

Geospatial Educators' Roundtable #2

Wednesday, January 16, 2013



WELCOME! We'll be starting in just a minute.



Nora Parker

Webinar Producer,
Directions Media



Stephen McElroy, Ph.D.

GIS Program Chair,
American Sentinel
University



Steven Hick

GIS Director, University of
Denver



Rich Schultz, Ph.D.

Associate Professor of
Geography and
Geosciences, Elmhurst
College



Regina Ryan

Associate Director, GIS,
Johns Hopkins University



Beth Fletcher King

Senior Lecturer,
Department of
Geography, Penn State
University



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WEBINARS**

UPCOMING GEOSPATIAL WEBINARS

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Thursday, January 24, 2013: Improve Your Geocoding Results - Learn How

Tuesday, January 29, 2013: Learn About Energy Mapping with Open Standards

Thursday, January 31, 2013: LiDAR Technology - Introduction and Applications

AUDIO

You may use your computer's speakers, or listen by telephone

For VoIP: You will be connected to audio using your computer's speakers or headset.

For telephone: US attendees dial in (312) 878-0511 (Other countries, please refer to the list provided in your invitation).

Who is Here?

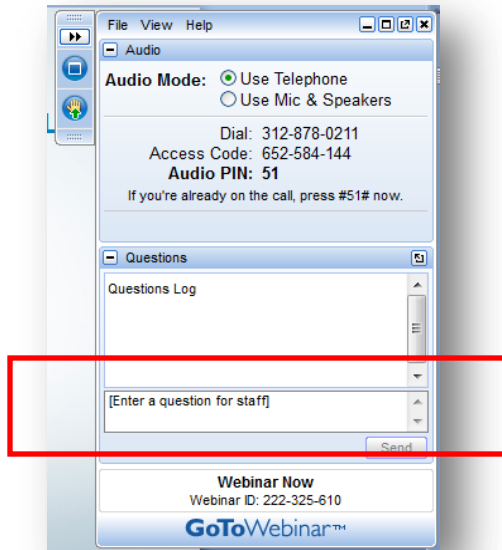


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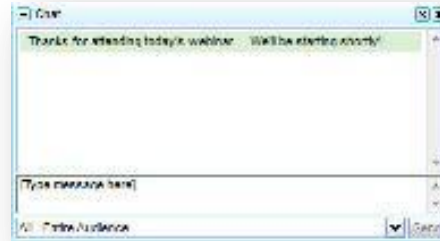
Housekeeping Tips



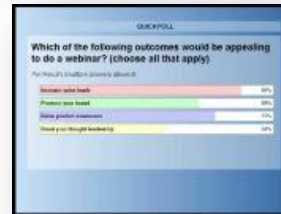
Ask a **question!**



... or send a **Tweet** at @directionsmag, and include #EduWebinar



Access a PDF of the **slides**, access the speakers **bios**



Participate in **polls**



An on-demand **recording** of today's webinar will be made available



Give us your **feedback** as you depart

Agenda

- Welcome
- Introduction to programs
 - American Sentinel University
 - University of Denver
 - Elmhurst College
 - Johns Hopkins University
 - Penn State University
- Panel discussion
- Q&A



Poll

Are you actively considering furthering your education?



- a. I'm actually doing so already
- b. Yes, I'd like to enroll soon
- c. Yes, but not sure when
- d. I'm just considering my options
- e. Other

American Sentinel University



Stephen McElroy, Ph.D., GISP

GIS Program Chair

American Sentinel University

American Sentinel University



- American Sentinel University has been offering online, accredited degree programs in business, technology and health care for more than 10 years.
- Offering a suite of 4 GIS degree programs:
 - Associate of Science Geographic Information Systems
 - Bachelor of Science Geographic Information Systems
 - *One of the only 100% online GIS bachelor's degrees in the country*
 - Geospatial Information Systems Graduate Certificate
 - Master of Geospatial Information Systems
- Classes taught by GIS professionals working in the field
- World-class student support from enrollment to graduation.
- One of the lowest tuition rates among online universities.

