance education in the region by running three parallel workshops in the Summer of 2001 for faculty from across the nation. We repeated this in the Summer of 2003. The grant also allowed us to provide faculty with alternate workload equivalents to propose courses in information assurance and in the Fall of 2002, we put these courses together to constitute a concentration in information assurance for computer science majors and a minor for all students. IUP is the very first University to incorporate Computer Science and Criminology to constitute an Information Assurance discipline.



The concentration in Information Assurance consists of four main parts: 27 credits of the required Computer science core courses, 15 credits of controlled and upper level electives, three (3+) or more credits of Internship, and 18 credits of Minor in criminology. This concentration enables students to specialize as information security officers, a new and growing career field in the discipline of computer science.

The minor consists of 18 semester hours. Nine (9) semester hours are taken from the Criminology department (CRIM 101 or CRIM 102, CRIM 321 and CRIM 323) and the other nine (9) from the Computer Science department (COSC 110, COSC 316 and COSC 352). Equivalent courses may be substituted with permission of the chair of the respective department. Computer Science majors in the minor are required to take a fourth Criminology course instead of COSC 110 and Criminology students are required to take a fourth Computer Science course instead of CRIM 101 or 102.

We have continued to offer Summer Faculty workshops using funding from the National Security Agency. We have formed a partnership with many of the surrounding community colleges and some colleges. The community colleges we partner with include: Butler Community College, Westmoreland Community College, Penn Highlands Community College. The colleges we are partnering with include: the University of Findlay, the University of the District of Columbia, Spelman College, and Howard University.

In December 2001, we were accredited as a Center for Academic Excellence in Information Assurance Education, a designation awarded jointly by the National Security Agency and the Department of Homeland Security. The accreditation covered the NSTISSI 4011 and 4013 Certificate for entry level Information Systems Security Professionals and National Training Standard for System Administration in Information Systems Security respectively. In the Summer of 2004, we hosted a one-week Cisco boot camp conducted by Mr. Bob DuChrame of Cisco systems. Several faculty from the State System of Higher Education attended this cyber security boot camp and we also had a few members from our computer center attending and participating in the discussions. With the grant funding from the NSF and the NSA, we established two security laboratories. One is in Stright 107A and the other was a revamp and improvement of the old 'classroom of the future' to constitute a wireless and isolated security lab. We obtained switches, routers, and firewalls from Cisco Systems Incorporated and we use these in the Cyber Security lab to provide students with hands-on

security network design experience.

Through the Information Assurance program we participate in the United States Office of Personnel Management Scholarship for Service program. This is a unique program designed to increase and strengthen the cadre of Federal information assurance professionals that protect the government's critical information infrastructure. The program provides scholarships that fully fund the typical costs that students pay for books, tuition, all University fees, and an amount to purchase a laptop computer. Additionally, participants receive substantial stipends, more than enough to cover their room and board. In exchange for the scholarship and stipend, students agree to work for the Federal Government for a period equivalent to the length of the scholarship or one year, whichever is longer. Since we joined this program, we have obtained eleven student scholarships from the Department of Defense (DoD).

In the Summer of 2005, we put together a master's program in Information Assurance. This program involved the Computer Science department, the Criminology Department, the Department of Management Information Systems and Decision Science, the Department of Technology Support and Training, and the Department of Political Science. We completed the course proposals for the program submitted them to the Graduate School for approval. However, the then Provost informed us that due to cost, the program would not be approved.

## **Present Status:**

The Information Assurance program is working nicely. We were accredited as a Center for Excellence in Information Assurance Education in 2001 to award the NSTISSI 4011 and 4013 certificates. We were reaccredited in 2005 but this time to award the NSTISSI 4011 and 4012 certificates. It is time to seek reaccreditation again and this time we are requesting permission to award the NSTISSI 4011, 4012, and 4013 certificates. The type of certificate an institution is allowed to award depends on the mapping of the institution's courses to the stipulated requirements of the National Security Agency and the Department of Homeland Security. At the moment, we have mapped our courses to meet the requirements for the NSTISSI 4011, 4012, and 4013. There are more requirements that we should map courses to but these will be possible and very plausible if we have our master's program in place. Due to the mappings, majority of our courses now address aspects of security and our students are very security savvy.

## **Where We Go from Here:**

I see a good and brilliant future for our Information Assurance program. We have several courses in place and these attract our students and many more students from Criminology and MIS. We are careful to place a balance in the course contents to keep all the students. Looking forward, I will like to see a redesign of a few of the course and have them re-sequenced such that one leads to the other. That way, we can address serious issues in higher-level courses and all students will be at par because they have taken the prerequisites. I also will like to see faculty members given time release to design lab experiments that are challenging and augment the learning strategies presented and discussed in the classroom. It will also be nice to have a dual-boot lab to service several or perhaps all of the information assurance courses. At the moment the lab is such that faculty members have to spend so much time preparing for one lab experiment to go with a

lecture and then, quite often, before it is time to do the lab, another person has been to the lab and reorganized everything on the machines to the dismay of the students and the frustration of the faculty member. I will also like to see the master's program approved. This will help attract mature students and also aid in grant applications. In all, I dream of a very strong Information Assurance program that teaches students to write scripts and utilities that can be employed to tighten and secure various computing systems.

