

Nittany Waypoints

The Newsletter for Penn State's
Online Geospatial Education Programs

fall 2011 issue 2

www.pennstategis.com



*Dr. Anthony Robinson,
Lead Faculty for Online
Geospatial Education*

Welcome from Anthony Robinson

I'm delighted to welcome all of you to the second edition of our Newsletter. In this issue you'll read about recent program highlights, new courses we're offering, stories about our faculty, and some of the exceptional achievements that our students have made in recent months. In 2010 I began working closely with my predecessor, David DiBiase, to begin working as lead faculty for our online GIS programs. My colleague, Todd Bacastow, continues to lead our Geospatial Intelligence efforts. Together, Todd and I are focused on sustaining our excellent track record and growing our programs in ways that reflect student needs and the ever-changing landscape of the geospatial information profession.

I'd like to directly address the recent abuse scandal at Penn State. We are experiencing a serious test of our resolve and character and I am confident we will emerge as a stronger, smarter community in the years to come. The despicable actions of a few do not represent the values of the many thousands of Penn Staters who are doing great work every day. With respect to our geospatial programs, interest and enrollments are at their highest levels on record, and we have not had students leave the program or decide not to take courses as a result of the scandal.

It is an exciting time to be engaged in geographic information science and applications. Demand for geospatial skills remains high, and students are coming to us from an ever-expanding range of backgrounds. To maintain our leadership in the field of online geospatial education, we are moving quickly to respond to emerging technical and analytical trends in GIS, and we are deeply engaged with our instructional design and education colleagues in developing new ways to teach online. A critical component of our success is what we learn from students and alumni like you. We rely on you to help us improve and to help guide our future directions. So let me know what you think – I'm always happy to receive your messages at arobinson@psu.edu.

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Editor's Note: As you read the articles, please note the live hyperlinks. By hovering over and clicking the links, you'll navigate to related online content or email.

MGIS Program Celebrates Its 100th Graduate

Spring 2011 graduation marked another milestone for the online geospatial education program—the graduation of its 100th MGIS student, Kent Stanton, in August. Kent lives in upstate New York, where he is employed at SUNY-Empire State College. His research interests lay in participatory GIS and his capstone project centered on a proposed information technology framework used to organize community science.

We thought it appropriate to take a look back at the development of the program leading up to the 100th MGIS graduate. The program started

MGIS Program Celebrates Its 100th Graduate *(continued)*

out as a non-credit GIS certificate and has grown into a suite of online geospatial education encompassing multiple certificates and degree programs with well over 30 faculty and hundreds of students enrolled each term. The GIS Certificate continues to see the strongest demand among our programs, with over 1700 Certificate graduates to date. Key program milestones are shown in the following timeline:

- 1997 Certificate Program conceptualized
- 1998 First student in GIS Certificate Program
- 1999 First GIS Certificate granted
- 2000 Esri track added (previously only GeoMedia)
- 2003 John A. Dutton e-Education Institute dedicated—where many of the programs' courses are designed and implemented
- 2004 MGIS Program started
- 2006 First MGIS graduate
- 2007 First Geospatial Intelligence student accepted
- 2009 Geospatial Intelligence option added to MGIS degree
- 2010 Homeland Security degree started—includes a geospatial track
- 2011 4,000th online geospatial program student and 100th MGIS graduate

Currently, the program includes 188 active MGIS students, and the December 2011 graduation conferred 17 more MGIS degrees, bringing us to a total of 124 MGIS graduates to date.

Recent MGIS graduates from ...

Spring 2011: Mansour Arshon, Anderson Brooms, Andrew Davis, James Earwood, Jimmy Kroon, Ryan Liddell, Kenneth Pelman, Kimberly Pettit, Kent Stanton, Quaye Trimble

Summer 2011: Matthew Beckley, Jill Bernhard, Brendan Collins, Eric Cromwell, and Edwin Tadlock

Fall 2011: Brian Aldrich, John Bambrick, Desmond Carroll, Paulina Fernandez Luengo, Linda Foster, Andrew Furne, Christy Graves, Elena Horvath, Susan McClendon, Maureen O'Mara, Jeff Rester, Samantha Sancho-Herrera, Jon Soderberg, Kevin Stofan, Duane Treadon, Sarah Troedson, and Howard Yamaguchi



Five MGIS graduates travelled to University Park, PA for Fall 2011 graduation ceremonies

back row: Beth King, Jon Soderberg, John Bambrick, Anthony Robinson front row: Frank Hardisty, Sarah Troedson, Linda Foster, Paulina Fernandez Luengo



MGIS graduates joined advanced degree graduates of other programs at Penn State's Eisenhower Auditorium

What's New?

Course in Cloud and Server GIS



Course Co-Author
Dr. Frank Hardisty



... this is one of the first courses we know about that has fully implemented this approach using Amazon EC2. It is a pioneering way to teach server GIS.

