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### Wildfire Awareness and Education with ArcGIS Online

*Douglas Miskowiak, Senior GIS Education Specialist*

Spring 2016 marks the eleven-year anniversary of the Wisconsin wildfire commonly known as the Cottonville Fire. The Cottonville Fire is the most thoroughly photo-documented and one of the most intensively studied fires in Wisconsin's history. GIS technology afforded the means to quickly collect and present documentation of the fire with maps, photographs, damage assessments, and other records. Cottonville was mapped in real-time by the Wisconsin Department of Natural Resources (WDNR) using ESRI's then popular ArcView 3.2 software. During the fire, maps produced by the Incident Management Team assisted in fire suppression, evacuation and structural protection. Desktop GIS mapping proved its utility during the run of the wildfire, but data collected could not be digitally shared in real-time, and post-fire data sharing proved cumbersome. With help from the University of Wisconsin-Stevens Point GIS Center and ESRI's ArcGIS Flex API and later ArcGIS Online, today data about the fire are now easily shared and accessed to improve wildland fire awareness and education. Future wildland fire fighting and recovery efforts stand to benefit from the incredible data collection and sharing efficiencies of ArcGIS Online and the ArcGIS Data Collector App.

#### Incident Overview

On Thursday, May 5th, 2005 at 1:31 p.m., the Adams County, Wisconsin Sheriff's Department received a report of a grass fire located in the township of Preston, an area within Wisconsin's Wildland-Urban Interface (WUI), where structures and the fire prone natural environment intermix. Dispatch went out to the WDNR and the Adams County Fire District with units arriving at the scene

*Cottonville Fire smoldering near its origin.*



*Cottonville continued on page 4.*

[www.uwsp.edu/geo](http://www.uwsp.edu/geo)  
[www.uwsp.edu/gis](http://www.uwsp.edu/gis)

**You can get there from here!**



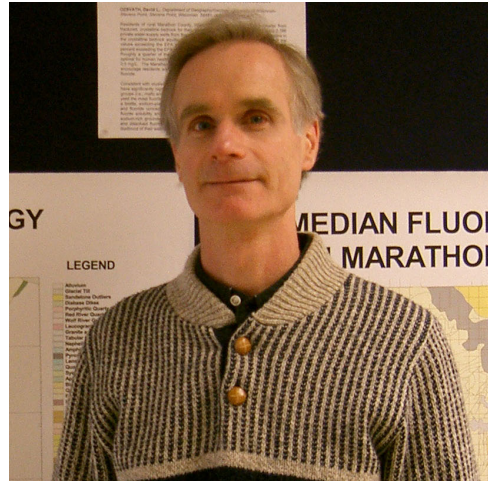
## Chair's Corner

**Dr. David Ozsvath - Professor and Chair, Department of Geography and Geology**

Greetings from the Chair – I hope that you enjoy this inaugural edition of *UWSP Geo News*! As a recipient of many such newsletters from my undergraduate and graduate departments over the years, I have come to appreciate the role that they play in keeping me connected with my former mentors and peers. There was a suggestion from the editor that I come up with a clever title for this column, but I am somewhat apprehensive of saddling my eventual replacement with something that s/he finds peculiarly suited for my personality, so I chose to play it safe...

### Faculty and Staff Update

Much has been happening in the Department, and I will use this opportunity to bring everyone up-to-date with some recent changes. In terms of faculty and academic staff, the “old timers” now include Professors Keith Rice, Michael Ritter, Karen Lemke, Neil Heywood, and yours truly, although I expect that list to change within the next five years or so as we approach the golden age of retirement. Many will also remember Professors Kevin Hefferan, Eric Larsen, Samantha Kaplan, and Ismaila Odogba, who are still in the primes of their careers and going strong. Our most recent hire, Timothy Kennedy, a GIS specialist, joined us in Fall of 2012, bringing with him an enthusiasm for revising curricula and rejuvenating our programs. Karl Ryavec left us for the University of California – Merced in August 2014, but unfortunately we were not able to hire his replacement because of the budget cuts that were unveiled in February 2015. The affiliated GIS Center (under Keith Rice’s Directorship) employs Doug Miskowiak, an Education Specialist, and Christine Koeller, a Faculty Associate, who offer a number of courses that are taken by working professionals, as well as by our majors. We are also privileged to have Lisa Theo continuing in her position as an adjunct lecturer, providing top-notch instruction in human geography. Last year Lisa’s teaching load in the Department was reduced when she became the Coordinator of URSCA (Undergraduate Research, Scholarship, and Creative Activities) on a part-time



basis, so now the entire campus benefits from her commitment to excellent undergraduate education.