New This Academic Year



- **Geospatial Information Systems Graduate Certificate**
 - Accelerated education in the real-world use of geospatial information in a way that is applicable across a broad spectrum of economic sectors and industries.
 - Can be completed in one year for less than \$8,000.
- **Master of Geospatial Information Systems**
 - Teaches professionals to apply geospatial technologies and visualization strategies to real-world systems for modern-day problem solving.
 - Unique opportunity to solve a real workplace challenge throughout the duration of the program.
 - Can be completed in under two years for less than \$18,000

MGIS Project Track

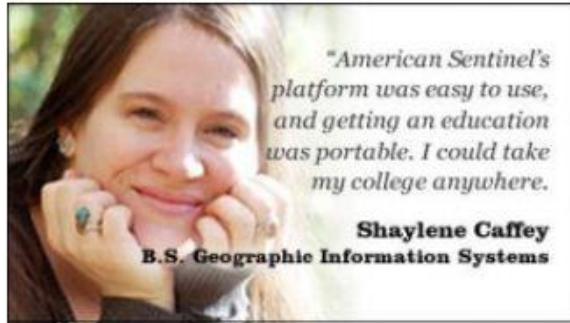


- Students work with a faculty mentor and define, research and implement a geospatial project that solves an organizational challenge of their choosing.
- Students take 2 additional project courses to complete their challenge.
- Projects must encompass the various phases of the Esri Professional Services Framework:
 - Planning and scope
 - Requirements analysis
 - Design and development
 - Deployment

Real Students, Real Results



Maps Fanatic and Mother of Three Pursues GIS Education at American Sentinel



When Shaylene Caffey was a little girl, one of her favorite things to do was get out the atlas and plan out her family's road trips.

"Most teenagers had posters of heartthrobs on their walls; I had maps all over mine," Shaylene admits. "I think I loved GIS before I even knew there was GIS."

After growing up in northwestern Missouri, Shaylene enlisted in the United States Army at age 18 to fulfill her passion for making an impact. She chose a job in military intelligence at first, but when she

found out that she could work with maps, she jumped at the chance. Shaylene became a terrain analyst for a year and a half before being discharged in fall 2005 due to a hip injury.

From Career to Motherhood

Later that year, Shaylene and her new husband and baby girl moved to Kansas City, Missouri, to be near family. There, she landed a role as a GIS technician for a large oil pipeline, creating land parcel files for all 1,200 miles of the pipeline. Several years into the job, she decided she wanted to go to school and came across American Sentinel University, one of the only colleges offering an online bachelor's degree in GIS.

"With the help of the GI Bill and the flexibility that American Sentinel provided, it just fit into our family's life," says Shaylene, who started her B.S. Information Science (GIS specialization) in February 2009 and became pregnant with her second child later that year. "American Sentinel's platform was easy to use, and getting an education was portable. I could take my college anywhere."

Measuring Educational Outcomes: Lumina



Learning Area	Specific Outcome	Evidence: Student ePortfolio
Applied learning	Working skill with ArcGIS software, data acquisition and manipulation.	Course exercises and projects requiring the development of skills in using ArcGIS software and geospatial data.
Broad, integrative knowledge	Fundamental understanding of geospatial data, information systems and software alternatives.	Research papers on data acquisition, data mining, open GIS systems, and alternative commercial GIS software.
Intellectual skills	Knowledge to address geospatial problems and to design geospatial investigations.	Research papers and project assignments in a wide variety of fields with geospatial challenges.
Specialized knowledge	Skills with statistical integrity, cartographic representation, data visualization and map interpretation.	Coursework, comprehensive project assignments or capstones on topics of significant scope.
Civic learning	Skills and knowledge to address challenges faced by people and their communities.	Research papers, projects, capstones on public policy issues.

