## Welcome from David DiBiase

David DiBiase
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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.*

Welcome to the inaugural edition of *Cardinal Points*, the Penn State Online Geospatial Education Newsletter.  With this bulletin we hope to keep you in touch with what's going on in our program.

It's been a pleasure and a privilege for me to lead Penn State's Online Geospatial Education Program since its inception in 1998-99.  Since then we've grown from a four-course, non-credit certificate program to a suite of programs including graduate certificates in GIS and Geospatial Intelligence, a Masters degree in GIS, and an option in Penn State Online's Master of Professional Studies in Homeland Security. To date nearly 4,000 adult learners have entrusted us with their continuing professional development, and about 500 more seek us out each year.

Our program faculty include nearly 50 full- and part-time educators located at Penn State's University Park campus and around the world. We'll profile many of these in future editions of the newsletter. As our faculty has grown, so too has our Program Office team, which now includes Anthony Robinson, lead faculty member for GIS programs; Todd Bacastow, lead faculty member for GeoIntel programs; Beth King, Assistant  Program Manager for Advising; and Program Assistants Jan Moyer and Susan Spaugh.

After 22 years at Penn State, I'm ready to seek new challenges. In August I'll begin a new career in Redlands, CA as Esri's Director of Education, Industry Solutions, while continuing to teach online for Penn State on a very part-time basis. Of many happy memories from Happy Valley, I'll be proudest of the quality of the co-workers and students with whom I have learned so much.

## Directions Media collaborates in producing "Inside Geospatial Education and Research

Penn State Online Geospatial Education and Directions Media have partnered to produce "Inside Geospatial Education and Research", a six-episode webinar series running 2010-2011.  The series is designed to highlight key trends within the GIS education and research communities, both within Penn State and in the broader academic community.

The first webinar, titled "The New Geospatial Jobs and How to Get Them", ranked in the top ten Directions Media webinars of all time drawing over 900 participants and resulting in hundreds of downloads of the archived edition.  David DiBiase, introduced the recently designed US Department of Labor job categories for the burgeoning GIS workforce and

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gave participants a glance into the competency requirements designed by the DOL's Education and Training Administration to help further define our growing field. Rich Serby, President and founder of GeoDecisions, a Colorado Springs-based employment firm specializing in the GIS workforce, added a ground truth perspective evaluating the new categories and competencies against what his firm sees in current hiring trends. The webinar resulted in over 100 questions from attendees many of which were addressed in two follow-up articles at Directions Magazine: Question and Answer 1 and Question and Answer 2 .

"A Paradigm Shift in Geospatial Intelligence?" was introduced by Todd Bacastow, Lead Faculty member for Geospatial Intelligence at Penn State. This webinar brought together leaders from the GEOINT community reflecting on the recently held GEOINT3.0 Symposium in New Orleans. Panelists included Ted Cope from the National Geospatial-Intelligence Agency, Sue Kalweit from Booz-Allen-Hamilton, and Max Baber from the US Geospatial Intelligence Foundation. The group engaged over 400 audience members in a discussion of the impacts of cultural geography on intelligence gathering, the ongoing shift from Cold-War technologies and data gathering methods, and how the next generation of analysts can prepare for the challenges that lie ahead.

We have just completed our third webinar, "Research Innovations at Penn State's GeoVISTA Center." Upcoming topics for include the national GeoTech Center and its role in shaping geospatial education in the US and a panel of top online Master degree programs in GIS to evaluate key opportunities and challenges for delivering the best possible value to GIS students. Look for invitations to these upcoming webinars in your email inbox soon. To access our archived webinars link click the embedded links above. And to offer comments please contact Wes Stroh.

*"Inside Geospatial Education and Research" highlights key trends within the GIS education and research communities, both within Penn State and in the broader academic community.*

*—Series Moderator Wes Stroh*

# What's New?

## Dr. Jay Parrish joins Penn State's faculty

We are pleased to welcome Dr. Jay Parrish, Professor of Practice, to the Online Geospatial Education faculty, whose expertise lies in image processing, remote sensing, and geobotany. Prior to joining the faculty full-time, Dr. Parrish served as Pennsylvania's State Geologist. He has also served in a variety of private and public sector positions, as faculty at Bowling Green State University, and on numerous geospatial academic advisory boards. Current research interests include energy related uses of remotely sensed data and geobotanical remote sensing. A full bio for Dr. Parrish can be accessed at the program's faculty website.