For those who might not know, the most dramatic personnel change of the past few years was the retirement of our former Academic Department Associate (ADA), Diane Stelzer, in February of 2012. Diane had managed the Department’s administrative affairs for many years (starting before any of the current faculty had been hired), so her departure was not without some fear and trepidation on our parts. However, we were fortunate to find a very capable replacement in Mary Clare Sorenson, who took over the reins in March 2012 (I like to say that we “lost Brett Favre but gained Aaron Rodgers”; however, I have found that for various reasons this analogy is fraught with potential difficulties, so I’ll refrain...). In addition to bringing her friendly self, Mary Clare also brought a candy dish for the Department Office that is filled every morning, thereby establishing a new tradition. And interestingly enough, this story includes a plot twist, because Diane has now returned to UWSP, working part-time for the GIS Center, so the final chapter has not yet been written.

### Curricular Changes

Department curricular changes during the past year have been almost as dramatic as was Diane Stelzer’s retirement! The Geoscience major, which we first offered in 2008, was revised during the 2014-15 academic year to combine physical geography offerings with geology and eliminate the previously



required options. This gives students more flexibility to select those courses that best suit their specific interests (which can range from traditional geology to climate change) as they map out their four-year plans. Meanwhile, the Geography major was revised this Spring to also eliminate options and maximize the choices students have in selecting coursework. At the same time, we revised all of the Department minors and added two new ones (Urban Planning and Geodesign, and Geographic Information Science). The new and revised minors replace the former options within majors and permit students to focus their studies in recognized subfields, if desired.

In addition, we hope to eventually develop the new Geographic Information Science (“GIScience”) minor into a major, working with faculty from the Department of Computing and New Media Technologies.

As you might expect, there is a growing interest across campus in using the power of geospatial technology to augment other programs. In addition to seeing an increased demand for existing geospatial courses, we are finding a need to develop new classes. This semester, Tim Kennedy is offering “UAS Systems” (aka “drones”) as a Special Topics class, which has attracted interest from outside the Department (including Chancellor Bernie Patterson!) and has been showcased for UW-System Regents and Wisconsin Legislators who visited the campus this Spring. Next Fall Christine Koeller will offer a new course (“Location Analytics”) intended specifically for Business Administration majors, and Tim Kennedy will teach an Investigation Level course in the General Education Program titled “Our Digital Spatial World”.

### Stay Connected

Perhaps one of the most obvious changes is represented by the development of this

newsletter by Doug Miskowiak, of the GIS Center. Doug has not only spearheaded this effort to strengthen ties with our alumni, but he is also heading up an ad hoc recruitment committee that is seeking ways to better advertise our programs to prospective students. These things have not received the attention that they deserve, and I am very appreciative of Doug’s efforts. It is my hope that you will not only read this letter but also take an active interest in the Department’s affairs, even contributing to one of the future newsletters! And remember that your “word of mouth” about Geoscience and Geography programs at UWSP is one of the best recruiting tools we have.

In closing, I invite each of you to visit the Department whenever you are in town. If you give us advance notice, we would love to arrange for you to speak to students in our classes. Although we endeavor to provide our majors with an accurate picture of what their future careers might entail, nothing compares with the perspective of a graduate from one of our programs.

So that’s the latest Geo News from the Department Chair. I hope that this newsletter finds you well and prospering in whatever path your life has taken.

*David L. Ozsvath*



*Cottonville continued from page 1.*

beginning at approximately 1:40 p.m. Investigations later found that a man was using fire to clear the area around his fire ring of dry grass, ironically in attempt to prevent the threat of a future campfire accidentally becoming a wildfire. His fire escaped and burned 3,410 acres through the communities of Big Flats, Preston and Colburn. The WDNR engaged 199 personnel, 76 fire engines, 38 tractor plows, and four fire suppression aircraft to combat the fire. Additionally, 22 fire departments, seven private dozers, 5 crews, two out-of-state aircraft, and 18 other agencies were deployed. By the time the fire was contained at 12:30 the next morning, 300 structures were threatened, but saved, and 90 structures were destroyed, including 30 residences.

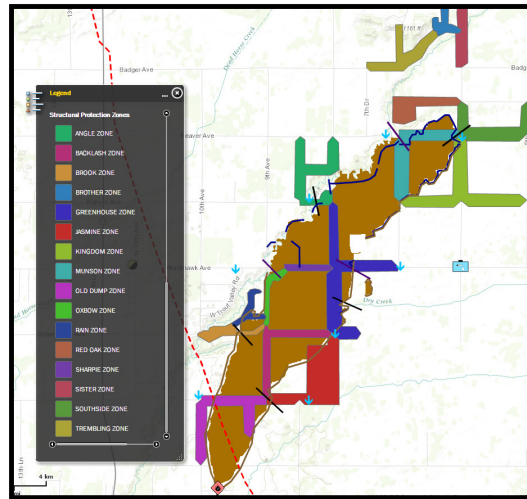
**Pre-Fire Conditions**

The area had last received precipitation on April 26th and 27th with 0.23 and 0.06 inches respectively. Relative humidity through the evening of May 4th and the morning of May 5th did not reach 60 percent and moisture recovery in fuels was minimal overnight. With humidity dropping to the mid- to upper teens by the afternoon of May 5th, dead fuels were very receptive to igniting. Live red pine fuel moisture, measured at an established sampling site in the nearby Township of Rome, was at the year’s lowest level when the fire started. The drop in moisture in pine species is typical during the spring of the year, and correlates with the most susceptible time for wildland fires in the lake states. The U.S. drought monitor documented conditions that bordered between normal to abnormally dry.