University of Denver



Steven Hick

GIS Director

University of Denver



Geographic Information Science at the University of Denver

- Our faculty practice what they teach!
GIS professionals and full-time faculty lead your online classes.
- Cutting edge GIS training and education prepare students to apply GIS to solve real-world problems.



Welcome to the

UNIVERSITY OF DENVER

online campus



- **Certificate of Advanced Study in Geographic Information Systems** in our *University College*.
 - 22 GIS certificate classes to choose from featuring a wide range of topics
 - 24 credit (quarter) hours to complete certificate
- **M.S. degree in Geographic Information Science** in the *Department of Geography*.
 - 9 master's degree courses to choose from culminating in capstone project
 - 24 additional credit (quarter) hours to complete degree
- Students may *transfer* up to 10 quarter hours from another institution



Jobs, jobs, jobs – Network!

- Career Exploration
- Resumes and Cover Letters
- Job and Internship Search
- Interviewing skills development
- Department of Geography devoted to maintaining network of internship and job opportunities.
- Get involved: GIS Colorado, GITA, URISA, ASPRS, AAG, IACA, and many others.



Where do our students go from here?



- Brian Brill



- Forensic Animation Specialist @ Mountain Graphix, Inc.



Elmhurst College



Rich Schultz, Ph.D.

Associate Professor of Geography and
Geosciences
Elmhurst College



Elmhurst College Programs in GIS and Geospatial Technologies



- Elmhurst, Illinois – 17 miles west of Chicago, IL
- Founded in 1871
- Private, liberal arts-based, 3500 students
- More than 50 majors and 11 graduate programs





Elmhurst College



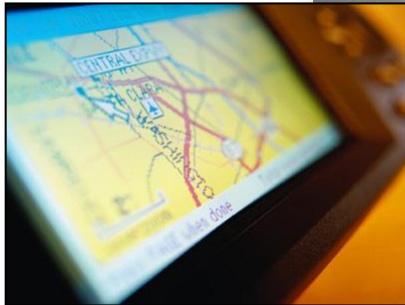
Geospatial Technologies and GIS at Elmhurst College:

Department of Geography & Geosciences (since 1940)

1. Major in Applied Geospatial Technologies (AGT) – began in 2011

School for Professional Studies

2. Online GIS Certificate Program – began in 2005 (no degree required for admission)
3. Online Graduate Program in Applied Geospatial Sciences (AGS) – Begins **Fall 2013** (graduate certificate and Master's Program with thesis)





What Do Non-Traditional Students Want?



- Flexibility and convenience
 - Elmhurst College GIS Certificate Program is entirely online
- Develop skills and not just “theory” or “button pushing”
 - Our program is aligned with the Geospatial Technology Competency Model (GTCM)
- Achieve GISP on a national basis
 - Curriculum and all coursework is accepted by the GISCI
- Employers want programming skills, so students desire to learn customization
 - Two (2) programming courses (Python and Geodatabase Customization) are required in the program – highly unique for GIS Programs



Where Our Graduates Work



1. Local, Municipal, County and State Government Applications
2. Environmental Planning
3. Military, Defense, and Homeland Security
4. Geospatial Intelligence (GeoINT)
5. Healthcare applications
6. Facilities Management
7. Private Consulting



- The vast majority of our graduates are accepting paid internships and entry-level positions in the municipalities near the Chicago Metropolitan area. Our placement is nearly 100%.

Student Case Study

Ms. Christina Colantoni



- Traditional undergraduate student in 2007
- Education major who liked technology
- Took one class in geography as General Education course
- Changed major to geography/geosciences
- Internship at Argonne National Laboratory in mapping of nuclear proliferation
- Attained government security clearance
- Completed undergrad major
- Hired by Northrup Grumman as GIS Specialist
- Currently working for Esri – St. Louis, MO



Johns Hopkins University



Regina Ryan

Associate Director, GIS
Johns Hopkins University



Johns Hopkins University Online GIS Programs

gis@jhu.edu



JOHNS HOPKINS
UNIVERSITY
Krieger School of Arts and Sciences
Advanced Academic Programs



