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# Center for Geospatial Studies Newsletter. 2016 no.9 (April)

Minnesota State University Moorhead, Center for Geospatial Studies

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### **Mark Your Calendars - MN GIS/LIS Spring Workshops**

Registration is now open for the MN GIS/LIS Spring Workshops. In an effort to provide access for those in greater Minnesota, several workshops will be made available at designated locations around the state including MSUM. Visit the MN GIS/LIS website at [http://www.mngislis.org/?spring\\_works\\_2016](http://www.mngislis.org/?spring_works_2016) for more information and to register for the remote sessions. The workshops will take place on Thursday, May 19, from 8:30-4 pm in King Hall rooms 215 and 217. Each half-day session workshop is \$100.

Morning Sessions (9:00–12:00)

- Business Analyst and Business Sustainability
- Preparing and Validating Spatial Data for Emergency Dispatch Next Generation 911

Afternoon Sessions (1:00-4:00)

- Configuring ArcGIS for Mobile Data Collection and Crowdsourcing
- ArcGIS for Server 10.3 & Beyond

Morning refreshments will be provided (starting at 8:30), but you will purchase your own lunch and submit your receipt to the MN GIS/LIS for reimbursement. Kirk Stueve ([kirk.stueve@mnstate.edu](mailto:kirk.stueve@mnstate.edu)) and Paul Sando ([psando@mnstate.edu](mailto:psando@mnstate.edu)) will be your MSUM hosts for the day, assisted by John Wirries (KLJ). Plans are still underway, but they hope to organize a common lunch spot for those who are interested. If you will be attending the workshops and have a suggestion, please feel free to email Kirk and Paul.

### **GIS Presentations at the 2016 MSUM Student Academic Conference**

The extent to which MSUM students have embraced geospatial technology in their research was more than evident at the Student Academic Conference held on campus on Tuesday, April 12. Fourteen poster and 2 paper presentations focused on geospatial applications within Anthropology, the Biosciences, the Earth Sciences, the School of Media Arts and Design, and Sustainability. Kudos to these 40 students on their interesting and exciting research, and thank you to the faculty who served as such excellent mentors. Below is a listing of these presentations:

- *Analysis of Time Spans between Captures of PIT-tagged Painted Turtles across the Years 2006-2015 in Clay County, Minnesota* by Blair L. Posusta (Biosciences, advised by Donna M. Bruns Stockrahm).
- *Elucidating Local Bee Species Diversity using DNA Barcoding in Clay County* by Marissa Reeves and Stacy Peterson (Biosciences, advised by Sara Anderson and Rebecca Andres)
- *Environmental and Agricultural Implications of Subsurface Drainage in Clay County, MN* by Laurie Eli, Gary George, Matthew Hanna, Derek Sakrison, and Connor Sell (Anthropology & Earth Science, advised by Paul Sando)
- *From Golf Course to Prairie: Initial Assessment of Local Microbiomes in Restoration Areas* by Vincent Anani and Nancy Castro Borjas (Biosciences, advised by Sara Anderson)
- *From Golf Course to Prairie: The Effects of Chemical Carryover on Plant Growth* by Kelley Larson, Emily Bushaw, Hayley Hilfer, Tiffany Grieger (Biosciences, advised by Alison Wallace)
- *GIS Applications in Anthropology* by Lee Smalt and Jesus Romero Lopez (Anthropology & Earth Science, advised by Erik Gooding, Kirk Stueve, and Paul Sando).
- *Informing Conventional Market Analysis with Geoanalytics* by Lee Smalt (Anthropology & Earth Science, advised by Kirk Stueve and Wooyang Kim).
- *Interactive Educational Website Content for The World Garden Commons* by Samantha Szczesny, Kevin Schwab, Eric Bye, Justin Clem, Tyler Fischbach, Thomas Garzon, Kaitlyn Mann, and Jennifer Natole (School of Media Arts and Design, advised by Alexandria Fogarty).
- *Monitoring Painted Turtle Movements in Clay County, Minnesota, with a New Style of Trap* by Jessica M. Lindstrom, Scott T. Buchholz, Sarah S. Sanderson, Jessica L. Loeffler, Elisabeth C. Teige, Marissa M. Reeves, Eberardo C. Barragan, and Jordan J. White (Biosciences, advised by Donna M. Bruns Stockrahm).

- *Plants vs. Poison: Will Chemical Carryover Affect the Success of an Ecological Restoration of a Former Golf Course to Prairie?* by Hayley Hilfer, Trevor Harder, Taylor Jensen, and Michael Holtan (Biosciences Department, advised by Alison Wallace).
- *Predicting Runoff Pollution with Geospatial Analysis in Western North Dakota's Oil Fields* by Tyler Solberg (Anthropology & Earth Science, advised by Kirk Stueve).
- *Simulating the Extent of a Riparian Woodland in the Northern Tallgrass Prairie* by Gary George (Sustainability, advised by Kirk Stueve)
- *Starting an LCCMR Prairie Restoration Grant: Monitoring of Small Mammals* by Jessica M. Lindstrom, Annika M. Bordak, and Elisabeth C. Teige (Biosciences, advised by Donna M. Bruns Stockrahm).
- *2015 MSUM Archaeological Investigations at Chief Looking's Village* by Carlie Peterson, Langley Bradley, and Taylor Ness (Anthropology & Earth Science, advised by Rinita Dalan)
- *Urban Canada Geese in Moorhead, Minnesota: What do We Know after Six Years of Population Control?* by Jaime L. Kallstrom and Scott T. Buchholz (Biosciences, advised by Donna M. Bruns Stockrahm).
- *Use of Game Cameras to Document Urban Carnivore Species in Fargo-Moorhead City Parks* by Eberardo C. Barragan (Biosciences, advised by Donna M. Bruns Stockrahm).