**GIS Supports Situational Awareness and Response**

GIS mapping started within two minutes of the initial report of the fire, using information from radio traffic to locate the origin and early fire progression. Concurrently, multiple fire towers (Dyracuse, Necedah, and Skyline) reported the smoke to the WDNR dispatcher, indicating a rapidly spreading fire. Soon a WDNR fire patrol aircraft was overhead, and with eyes in the sky and boots on the ground, many units equipped with Global Positioning Systems (GPS) and cameras, real-time information coupled with existing data provided

*Structural Protection Zone Atlas for the area affected by the Cottonville Fire.*



situational intelligence about the fire. Pre-made and updated county-wide structural protection zone atlases, combined with intelligence reports from the air, indicated that numerous structures were threatened. Extreme fire intensity mandated the use of a flanking attack by wildland fire fighters to contain the blaze, while fire departments worked to protect structures in present danger. Heavy units (a combination of a large fire engine and a tractor plow unit), heavy dozers, Single Engine Air Tankers (SEATs), CL-215 “scooper” planes, and rangers were dispatched to strategically flank the spreading wildland fire. Concurrently, fire departments were directed to threatened structures that could be protected without placing units in excessive and unwarranted danger. As field and air reports communicated moderating fire intensity, aerial and ground forces were reassigned to help knock down Cottonville’s forward progress.

Protecting human life is the number one priority of both fire and law enforcement personnel. The rapid progression of Cottonville forced a race between limited available law enforcement resources and the oncoming front of flames to evacuate people from harm’s way. Structural zone maps proved invaluable in assisting evacuation efforts with the limited available force. Coupled with field observations conveying the progression of the fire, these maps helped to efficiently direct mobilized



evacuation forces to threatened structures.

Post-evacuation and post-fire, geospatial information was used to return folks safely home. Though safety concerns remained, it was determined that returning residents home would provide needed information for responding to potential rekindles of the blaze. Structural and property assessments informed residents and the Red Cross about damage to properties. Abundant numbers of printed maps were provided to evacuees and the Red Cross. The maps were used to direct people to shelters, around road closures, to people in need, and then safely back home.

*Photos from the Cottonville Fire, courtesy of WDNR.*



## Learning from Cottonville

The Cottonville Fire was the most photographed and videotaped forest fire in the history of Wisconsin, and had the most GPS data gathered of any Wisconsin historical fire as well. All photographs, video, and GPS data were used to determine the precise fire progression using time stamps in the associated data. The point-in-time fire progression showed that the Cottonville Fire acted in a manner largely predicted by applied fire behavior models. Remarkably, just one day prior to Cottonville's ignition, an aerial flight documented pre-fire land cover conditions with black and white aerial photography. Following the blaze, post-fire multi-spectral aerial imagery was collected to showcase the fire's effects. This data resource is valuable for understanding the pre-fire load and land cover conditions of the area.

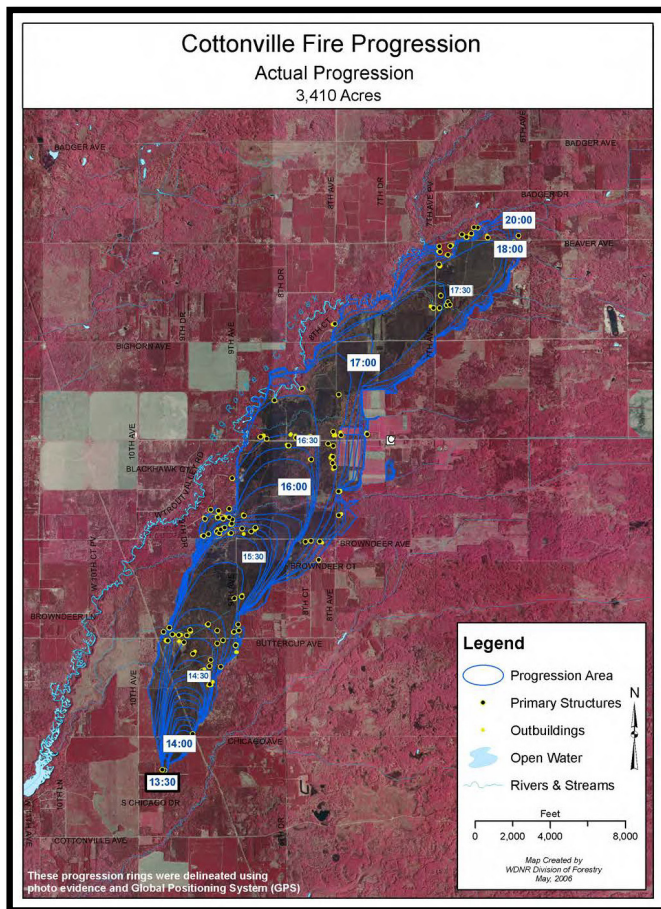
John Hintz, WDNR Situation Unit Leader on the Cottonville Incident Management Team, was largely responsible for collecting, managing, presenting, and sharing data from the Cottonville Fire. Post-fire, Hintz arranged layers using hyperlinks to showcase fire in-progress, ground and aerial photography, damage assessment photos, forest management plans, and other information related to spatial locations affected by the fire. Data were amassed and managed on a laptop using ArcView 3.2. The project was shared using Compact Disks. Limited ArcView licensing restricted effective data sharing among WDNR personnel. And, the few that viewed the data were uncertain how to share it more broadly and how agency personnel or the public might benefit from it.