The Technical Advantages of Johns Hopkins

- Online education at Johns Hopkins is all about the technology
- Students receive instruction using:
 - Blackboard Learning Management System as a virtual classroom
 - Adobe Connect as a virtual lecture hall
 - Voice Thread for multi-media presentations
 - Cloud computing for software and data delivery
- Student receive online orientation and work directly with their faculty advisor as well as Capstone advisor throughout their course of study

Studying Online GIS with Johns Hopkins



- Johns Hopkins offers a Master of Science in GIS and a Post-Baccalaureate certificate in GIS,
- Both programs are entirely online,
- Both programs introduce cloud computing as a geospatial infrastructure,
- Our faculty are recruited from the very federal agencies that create geospatial data and geospatial data services.



Course of Study in the GIS Program

- The emphasis of the online GIS program is in GIS architecture – how the application is put together with the database
- Students can complete the GIS Certificate in as little as one year
- The MS in GIS degree is designed for a part-time student to complete in 2 – 3 years
- Students in the MS degree complete a capstone project with a selected advisor on a topic of their choosing

Penn State University



Beth Fletcher King

Senior Lecturer

Department of Geography

Penn State University

Online Geospatial Education at Penn State



Online programs started in 1999, have served over 4700 students in all 50 states, Europe, South America, Africa, and Asia

Geographic Information Systems

- Post-baccalaureate Certificate in GIS
- Master of Geographic Information Systems

Geospatial Intelligence

- Graduate Certificate in Geospatial Intelligence
- Geospatial Intelligence Option, Master of Professional Studies in Homeland Security

Professional Development

- Classes can be taken by non-degree seekers

PENN STATE | ONLINE
www.worldcampus.psu.edu

PENNSSTATE
World Campus

**Geospatial
Education Portfolio**



MGIS Student Experience

- Apply for one of 3 intakes per year
- Entrance interview
- Responsible Scholarship and Professional Practice Workshop
- Talk to someone from advising team at least every other term
- Capstone Development Workshop
- Capstone project
- Graduation
- Exit interview



Certificate Program in GIS, MGIS - Year 1

Term 1: GEOG 482: Nature of Geographic Information

Term 2: GEOG 483: Problem Solving with GIS

Term 3: GEOG 484: GIS Database Development

Term 4: GEOG 485: GIS Programming and Automation

```
1 # Reads through a text file of soccer (football)
2 # scores and reports the highest number of goals
3 # in one game for each team
4
5 # ***** DEFINE FUNCTIONS *****
6
7 # This function checks if the number of goals scored
8 # is higher than the team's previous max.
9 def checkgoals(team, goals, dictionary):
10     #Check if the team has a key in the dictionary
11     if team in dictionary:
12         # If a key was found, check goals against team's current max
13         if goals > dictionary[team]:
14             dictionary[team] = goals
15     else:
16         pass
17     # If no key found, add one with current number of goals
18     else:
19         dictionary[team] = goals
20
21 # ***** BEGIN SCRIPT BODY *****
22
23 # Open the text file of scores
24 scoresFilePath = "C:\Users\jvanoson4\Documents\PracticeExercises\Scores.txt"
25 scoresFile = open(scoresFilePath)
26
27 # Read the header line and get the important field indices
```



MGIS - Year 2

Term 1: GEOG 583: Geospatial System Analysis and Design

Term 2: GEOG 584: Geospatial Technology Project Management

Term 3: GEOG 489: GIS Application Development

Term 4: GEOG 862: GPS and GNSS



I am Jan Van Sickle, and I am the course lead instructor.

I have worked with GPS for more than twenty years. I was fortunate to work with the first commercially available GPS receiver, the Macrometer in the early 80s. I have received my PhD in GIS Engineering. I have written three texts on geospatial topics including *GPS for Land Surveyors*.