## Redesign of remote sensing and image analysis curriculum

Remote Sensing faculty members Jay Parrish, Karen Schuckman, and Mike Renslow, have been working to enhance and expand our course offerings for the 2011-12 academic year, including:

**"Exploring Digital Imagery and Elevation Data in GIS Applications"** will introduce students to methods used to acquire, process, and analyze digital imagery and elevation data for GIS applications. Topics covered will include an overview of remote sensors and platforms, georeferencing of remotely sensed

## What's New?  (continued)


*Dr. Jay Parrish*


*Karen Schuckman*


*Mike Renslow*

data, photogrammetry, digital terrain analysis, and digital image analysis. The course will be taught at a beginner level, assuming the student has some familiarity with GIS and mapping. Students will achieve learning objectives through hands-on lab exercises and quizzes.

**"Topographic Mapping with Lidar"** is an in-depth study of lidar system design and operation, data acquisition and processing, and quality assurance/quality control for topographic mapping projects. Students will produce mapping products from raw lidar point cloud data and will evaluate these products using national standards and guidelines. The course is taught at an intermediate level and assumes that the student has a grasp of fundamental GIS and mapping concepts and has some experience using ArcGIS or similar GIS software. There will be a number of hands-on lab exercises, quizzes, and an independent final project.

**"Remote Sensing for the Geospatial Intelligence Professional"** applies digital image processing and analysis methods to typical application scenarios faced by the geospatial professional. The course will focus on airborne and spaceborne optical sensors, but will also cover synthetic aperture radar and video surveillance technologies as they are used in geospatial applications. The course is taught at an intermediate level and assumes that the student has a grasp of fundamental GIS and mapping concepts and has some experience using ArcGIS or similar GIS software. There will be a number of hands-on lab exercises, quizzes, and an independent final project.

**"Remote Sensing Seminar"** applies cutting edge digital image processing and analysis methods to unusual application areas to address timely real-world questions, from monitoring a tense political situation in Sudan, to the invocation of the International Charter for the Japanese earthquake/tsunami, to hyperspectral analysis of historic artifacts. The course is taught at an advanced level and assumes that the student has substantial experience remote sensing and image analysis.  In to a strong focus on technical advances in remote sensing, each case study will also focus attention on the ethical and political considerations associated with these difficult problems.  Students in this course will complete hands-on lab exercises, discussion assignments, and an independent project.

### Review our Courses—course star ratings come to Online Geospatial Education courses!

We are proud of the courses offered in our program.  For that reason, if you have taken a course with us, we would like you to visit our new "Review our Courses" site and write a review of it.  To do this, you must first apply for an account.  You'll also be able to view the highest rated courses and read the reviews.

### "Location Intelligence for Business" targets business GIS and location intelligence students

As the geospatial enterprise continues to gain traction in commercial settings, we are developing a course to in introduce geospatial technologies and geographic principles to the business world.  This course is co-authored by Wes Stroh, Dr. Dennis Bellafiore, and Directions Media's Joe Francica.  Students will investigate how geospatial technologies are applied to market research, advertising, sales planning, product management and site selection though a cross-section of industry sectors.  Students will also investigate emerging technologies such as RFID, augmented reality and real-time data acquisition in the business context.  The course is designed to serve an elective for certificate and Master degree students as well as a stand-alone course for business professionals and decision makers.  Location Intelligence for Business will be offered in the 2011-2012 academic year.
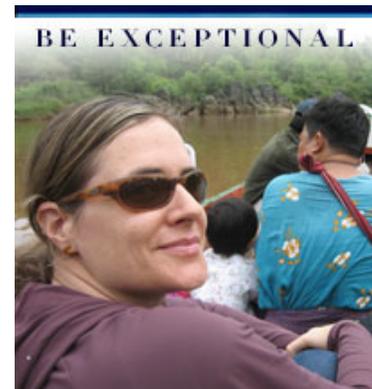
## "Be Exceptional" ... Meet Your Peers

Lyndy Worsham wears a headlamp and sits on a straw mat, creating maps while connected to the Internet via her cell phone. In 2007 the Thailand Burma Border Consortium hired her to conduct research on the root causes of displacement of refugees.



BE EXCEPTIONAL

   The job requires her to make thematic maps and provide on-site GIS technical support and training for ethnic community-based organizations. However, because she initially lacked GIS experience, she needed training that was easily accessible.

Lyndy turned to Penn State's online certificate program in GIS to help her develop the technical skills required to create the maps and support the refugees who assisted her along the Thailand-Burma border. Her online learning experience was unique; she printed out her assignments and carried them with her on the long, winding bus ride to the border.