## Sharing Lessons More Broadly

Fast-forward a few years to 2009 and John Hintz shares the rich narrative of the Cottonville Fire with UW-Stevens Point students enrolled in the Fundamentals of GIS. Technologies evolve and Geography students engage to manage GIS databases using the ESRI FlexViewer API. This application makes it easy to share geospatial data linked with rich information. In 2014 students update the story maps again using ArcGIS Online, a pervasive tool to share, view, and download maps



Coordinates from Global Positioning Systems (GPS) and embedded in photographs track the progression of the Cottonville Fire. Map courtesy of WDNR.



and data across multiple platforms (e.g. desktop, IOS, Android). Non-programming savvy technicians can now share story maps that tell the incredible narrative. Thanks to UWSP students, WDNR staff and citizens anywhere can learn more about the fire, its affects, how the area has recovered, and what that means to future prevention and suppression efforts. Information like that collected for Cottonville supports programs like Firewise, which teaches people how to reduce wildfire risks around their homes and properties. It helps researchers examine and improve fire behavior models. And, the information can be used by communities in the Wildland-Urban Interface to foster sustainable and resilient Geodesign solutions.

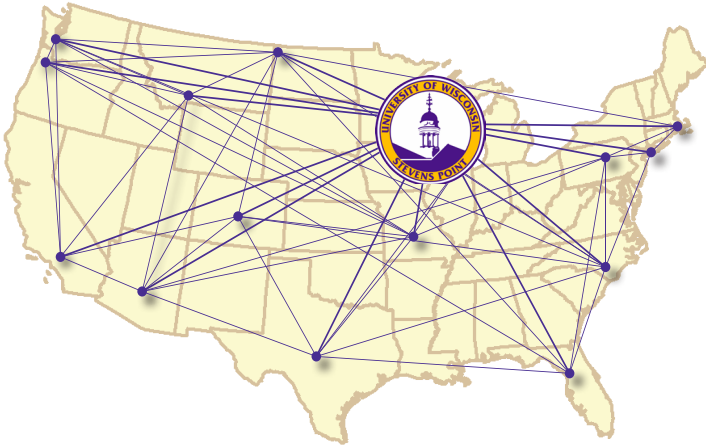
### Current State of Technology

ArcGIS Online and the ArcGIS Data Collector App have opened the doors to a user friendly, real-time geospatial data collection and sharing environment. WDNR’s final report of the Cottonville Fire openly commends technological advances and the use of GPS to obtain intelligence on the fire, both during the fire and in retrospect. Encouraging the use of structural zone maps and GPS units was recommended numerous times throughout the report and by numerous individuals. Technology clearly proved its worth in 2005. Ten years later these technologies have improved tremendously. Cloud computing and a densified cellular network offer real-time access to base maps and data collected from the field. In 2005, it would have been difficult to imagine all 199 WDNR personnel, 76 engines, 38 tractor plows, four aircraft, 22 fire departments, seven private dozers, 5 additional crews, two out-of-state aircraft, 18 other agencies all equipped with field protected, GPS enabled, smart phones and tablets. It would have been difficult to imagine each of them providing and accessing information about the fire and suppression efforts in real-time. It would have been difficult to imagine structural zone maps, road closures and evacuation data available to anyone with a smart phone or tablet device. Tomorrow, it will be difficult to imagine emergency response, recovery and mitigation without such tools that provide valuable and real-time situational intelligence.



# Topologies

## Maintaining Relationships with Alumni



Topology, defined in the geographic sense, maintains spatial relationships among geographic features.

This newsletter column entitled, *Topologies*, is meant to maintain relationships among our treasured alumni and their alma mater—the University of Wisconsin-Stevens Point.

No matter where GEO takes you, stay connected!

### Validate your topology today.

Alumni, let us know how to contact you and what you've been up to. Please share your stories of personal and professional success with the UWSP community of students, alumni, colleagues, and friends.