MGIS - Year 3

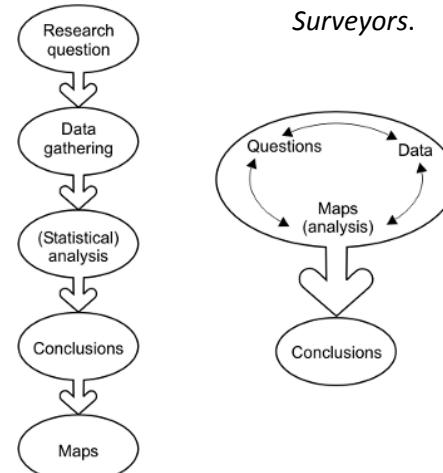
Term 1: GEOG 486: Cartography and Visualization

Term 2: GEOG 586: Geographic Information Analysis

Term 3: GEOG 596A: Individual Studies - Peer Review

Term 4: GEOG 596B: Individual Studies - Capstone Project

www.open.ems.psu.edu



Panel Discussion

1. What skill sets are important now?
2. If I'm a career-changer, how can I get my foot in the door?
3. Online education and geospatial leadership
4. Training vs. education
5. Research opportunities

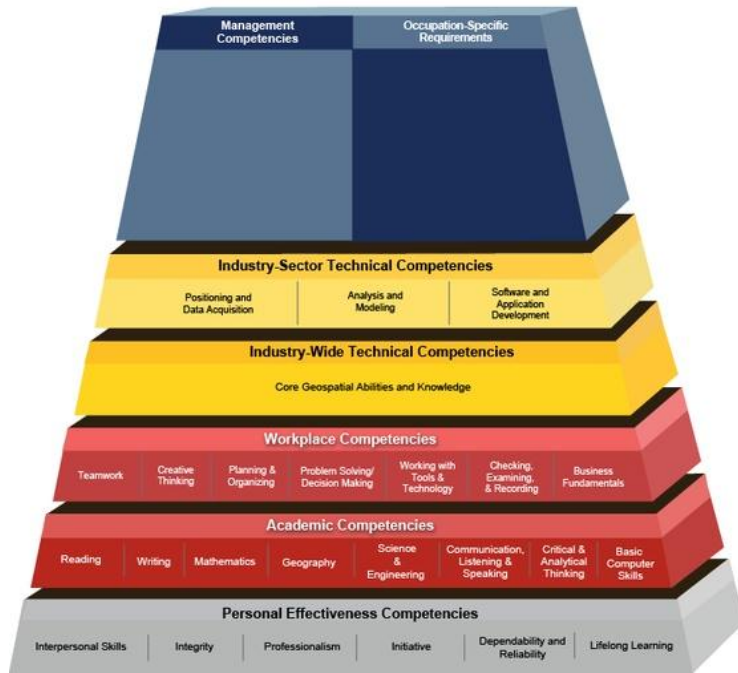
Panel Discussion

1. What skill sets are important now?

2. If I'm a career-changer, how can I get my foot in the door?
3. How has the geospatial industry been a leader in online education?
4. Training vs. education?
5. Research opportunities?

What skill sets are important now?

- Intellectual curiosity
- Critical thinking
- Adaptability
- GTCM Skill sets
- DOL Stats



The US Department of Labor has identified geospatial technologies, along with nanotechnology and biotechnology, as one of the three most important high-growth industries in the 21st century. Data from The Bureau of Labor Statistics indicates that the 2010 – 2020 job outlook for geographic information systems (GIS) professionals at all skill levels has never been better and is growing much faster than average. All geospatial occupations are expected to grow by at least 14 percent. This growth has created a need for advanced geospatial education programs that keep students current on the best practices for the implementation of geospatial technology in a wide range of industry sectors.

Panel Discussion

1. What skill sets are important now?
- 2. If I'm a career-changer, how can I get my foot in the door?**
3. How has the geospatial industry been a leader in online education?
4. Training vs. education?
5. Research opportunities?

If I'm a career-changer, how can I get my foot in the door?



Panel Discussion

1. What skill sets are important now?
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- 3. How has the geospatial industry been a leader in online education?**
4. Training vs. education?
5. Research opportunities?