—Course Co-Author
Sterling Quinn

Among the number of new courses launching in 2011-12 is GEOG 897C, Cloud and Server GIS. The course is designed by Dr. Frank Hardisty and Sterling Quinn to help students “learn to leverage cloud computing to make server GIS simpler” and is part of the program’s expanded offerings in programming and customization. Students will find the course practical in its approach which investigates three key cloud service models: infrastructure services, platform services, and software services.

Weekly deliverables are designed to help students learn how to apply cloud computing resources to server GIS problems and large geocomputation problems while gauging the appropriateness of cloud computing for a variety of GIS problems. Throughout the term students will investigate technologies such as Amazon’s Elastic Computer Cloud (EC2), ArcGIS Server, GeoServer, PostGIS and ArcSDE, Google Fusion Tables, Boto, and ArcGIS Online. The course prepares students to create and publish cloud GIS services and students will work on a term-long project in which they will design and execute a final project using cloud and server GIS and publically present their results.

The course will be offered during Winter and Summer terms and co-authors Frank and Sterling will co-instruct the course. While the majority of enrollments will come from current students, certificate and MGIS alumni are welcome to enroll to support their professional development. Cloud and Server GIS is expected to be a popular elective, so if you’re interested in enrolling, contact World Campus at 800-252-3592. You’re welcome to direct any questions about Cloud and Server GIS to Frank Hardisty at hardisty@psu.edu or Sterling Quinn at: sdq107@psu.edu .

Esri Development Center (EDC) comes to Penn State

This past year saw the establishment of the Dutton e-Education Institute's Esri Development Center (EDC). The Dutton EDC serves two purposes, one narrow--to help Penn State students who wish to program using Esri's GIS software, and one broader--to provide access--to tools that solve problems using geospatial data.

In service of the first, narrower, purpose, students in the Earth and Mineral Sciences (including online GIS programs, and the Department of Geography) can acquire, at no charge, any of Esri's current software packages. This includes ArcGIS Server hosted on Amazon's cloud computing facilities. Please contact the center manager, Frank Hardisty, for more information about this possibility at hardisty@psu.edu.

In service of the broader purpose, the Dutton EDC documents and publicizes GIS resources; including courses, documentation, and open source GIS. The EDC facilitates student creation of innovative geographic software services, using Esri and compatible technology. Students in Penn State’s online GIS programs have produced an outstanding collection of technology projects, and the EDC will help students continue that tradition of excellence.

The EDC also awards a yearly scholarship to a student who made outstanding use of ESRI software. Please find out more by visiting our EDC website: <https://www.e-education.psu.edu/edc/>

GEOINT Program Announces 2011 Murphy Award Winners Vanessa Damato and Bill McDevitt



Lt. Michael P. Murphy

The Murphy Award in Geospatial Intelligence was named in honor of U. S. Medal of Honor recipient and distinguished Penn State alumnus Lt. Michael P. Murphy and recognizes achievement by a graduate student who is serving or has served in the U.S. Armed Forces or with the U.S. Intelligence community. Recipients have demonstrated exceptional contributions to the discipline after completing the Graduate Certificate in Geospatial Intelligence, as part of the Master of Geographic Information Systems program at The Pennsylvania State University.

Vanessa Damato possesses a diverse background in geospatial modeling and analysis techniques, human terrain mapping and all source intelligence analysis. Vanessa has over eleven years of experience in providing analytical, leadership and production support to DoD tactical, operational and strategic level customers in the joint military and inter-agency intelligence community environments. She currently serves as lead Geospatial Scientist at Special Operations Center – Pacific Command (SOCPAC) Pattern Analysis Section. As an employee of GeoEye Analytics, Vanessa has applied empirically driven approaches toward geospatial predictive analytics to support Irregular Warfare and Unconventional Warfare planning initiatives for USSOCOM's Joint Intelligence Center – Pattern Analysis Section (JIC-PAS), Inter-Agency Task Force (IATF) and Theater Special Operations Centers. She is a former U.S. Naval Intelligence Officer and veteran of Operation IRAQI FREEDOM. Presently enrolled in the Masters in Geographic Information Systems program through Penn State University's World Campus, Vanessa also received her Penn State and USGIF Certificates in Geospatial Intelligence in 2009 and Master of Science in Organizational Psychology from Emporia State University in 2000.