- E-mail us at [GIS@uwsp.edu](mailto:GIS@uwsp.edu)
- Subject Heading: Alumni Topologies

## Adam Derringer, Class of 2001

Bachelor of Science in  
Geography - Physical  
Geography and  
Cartography



Growing up in Waunakee, Wisconsin, Adam chose UW-Stevens Point to follow in his family's footsteps and the institution's reputation for academic excellence. Although originally interested in becoming a conservation warden, Adam changed course before arriving at UWSP. Instead, he staked his claim on Geography and Geology after enjoying several classes.

In this interview Adam shares his insights and advice with students about to enter the GEO workforce.

**Q.** Adam, please describe the path you took following your graduation from UW-Stevens Point.

**A.** Even before graduating, I worked for Juneau County helping to establish the county's initial GIS program. I remember breaking open the shrink wrap on ESRI's ArcView 3.2. There I had the opportunity to craft Juneau's E-911 atlas and cooperated with the sheriff's office on address mapping. After work and on weekends, I conducted land survey with Bret Davies, the county's Land Information Officer. Before leaving for Wausau and the North Central Regional Planning Commission, I helped Juneau County arrange for a full-time GIS Technician position.

*Derringer Interview continued on page 8.*



Derringer Interview continued from page 7.

**Q. You've worked for Mapping Specialists, started your own firm, and now work for AYRES Associates. How has your work evolved since you started your GIS career?**

A. I was one of the first classes to emerge from UW-Stevens Point with full-fledged GIS training. I suppose I was a tinkerer, a jack-of-all-trades. You had to be. We were using command line interfaces with PC ArcInfo, table-top digitizers, maintaining code with Avenue and AML, and dealing with a different set of computing architecture. Certainly there were storage and processing issues then. I believe I lit a few machines on fire while leaving them to process raster files. On the job, I'd daisy chain six external hard drives together to store data and occupy multiple computers for myself and staff so they could keep busy while machines crunched data.

The technology today is certainly more complex. But, at the same time it's also more engaging and approachable, especially to the end user. You don't think about storage or processing issues so much anymore. With today's tools we can put a web map online in The Cloud in minutes. The cartographic tools to create beautiful maps are just better right out of the box.

**Q. What are you working on now for AYRES Associates?**

A. For perspective, in 2015 I managed approximately 50 projects, mostly in the Midwest, but also in Florida and Colorado, primarily for local government.

At AYRES I dive into data creation and base mapping. It's one of the reasons I came to AYRES. I was offered the project manager position to work on the Wisconsin Regional Orthophotography Consortium known as WROC. It was a two-year effort to coordinate great people and organizations across the state, including those at the Wisconsin Land Information Association (WLIA) and ESRI Wisconsin User Group (EWUG). Together, well-over 100 partners engaged to ensure data quality and access. The 2015 flight that emerged covered

45,000 square miles of orthophotography and 15,000 square miles of LiDAR, including the extremely high resolution LiDAR captured for UW-Stevens Point.

**Q. You've been personally involved with some interesting projects over the past few years. Can you share with us your favorite assignment?**

A. I've worked in Afghanistan and Iraq and have been part of some exciting and personally gratifying work in Somalia. If you've read the New York Times best-seller, *The World's Most Dangerous Places* by Robert Young Pelton, you might have a sense of my work. Especially in Somalia, there is really very little information compiled. Available information from satellite doesn't provide the necessary information for people working in the culture on the ground. Data on roads (dirt trails), building footprints, destroyed buildings, vegetation, clan areas, water-



Adam in Puntland, Somalia.

resources, health clinics, markets, locations of clan leaders, and even the locations of cemeteries are valuable and even life saving.

UN soldiers, local police and relief workers need this information to pre-plan aid strategies, provide assistance to local people and fight piracy. Relief workers often drive into remote clan locations to deliver clean water and food. If by accident they drive over the clan's primitive burial ground, tensions are inflamed, credibility is lost and lives are put at risk. With simple GPS data and a map, these tensions can be avoided.

I've built ruggedized laptops and trained local people how to collect and map necessary information. Non-native GIS professionals tend to be targets for the pirates and Al-Shabab, a Somali





militant group. By training local people necessary data are collected and lives are saved. The data collected are used to craft maps that show areas of relative safety, where health services are available, where markets are located, or where there is public support for piracy.

**Q. Adam, I imagine that your time at UWSP had a significant role to play in your success. What about your time here did you find most valuable to you as a GIS professional?**

A. I really had a rich set of experiences at UWSP. I recall sleeping only two hours per night for four years. You know I worked as a roofer, as a cook at Hilltop and helped Dr. Rice with special projects and manage the map library. In my last semester I worked as a Limited Term Employee for the North Central Regional Planning Commission.