   Often she sat in her bungalow and connected her computer to her cell phone so she could upload her weekly assignments. Now that she has completed the program she sees a significant difference in the maps she produces, and she can provide far better training for her staff.

*My experience has changed my life by giving me high-demand technical knowledge and troubleshooting skills.*
            *—Lyndy Worsham*

   Today those community organizations along the border collect critical data related to displaced villages, relocation sites, military battalions, and development projects from affected areas across 37 townships and 6 states and divisions of Burma. The information is published in an annual survey that tracks the scale, distribution, and characteristics of internal displacement in eastern Burma. Lyndy's maps are a major part of this publication, and they help policymakers, donors, and concerned citizens better visualize the human rights situation in eastern Burma.

## 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.

## Penn State Geospatial Intelligence faculty and student win awards

   The United States Geospatial Intelligence foundation announced 2010 Awards recipients at last fall's GEOINT Symposium in New Orleans.  Penn State faculty member Dr. Dennis Bellafiore received the Academic Research Award.  He is co-author of Penn State's GEOG 885 Advanced Analytic Methods.  Over the past 20 years, he has served as a team, leadership and organizational development advisor to many GIS  and IT projects at state, regional, county and local government levels in Pennsylvania.



*Dr. Dennis Bellafiore*

   Donna Bridges, a graduate of our Geospatial Intelligence certificate program, received the Academic Achievement Award.  Donna also holds bachelor's and master's degrees from The George Washington University and is currently pursuing a Master of GIS degree from Penn State where her interests lie in the cognitive aspects of spatiotemporal reasoning.  A full press release is available at the USGIF website.

## Faculty Spotlight … Meet Michelle Zeiders

Michelle Zeiders is familiar to the majority of GIS certificate students as instructor for GEOG 483 and GEOG 484, or both.  Prior to joining the online geospatial program, Michelle spent six years working as an analyst/programmer in the Geographic Information Analysis Core for the Social Science Research Institute (SSRI) and Population Research Institute (PRI) at Penn State.  Her work supported "research activities by facilitating the use of geospatial data in the social sciences."  Prior work experience includes research and education at North Carolina State University, civil engineering, and MapQuest.  She holds bachelors and master's degrees both from Shippensburg University.  I asked:

*Michelle, on top of Table Mountain, Cape Town, South Africa in 2004*

**What is your favorite part of your job in the online geospatial education program?**
*Being able to provide learning opportunities to non-traditional students around the world is the best part of my job.  I also enjoy the one-on-one interactions with my students.  I would not be able to have nearly as much contact in a traditional classroom of 65 or 80 students.*

**Can you provide an interesting personal story about you?**
*I am currently studying to become an advocate for children in my community that have been diagnosed with a disability.*

**Which of your 484 lessons do you find most challenging to convey to students?**
*Students work together in small teams to complete a collaborative final project in GEOG 484.  The idea of participating in a collaborative environment does make some students a little apprehensive.  However, I cannot tell you how many times students have come back to me at the end of the course to specifically communicate how valuable working together with their peers turned out to be.   The final project seems to help strengthen concepts taught in the prior lessons by affording each of the teams the chance to discuss, test and then apply what they have learned.*

## Stay Connected … with Penn State GIS

Our faculty present their research and educational work at a wide range of GIS and Mapping conferences. Please contact us if you'll be at one of these meetings—we'd love to meet you in person!  For more details, link to Where Are Faculty?

- American Society for Photogrammetry and Remote Sensing (ASPRS):  Milwaukee, WI  May 2-5
- Information Systems for Crisis Response and Management (ISCRAM):  Lisbon, Portugal  May 8-11
- *The National Map* Users Conference and USGS GIS Workshop:  Lakewood, CO  May 10-13
- University Consortium for Geographic Information Science (UCGIS):  Boulder, CO  June 22-23
- 25th International Cartographic Congress:  Paris, France  July 4-8
- ESRI Education and ESRI International User Conference:   San Diego, CA  July 9-15
- North American Cartographic Information Society Annual Meeting:  Madison, WI  October 12-14
- GIS-Pro 2011 Conference, Urban and Regional Information Systems Association (URISA):  Indianapolis, IN  November 1-4

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

Program Announcements, including upcoming speakers, new courses and other items of interest
Career Opportunities, where you can view posts or add a job opening yourself
Student Lounge, in which to meet each other outside of courses