Vanessa Damato

Bill McDevitt is a 15-year employee of Science Applications International Corporation (SAIC) where he is the lead mission planner on a classified UAV project. Prior to joining SAIC in 1996, Mr. McDevitt was commissioned a U.S. Naval Flight Officer in 1984 and subsequently flew various carrier-based electronic warfare aircraft, primarily the EA-3B Skywarrior and the EA-6B Prowler. He also has experience in the EA-6A Electric Intruder, the A-6E Intruder, and NKC-135 and EC-24 electronic combat support aircraft and was a participant in Operation Desert Shield. Since joining SAIC, Mr. McDevitt was instrumental in the successful operational test and deployment of the B-2A Spirit stealth bomber and has been in his current position for seven years. He is a recognized expert in combat mission planning and threat avoidance as well as developing virtual terrain databases for visualization of beyond line-of-sight UAV operations. He is a graduate of Villanova University (1984, BA – History) and Regis University (2005, MS – Computer Information Technology) and is currently completing his MGIS degree at The Pennsylvania State University where he also received his Penn State and USGIF Certificates in Geospatial Intelligence.



Bill McDevitt

The award is made possible by the gracious gifts of the GeoEye Foundation, the United States Geospatial Intelligence Foundation, and Dr. & Mrs. Todd S. Bacastow. For more information on the award or Lt. Murphy's heroic story, contact: Dr. Todd S. Bacastow at bacastow@psu.edu.

Penn State Attends 2011 Esri International User Conference

Nearly 14,000 Esri software users are drawn together in San Diego each July at the Esri International User Conference, one of the largest GIS events in the world. Penn State Online Geospatial Education looks forward to this event each summer as the premier opportunity to meet in person with current and former students, and to speak with prospective students about our program on the trade show floor. Our faculty present in sessions, as do our students. And faculty, students and alumni alike look forward to the Penn State evening event—for the last two years a spectacular sunset harbor cruise.

Look for more information about Penn State's presence at the 2012 User Conference in the June 2012 newsletter. It's said a picture is worth a thousand words—so enjoy pictures from the 2011 UC and harbor cruise. We look forward to seeing you in San Diego in 2012!



Faculty work the Penn State booth in the exhibit hall



A proud Penn State alum spotted in the exhibit hall



The captain makes his rounds during the harbor cruise



Alumni, students and faculty enjoy evening cocktails



Another beautiful sunset over downtown San Diego

Meet Your Peers ... Lynn Hand, MGIS '10

Ed. Note: We received an enthusiastic email this past spring from Lynn thanking the program for helping her advance her career with Trimble Navigation.

Lynn started the GIS certificate program in 2006, eventually deciding to apply to the MGIS program, which she completed in 2010. Her capstone project looked at live vehicle tracking/real-time service requests for mosquito control operations. Lynn had been working at Trimble in operations, and, after completing her MGIS, she received a substantial promotion.

We asked Lynn if we could quote her, and here is her reply. Lynn writes:

With the utmost honor and happiness I am writing to tell you that I have received a big promotion at work directly as the result of my MGIS degree from PSU. In May I was promoted to be Business Area Director for Local Government in the GIS division at Trimble Navigation.

The decision to start a Masters degree at age 50, while working full time, could be described as admirable, or as delusional. There were times I was sure it was the latter. But all the work, all the sacrificed weekends, all the late night pressing to meet project deadlines, all the reading assignments, papers, and quizzes, and all the years of doing absolutely nothing other than working and studying just paid off for me, big time. I could never find the words to tell you what this means to me and to my family, nor how to thank you for such a phenomenal, and respected program.

My new position has taken me places I never could have hoped to go including Paris, Madrid and Nurnberg—I'm just getting started. So I thank you, Penn State, for literally giving me the world.

Lynn, we derive just as much excitement from notes such as yours as you did from your promotion—thanks for making us proud!

Share your experience ...

Network with current and prospective students!

The [Penn State GIS Alumni map](#) allows viewers to zoom in to areas of interest and locate program alumni. If you would like your contact information to be made available to prospective and current students and fellow alumni, contact [Beth King](#).

Have you done something interesting with your Penn State Online Geospatial Education?

[Contact us](#) directly and tell us about your new career, award, or interesting project resulting from your experiences as a student in Penn State's Online Geospatial Education Program.



... the kids on the Lion are two of my 8 grandchildren. I came to graduation which was totally awesome!

—Lynn Hand



Lynn and colleague prior to presenting her capstone project

Faculty Spotlight ... Meet Jim Detwiler

Jim is no stranger to students with interests in GIS programming and customization—as a Senior Lecturer, he currently instructs (and has authored) a wide range of courses, including GEOG 485: GIS Programming and Customization (recently redeveloped into a course on geoprocessing scripting with Python, GEOG 489: GIS Application Development, GEOG 863: GIS Mashups for Geospatial Professionals.

However, many of our more recent students may not realize that Jim has been with the online geospatial program from its beginnings and helped author much of the original core GIS certificate curriculum. In addition, Jim is the manager and lead developer for many of the custom software applications that help our geospatial education program office run, especially the database that manages student grades, feedback, MGIS advising, student information and much more. Jim holds a master's in geography from the University of Delaware. We asked Jim:



Jim Detwiler

What is your favorite part of your job in our online geospatial education program?