I also participated in many extracurricular activities. I was Vice President and President of the Theta XI fraternity and member of Gamma Theta Upsilon and GeoClub. I was Vice President of the Inter Greek Council, President of the Order of the Omega Honor Society, and I was active with multiple intramural sports. I participated in Big Brothers and Big Sisters and St. Mike Charities. I remember as a student feeling that I was a part of the Stevens Point community.

Perhaps most valuable to me was in taking my GIS courses. At the time there were only a few GIS courses on campus. In them I learned that GIS was applicable to anything - business analytics, disease tracking, natural resources, emergency management, etc. I can analyze anything with a GIS and compare it to other qualified data. I was even able to relate the mythical "Cuddy Bear" to real world natural resources applications.

UWSP professors were very accessible to me. Dr. Heywood taught me that with geography I could study anything. Dr. Rice taught me that with GIS I could make that study meaningful.

**Q. Do you have any advice to share with GEO students who are about to enter the workforce?**

A. Find something that you're passionate about doing and then add value to it with GIS. If you're interested in GIS for health care, take the steps needed to set yourself apart. Conduct your own research. Do your own digging. Take complementary courses in that area. Don't just press the buttons on ArcGIS to get a result. Make that career yours.

As I said before, GIS can be used to analyze anything. Find your niche and you'll find your success.

Find out more about who you are. Set goals for yourself. Use your time at UW-Stevens Point to do something that is truly creative and remarkable. That's what I learned then and that's what I'm able to

do now - working with my clients to do amazing things.

Adam is recipient of ESRI's Special Achievement in GIS award, served as WLIA President in 2015, helped establish and is Vice-Chair of the Wisconsin Land Information Council to the Wisconsin Department of Administration.

*The interview between Douglas Miskowiak and Adam Derringer was conducted via telephone on December 19, 2012 and on April 22, 2016.*

***"Dr. Heywood taught me that with geography I could study anything.***

***Dr. Rice taught me that with GIS I could make that study meaningful."***



# Graduates - Class of 2016

*in scientia opportunitas - In knowledge there is opportunity*

## **Nicholas Armetta - Bachelor of Science in Geoscience**

Minor(s): Earth Science and Geology

## **Chase Bayer - Bachelor of Science in Geoscience**

Minor(s): Geology and Geographic Information Systems and Spatial Analysis

Certificate(s): GIS Professional Certificate

## **Tyler Bloom - Bachelor of Science in Geoscience**

Minor(s): Geography and Geology

## **Ashley Diaz - Bachelor of Science in Geography**

Minor(s): History

## **James Engelbrekt - Bachelor of Science in Geography**

Minor(s): Spanish

## **Edmund Flynn - Bachelor of Science in Geography**

## **Kristina Femal - Bachelor of Science in Geoscience**

Minor(s): Geology and Natural Science

Future: Pending internship with Iron County Health Department and travel to Iceland to view and learn more about glaciers and geothermal activity.

## **Neil Foegen - Bachelor of Science in Geoscience**

Minor(s): Earth Science and Geology

## **Timothy Heller - Bachelor of Science in Geography**

Minor(s): Geology

## **Curtis Joyce - Bachelor of Science in Geoscience**

Minor(s): Geology and Geographic Information Systems and Spatial Analysis

## **Keaton Katarincic - Bachelor of Science in Geoscience**

Minor(s): Geology



**Robert Lyke - Bachelor of Science in Geography**

Minor(s): Geographic Information Systems and Spatial Analysis and History

Certificate(s): GIS Professional Certificate and GIS Focal Certificate in Cartography

Future: Currently employed at TDS Telecommunications in the GIS and Engineering Department.

**Cameron Mercer - Bachelor of Science in Geoscience**

Minor(s): Geology

Future: Applying to graduate school at Central Washington University.

**Kyle Pepp - Bachelor of Science in Geoscience**

Minor(s): Geology and Philosophy

Future: Moving to Alaska and searching for employment as a park ranger.

**Kayla Petersen - Bachelor of Science in Geoscience**

Minor(s): Geology

**Stephen Schuessler - Bachelor of Science in Geography and Geoscience**

Minor(s): Geology and Geographic Information Systems and Spatial Analysis

Certificate(s): GIS Professional Certificate and GIS Focal Certificate in Cartography

Future: Pursuing a career in Geographic Information Systems.

**Jennie Stage - Bachelor of Science in Geography**

Minor(s): Spanish

**Ross Thorn - Bachelor of Science in Geography and Geoscience**

Minor(s): Geology and Geographic Information Systems and Spatial Analysis

Certificate(s): GIS Professional Certificate and GIS Focal Certificate in Cartography

Future: Accepted to graduate school at UW-Madison in GIS and Cartography.

**Francis Wagner - Bachelor of Science in Geography**

Minor(s): Geographic Information Systems and Spatial Analysis Certificate(s): GIS Professional Certificate and GIS Focal Certificate in Cartography

Future: Applying for GIS positions in the Fox Valley with an environmental focus.