### **GIS Internships**

Two MSUM students enrolled in the GIS Certificate are in the midst of starting internships with a local business and government agency. Abel Tilahun is a physics student that was offered a position as a GIS Technician Intern with the Fargo Branch of Bolton & Menk Inc. He is collecting GPS data representing infrastructure of various municipalities and using GIS data analysis in concert with R to map and analyze some of the data. Jesus Romero Lopez is an Anthropology student that was offered a position as a GIS Technician Intern with Clay County, MN in Moorhead. He will be assisting with the generation of maps for election precincts and other projects requiring digitizing. If you are looking for student interns with GIS experience, please don't hesitate to contact Kirk Stueve at [kirk.stueve@mnstate.edu](mailto:kirk.stueve@mnstate.edu).

### **Campus Training**

Several efforts are underway to involve more faculty in Web GIS and our MSUM ArcGIS Online Organization. ArcGIS Online and Collector App training sessions have been developed and tested on the Center for Geospatial Studies Steering Committee and faculty involved in Prairie Restoration and Monitoring activities at the Regional Science Center. The Center for Geospatial Studies Steering Committee is also piloting a "Professional Development Leads" program, with faculty or faculty teams assuming responsibility for professional development and training on the various Esri apps that are available under our site license. These individuals will then serve as primary contacts and mentors for other faculty wishing to use these resources. If any community members would be willing to share their expertise to enhance our capabilities with these apps, feel free to complete the attached form and return via email to Rinita Dalan ([dalanri@mnstate.edu](mailto:dalanri@mnstate.edu)).

### **Lecture for MSUM's CSIS Student Club**

Dr. Kirk Stueve was invited to speak to MSUM's Computer Science and Information Systems students on the evening of March 9<sup>th</sup>, 2016. He gave a theoretical and practical introduction to GIS while demonstrating the pivotal role of computer science in the continued evolution of GIS. Particular attention was given to scripting in Python and R. Several of the students that attended the lecture had extensive scripting experience and were intrigued by the practical applications of their developing skills in a GIS environment. Several of these students will likely begin the GIS Certificate within the next year and will present a unique combination of skills for future jobs or internship positions.

### **GIS Certificate Grows**

Interest in the GIS Certificate at MSUM continues to grow. By spring 2016, 21 students are on track to complete the four certificate courses. This is less than two years after initial approval of the certificate (November 2014). An additional 30 students have taken 2-3 of the certificate courses and over 100 more students have taken at least one of these courses, gaining important spatial thinking literacy and skills. Students who have declared the certificate are majoring in Anthropology, Biosciences, Geosciences, History, Physics, Political Science, and Sustainability but approximately 25 majors are represented by students taking the certificate courses, ranging from majors in the Arts, Business, Criminal Justice, Education, English, Graphic Communication, Math, and Psychology. Demand was so high for spring 2016 that the Introduction to GIS course had to be moved to a larger room and a second section of Thinking Spatially was also added this year. We will offer our advanced GIS course (Spatial Analysis) for the second time this summer (see below). We are also pleased to report that the GIS classes have been incorporated into the International Studies and Sustainability majors.

### **Summer and Fall 2016 GIS Courses**

#### **SUMMER 2016**

This summer we will offer the advanced GIS course and two topics courses providing instruction and field exercises in geospatial applications.

- GEOS 407 Spatial Analysis 7/5-7/29
- GEOS 390 Geospatial Applications for the Natural & Social Sciences 6/13 – 6/30
- ANTH 390 Geospatial Applications for the Natural & Social Sciences Field School 7/11-8/11

#### **FALL 2016**

This fall we will offer 3 of the 4 certificate courses.

- GEOS 205 Thinking Spatially T&H 3:00-4:15pm
- GEOS 207 GPS Field Techniques T&H 4:30-7:00 pm
- GEOS 307 Intro to GIS T 4:30-7:00pm

### **Spring Steering Team Meetings**

Our last Center for Geospatial Studies Steering Committee meeting for the academic year will be on April 21, at 3-4 pm in MacLean 268. All meetings are open and visitors are encouraged to attend.

Convenient metered parking can be found directly south and west in lots M1-3.

<http://www.mnstate.edu/uploadedFiles/Content/Parking/Parking%20Map.pdf>

### **Questions?**

For questions regarding the GIS certificate, Steering Committee, or partnerships with the Center, please contact Dr. Rinita Dalan, Chair, Anthropology & Earth Science at 218.477.5900 or [dalanri@mnstate.edu](mailto:dalanri@mnstate.edu).

### **MSUM GIS**

Msum\_gis is a mailing list for those with an interest in geospatial applications.

To post to this list, send your email to:

[msum\\_gis@lists.mnstate.edu](mailto:msum_gis@lists.mnstate.edu)