[TOP](#)

## ALUMNI CORNER

--Bruce Moser

I'll first say that I did not take the typical path in the computer science field. I began working shortly out of high school for a software development company called JC Computing while I was attending classes at IUP. Well actually attending classes is a euphemism in this case. I spent far too little time in class and far too much in front of a computer. It was 1989 and I was writing software in a fourth generation visual language. To put this in perspective, Microsoft Visual Basic 1 was not released until 1991. This was bleeding edge at the time. I learned a lot about business at this job: inventory, turns, warehousing, costs of goods sold, accounts payable, accounts receivable, general ledger, and on and on. At the time, I just thought it part of the job, but looking back it has been invaluable.

My next job started after I decided to drop out of college and it was with CeoDeux, Inc. This was my largest customer at JC Computing and they hired me away to lead their software development team. Becoming a leader at the ripe old age of 20 was an interesting experience to say the least. To all those that were in that group, I apologize profusely. I caution you now, being a manager is more work than you can imagine in most cases, so be careful to not be over critical of your managers until you have walked a mile in their shoes.

I then got the urge to go back to school. I am not really sure any longer what prompted it. But it happened. I enjoyed my time there, but I was quickly back in the work force for a company called Learning Sciences International. This was one of the best experiences of my life. The company delivered on-line education to public school educators. The software requirements were daunting. A web based application that handles security, data delivery, data collection, voiceovers, and animation over low bandwidth connections. My manager (Tony Matous also an IUP alumni) at this job was fantastic. I learned more about networks, databases, language structure, and security while working with Tony than I have any where since or before. The product of our efforts was a patented piece of software and a fantastically tight system designed specifically to do what it does. HINT: find someone to shadow and learn everything you can from them.

Due to personal reasons I had to leave Learning Sciences and eventually move on with the company I am currently with: Link Computer Corporation. I currently manage the Web Solutions Division, where we handle large web based applications for businesses. I do a lot of analysis, specification, estimates, and architecting in my current job, but I still get my hands into code one or two days a week.

## FEATURED



Since I have left IUP:

1. I have obtained my Masters Degree.
2. I have or had the following Microsoft Certifications: MCTS, MCITP, MCPD, MCA, MCSA, MCSE, MCDBA, MCAD, MCSA.
3. I have or had the following other certifications: PHP 5 certified, MySQL CMDEV, MySQL CMDBA.
4. I am a certified Project Manager from the Project Management Institute.

What have I learned from this adventure that spans almost twenty years? Well, a number of things.

1. Learn how to program – Notice I did not say write code. Anyone can learn to write code. Know when and why to use a “for loop” as opposed to a “while loop”. Understand the difference between a function and a subroutine with “byref parameters”. Be able to explain when to use an “if-elseif” structure over a “case/switch” structure. Understand memory efficiency as compared to code efficiency. To sum it up, don’t just be proficient; be professional in your art.
2. Get some business education – It may never help, but it also never hurts. Take an accounting class at a community college. Attend a marketing seminar for your company. Anything you can do to improve your knowledge makes you more rounded not to mention more marketable to employers.
3. Study, learn, digest, or cram to get the SQL language in your head – It doesn’t matter if it is T-SQL from Microsoft or SQL from Oracle. Almost nothing runs without database interaction in today’s world. Learn the subtle difference between an “inner, outer, left, and right join”; and when to use each. Know when to leverage a “where” clause versus a “having” clause. Why to avoid the “in” clause like the plague. Learn when sub queries are a saving grace and when they are the root of all evil. Learn what a SQL “shape” is and then figure out how it differs from a SQL “cube”. This information is out there, but most people are content knowing how to write “inserts, updates, selects, and deletes”. Separate yourself from your peers whenever you can.
4. Immerse yourself in disconnected states – The internet is the medium of choice in today’s development arena and regardless of how hard .NET studio and AJAX tries to convince you otherwise, the internet is one big disconnected state machine. The web still works the same way it did twenty years ago: post and get. There are still only two methods to pass information to a web page: forms or query string. There are two storage locations for data: server (session) and client (cookies). And my final note: the browser is singularly the most sophisticated dumb terminal ever created. All that being said, there are a lot of people in the web development field that have no idea how the magic machine works. Again this is an opportunity to separate yourself from your peers.
5. Take some time and get certified – There are actually two reasons for this idea. The first is that whatever language you are using at work probably has a certification for it. Ask your company to pay for you to get certified. First of all it looks good on a resume, but secondly and more importantly it exposes you to aspects of the language you may have never touched. This is a great way to pick up five or six tricks that none of your peers know about. The second reason is that it will challenge you in ways you would not expect. Try it. You will see what I mean.

Now there are other things that I think are worth doing, but they depend on your job and your desires.

1. Take some networking classes

2. Understand communication protocols
3. Take some number theory
4. Understand cryptology
5. Take a project management class

Once you have knowledge and experience do not be afraid to argue about how to do something. If you see a better way, make someone show you why you are wrong. I tell all my developers at one time or another, friction is not the force that slows you down, it is the force that allows you enough traction to move forward.

The most important thing though is to never become complacent in your own knowledge or your worth because whether you realize it or not the two are tied intrinsically together in the business world.

Finally, what do I see coming in the future?

I truly believe that large sums of money will be made in privacy. As individual computers get more powerful and parallel computers benefit from this in mass, the ability to encrypt data with current cryptology methods is failing fast. Someone will develop a new encryption routine that will make brute force an impossibility not just an improbability and that person will never have to work again. Governments will pay obscene amounts of money for that encryption.

The desktop is quickly being replaced by the web. Most of our desktop applications already have web based replacements or there are web based replacements in the works. Software as a service is the next big trend. Write it once, sign up millions for \$19.99 a year.



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