**Angela Weber - Bachelor of Science in Geoscience**

Minor(s): Chemistry, Earth Science and Geology

**Travis Wilkinson - Bachelor of Science in Geography**

## UW-Stevens Point Students Explore Culture, History of the Mississippi Delta

Carrie Heibler, UWSP University Relations and Communications

A trip down south for spring break sounds like a vacation, but for 38 students at the University of Wisconsin-Stevens Point, a trip to the Mississippi Delta during their week off from classes was a cultural and learning experience.

Students took the trip as part of Geography 393, "The Environment and Culture of the Mississippi Delta." Led by Instructor Lisa Theo, students learned about the landscape, food, history, music, economy and diversity of several locations in Mississippi and Tennessee.

"Lisa likes to tell us 'Geography is everything,'" said Cassandra Wentzel, a junior human geography major from Eau Claire. "So we learned a little bit of everything on the trip."

At Forks of the Road in Natchez, Miss., the students saw a sculpture of shackles that marks a former slave trading site. In Moorhead, Miss., the group met with the city's mayor to discuss ways the small community is trying to come back from lost industry and jobs. A stop at the National Civil Rights Museum in Memphis, Tenn., was "eerily quiet and full of introspection," said Wentzel. Club Ebony, a part of the B.B. King Museum and Delta Interpretive Center in Indianola, Miss., opened its doors to serve them a soul food dinner accompanied by live blues music.

"Geography is influenced by history, culture, landscape, sociology, economy, poverty, education and race," said Theo. "I want my students to see what impacts these influences have on a place and why."

"There was so much to take away from this trip," said Abby Heistad, a senior communication major from White Lake. "It helped me understand American history and what role the river plays in

the delta area. We met people who had a lot of love for their life, even though they value different things than we do."

"I loved getting to know the people," said Wentzel, who added that much of the area's history made an emotional impact on them. "We saw where people suffered, where people had to stand up and be brave."

***"Geography is influenced by history, culture, landscape, sociology, economy, poverty, education and race."***

Theo has been offering this trip consistently since coming to UW-Stevens Point in 2007, which is also open to the public as space permits. She feels strongly students benefit from opportunities outside of the classroom.

"You learn so much more by experiencing something for yourself," she said. "The trips I took in college, when I could see the history and

*Natchez slave market, Forks of the Road. When a whole culture defines a group of people as subhuman, it becomes easy to exploit them for self-gain.*



geography firsthand and talk to local residents, were so impactful that I knew I wanted to take my students on these trips as a teacher.”

Each class that Theo teaches includes a field trip aspect. Students in her Urban Geography course have traveled to Chicago, the Twin Cities and Milwaukee to learn the community’s history, structure, environmental impact, industry and urban planning. Their projects, such as creating maps and analyzing data, is done on site then presented to the people it affects in that community.

“Students from all disciplines benefit,” she said. “They learn how to communicate with diverse audiences and gain confidence for the workplace. They find a common ground among their differences. All of the students come back changed.”

*Indigenous American music - the blues, experienced at the BB-King Museum and Delta Interpretive Center.*



*Members of the “The Environment and Culture of the Mississippi Delta” spring break trip met with Moorhead, Miss., Mayor George Holland (center) to talk about economic changes in his small town.*





# UWSP GeoClub and Student Scrapbook



*UWSP Alumni, Ryan Boll, offers students a tour of Quantum Spatial, a Geospatial Firm in Sheboygan, Wisconsin.*



*(Left to Right) Chase Bayer, Kyle Pepp, Nate Werner, Tyler Phillip, Kristina Femal, Dr. Eric Larsen, and Alex Sukupcak emerge from crawling and squeezing through Mammoth Caves.*



*GeoClub squeezes and squirms through the wild cave tour.*



*Francis Wagner takes a selfie with a roadside friend (black bear) before validating land cover types for his WDNR internship.*



*Kyle Pepp and Brandon Lee register posters for the Wisconsin Land Information Association Map and Poster Contest.*



## Faculty Grants, Presentations and Publications

### Dr. Kevin Hefferan

Maacha, L., Bhilisse, M., Wafik, A., Admou, H., and Hefferan, K., 2015, Physio-chemical characterization of fluids that produced cobalt mineralization in Bou Azzer inlier (Central Anti-Atlas, Morocco): Mineral Resources in a Sustainable World, Society for Geology Applied to Mineral Deposits v. 2, p. 477-480.

Johnson, M. and Hefferan, K., Lineament Analysis of the Proposed Pocatello Segment of the Wasatch Fault: Geological Society of America North Central Regional Meeting Abstracts with programs, Madison, WI. May 19, 2015. <https://gsa.confex.com/gsa/2015NC/webprogram/Paper255286.html>

Maacha, L., Bhilisse, M., Wafik, A., Admou, H., and Hefferan, K., 2015, Physio-chemical characterization of fluids that produced cobalt mineralization in Bou Azzer inlier (Central Anti-Atlas, Morocco): Society for Geology Applied to Mineral Resources, 13th SGA Biennial Meeting, Nancy, France, August 25, 2015.