How has the geospatial industry been a leader in online education?



Training vs. education?

1. What skill sets are important now?
2. If I'm a career-changer, how can I get my foot in the door?
3. Online education and geospatial leadership
- 4. Training vs. education?**
5. Research opportunities?

Training vs. education?

- Differences between “education” and job “training”
- Software vendors and third party firms provide “training”
- Colleges/universities provide formal education for undergraduate/graduate credit towards degrees
- Students gain knowledge of important processes
- Certificate vs. Certification – GISP is a portfolio-based credential that includes both education and skill sets
- Today’s employers want those who are educated but with spatially oriented skills sets

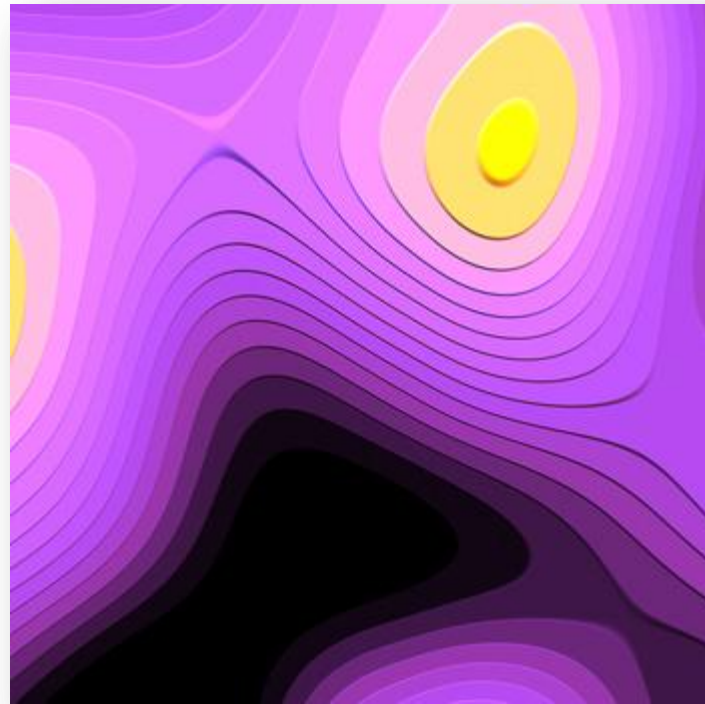


Panel Discussion

1. What skill sets are important now?
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3. Online education and geospatial leadership
4. Training vs. education
- 5. Research opportunities**

Research opportunities

- Student research interests
- Faculty research ideas
- Aim to publish
- Internships



Additional Resources



Dr. Stephen McElroy:
Stephen.McElroy@americansentinel.edu

AS: www.americansentinel.edu/information-technology/a-s-geographic-information-systems

BS: www.americansentinel.edu/information-technology/b-s-geographic-information-systems

Masters: www.americansentinel.edu/information-technology/master-geospatial-information-systems

Certificate: www.americansentinel.edu/information-technology/gis-graduate-certificate

Admissions: Admissions@americansentinel.edu

Phone: 866.922.5690



Dr. Rich Schultz
(630) 617-3128
richs@elmhurst.edu

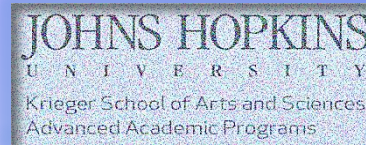
[Elmhurst College School for Professional Studies \(SPS\)](http://Elmhurst College School for Professional Studies (SPS))

(630) 617-3300 oaga@elmhurst.edu

public.elmhurst.edu/adult/gis

Elmhurst College Online GIS Certificate Program:

public.elmhurst.edu/adult/gis



gis@jhu.edu

GIS@JHU gis.jhu.edu/

Online Admissions for the GIS programs

advanced.jhu.edu/admissions/apply/index.html

Financial Aid for the GIS programs:

www.jhu.edu/finaid/part_time.html



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Q&A



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