My favorite part of teaching in the online geospatial education program is working with students who are highly motivated to learn. Seeing people apply what they've learned to solve problems and advance their careers is very rewarding. I also take great satisfaction from seeing how the IT infrastructure I've built for the program helps to make lives easier for our faculty and students (e.g., the grade report letters that help students get reimbursement from their employers).

Can you provide an interesting personal story about you?

In my spare time I enjoy playing and watching ice hockey. I'll be attending the NHL's annual outdoor game being held this year in Philadelphia on Jan. 2. I'm looking forward to Fall 2013 when Penn State's new ice arena is scheduled to be completed.

Which of your lessons do you find most challenging to convey to students?

The courses I teach involve computer programming, which is a skill that is hard enough for students to learn in a face-to-face setting. Creating an online environment in which students can learn to program is not easy. It is also quite a challenge to deal with the different skill sets students bring into my courses ranging from no programming experience to the ability to teach the course themselves!

Faculty Spotlight ... Meet Jim Sloan

Most of our GIS students have worked with Jim Sloan—Jim serves as instructor on two of the three core courses, GEOG 482: The Nature of Geographic Information, where he serves as lead instructor, and GEOG 484: GIS Database Development. In addition to teaching, Jim spends much of his time as a Researcher/Cartographer in the Center for Environmental Informatics. Jim came to Penn State in 1986 and began teaching GIS in 1994. In 1997 he took a position with the University of Florida Department of Geography, returning to Penn State in 2002. We asked Jim:



Jim Sloan

What is your favorite part of your job in our online geospatial education program?

What I appreciate most about the job is hearing back from the students, beyond the homework they submit -- that they have a job prospect because of our courses, that they applied something we taught them in their current job, that they appreciate our competent, professional, personal approach to what we are doing, that they recommended us to someone else. I've had students from years past remind

Meet Jim Sloan *(continued)*

me of a specific assignment that left an impression on them. It's good to know that they come away having had a positive experience, sometimes even with fond memories. I'd be remiss, too, if I didn't share that working with my fellow faculty members and with our grading assistants is a constant source of gratification.

Can you provide an interesting personal story about you?

My GIS teaching career started in 1994, when I was given a month to prepare a four-week, 3-credit Arc/INFO boot camp course taught in the summer at Penn State. Those students met four times a week for four hours and covered a semester's worth of material and did quite well. It is possible that that initial experience conditioned me to expect dedication and high-caliber work from all my students. Haha. Fortunately the majority of the students I've had in the online program have not disappointed me in this regard; which is saying a lot since they aren't traditional resident students, typically having job and family commitments to balance with doing their course work.

Which of your lessons do you find most challenging to convey to students?

The two courses I currently teach, GEOG 482 and GEOG 484, are high-enrolling courses, so it is a challenge, especially in the online environment, to get to know students. Fortunately, the team project that is part of Geog 484 gives me a chance to witness them interact with each other, albeit in writing, providing me with more insight into the caliber of our students. The collaborative aspect of the project can be a challenge to the students, but most rise to the occasion, enabling us to demonstrate that our program offers a viable teamwork experience as part of our curriculum.

Students should be on the lookout for a **new course on spatial databases being developed by Jim Detwiler and Jim Sloan for 2012**. The current vision for this course is to cover two broad topics: a) more advanced content on Esri's geodatabase technology, and b) spatial-analytical capabilities of relational database extensions that can be exploited outside of a GIS framework.

Stay Connected ... with Penn State GIS

Our faculty present their research and educational work at a wide range of conferences. Please contact us if you'll be at one of these meetings—we'd love to meet you in person! Visit [Where Are Faculty?](#)

- Association of American Geographers (AAG) Annual Meeting: New York, NY February 24-28, 2012
- Esri Developer Summit: Palm Springs, CA March 26-29, 2012
- International Spatial Ecology Conference: Krokkeiva, Norway July 3-6, 2012
- Location Intelligence/Oracle Spatial User's Conference: Washington, DC May 22-23, 2012

We also invite you to visit the Online Geospatial Education Program Office, where you'll find:

[Program Announcements](#) and [Career Opportunities](#)

Newsletter Naming Contest Winner ... Mark Brady

Faculty voted on top suggestions, with Mark's suggestion of "Waypoints" winning the vote. We amended the final name to "Nittany Waypoints". Our contest winner, Mark, is longtime GISer residing in Florida, who works for the South Florida Water Management District, specifically on ecological and hydrologic projects related to Lake Okeechobee and its watershed. Mark completed the GIS certificate and was recently admitted into the MGIS program. In gratitude for his winning suggestion, Mark will receive a Penn State sweatshirt. Thanks Mark, and all who participated!