### Dr. Samantha Kaplan

Kaplan, Yacobucci and Williams, 2015. Relating Late-Quaternary Plant and Animal Distributions to Past and Future Climate. SERC Teaching Activity.

### Dr. Timothy Kennedy

UWSP Technology Mini-Grant. \$2,390

UWSP L&S Enhancement Grant. \$4,771

URSCA funding for two undergraduate internship students to present at AAG. \$1,835

### Ms. Christine Koeller

Green Circle Trail Interactive Web Map. \$3,999

Koeller, C.A. 2016. Mapping for Citizens. Workshop Presentation. Wisconsin Lakes Partnership Convention, Stevens Point, WI.

Koeller, C.A. 2016. Mobile GIS Techniques. Workshop Presentation (2). Wisconsin Land Information Association Annual Convention, Elkhart Lake, WI.

Koeller, C.A. 2016. Paperless grading with D2L. Oral Presentation: Lightning Round. University of Wisconsin-Stevens Point 20th Annual Teaching Conference, Stevens Point, WI.

### Dr. Eric Larsen

Trophic Cascades of Yellowstone National Park's Northern Range, AAG annual conference, Chicago, IL April 2015.

Aspen, Elk, and Wolves on Yellowstone's Northern Range, UWSP Letters & Science Lecture Series, Feb. 2015.

### Mr. Douglas Miskowiak

Upper Couderay River Watershed - Environmental Information GIS Database Development. Courte Oreilles Lakes Association. \$12,138.37

Miskowiak, D.A. 2016. Wildfire Awareness and Education with ArcGIS Online. Wisconsin Land Information Association Annual Conference. Elkhart Lake, WI.

Miskowiak, D.A. 2016. Leveraging GIS and the Cloud to Protect Land. Couderay Waters Regional Land Trust Meeting. Hayward, WI.

Miskowiak, D.A. 2015. Land Records Order in Moose Lake. Impact of Wisconsin Act 20. ESRI Annual International Users Conference. San Diego, CA.

### Dr. Ismaila Odogba

"Planning and Public Interest in a Developing Country" Panel on Re-imagining Public Engagement: Civic Participation in Local Governance, Twentieth Conference on the Small City and Regional Community, UW-Marathon County, October 6-7, 2015.

### Dr. David Ozsvath

Rafique, T., Naseem, S., Ozsvath, D., Hussain, R., and T. Usmani, Geochemical control of high fluoride groundwater in Umakot Sub-District, Thar Desert, Pakistan; Science of the Total Environment, vol. 530-531, p. 271-278. DOI:10.1016/j.scitotenv.2015.05.038.

### Dr. Keith Rice

UWSP Technology Mini-Grant -Updating GPS Instruction using Using Trimble Pathfinder Software.

UWSP UEI Grant - Bridging STEM fields with Investigation of Unmanned Aerial Vehicles (UAVs) - \$14,400 - 1.5 yr. project.





## University of Wisconsin Stevens Point

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- ▶ Tim Kennedy, Assistant Professor
- ▶ Christine Koeller, Faculty Associate
- ▶ Eric Larsen, Professor
- ▶ Karen Lemke, Professor
- ▶ Douglas Miskowiak, Senior GIS Education Specialist
- ▶ Ismaila Odogba, Associate Professor
- ▶ Eric Olmanson, Instructor
- ▶ Ray Reser, Director of Museum of Natural History
- ▶ Keith Rice, Professor and Director of GIS Center
- ▶ Michael Ritter, Professor
- ▶ Diane Stelzer, GIS Center Associate
- ▶ Lisa Theo, Instructor

## Calendar of Events

The Upper Midwest Geospatial Conference  
May 25 - 26, 2016 – UW-La Crosse  
<http://www.uwlax.edu/conted/geocon/>

Wisconsin Land Information Association Spring Meeting  
June 9 - 10, 2016 - Hotel Mead. Wisconsin Rapids, WI  
[www.wlia.org](http://www.wlia.org)

ESRI International User Conference  
June 27 - July 1, 2016. San Diego, CA  
<http://www.esri.com/events/user-conference>

American Institute of Professional Geologists National Conference  
September 10 - 13, 2016. Santa Fe, NM  
<http://www.aipg.org/events/index.htm>

National States Geographic Information Council Annual Conference  
October 24-28, 2016 - Crowne Plaza. Indianapolis, IN  
<https://www.nsgic.org/upcoming-conferences>

AAG Middle States Regional Division Fall Meeting  
November 4 - 5, 2016. Blair County Convention Center  
Altoona, PA  
<http://msaag.org/>

GIS Day  
November 16, 2016  
<http://www.gisday.com/>

**You can get there from here!**

