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www.uwsp.edu/geo
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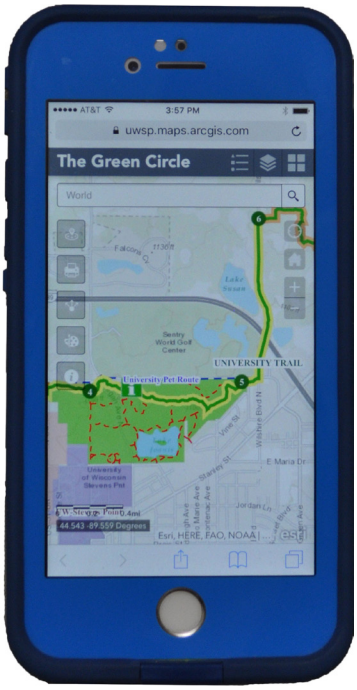
Geo Interns Make the Green Circle Trail Map Mobile-Friendly

Christine Koeller, GIS Faculty Associate

The Green Circle Trail (GCT) is a treasured resource and cherished amenity for many residents, students and visitors of the Stevens Point Region. And, it's no secret as to why. The GCT offers 27 continuous miles of scenic hiking and biking opportunities that winds through forests and parks, over wetlands and along rivers. The GCT connects Stevens Point to its neighboring communities and is linked to over 20 miles of additional trails.

Now the beloved trail system is more accessible and navigable than ever. Thanks to a partnership with the UW-Stevens Point Geographic Information Systems Center (GIS Center) and the Green Circle Trail Board, three project interns crafted a web-mapping application for trail users that is mobile-friendly, meaning that the GCT trail map is accessible on smartphones and tablet devices connected to cellular data services.

GCT Map and SmartPhone App(lication) and photos along the trail. Photos downloaded from the GCT map.



GCT M/APPcontinued on page 4.

You can get there from here!

Chair's Corner

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

Before writing this column, I re-read my Chair's Corner in last spring's inaugural edition of *Geo News*, and I was impressed by the reminder of all that was going on! Well, that's still the case, although this time I don't need to cover as much ground in my synopsis. If you haven't kept up with department happenings, find a copy of Volume 1, Issue 1 and get yourself up to speed. When approached about contributing to this issue, Doug Miskowiak offered me the opportunity to include a more recent picture of myself, but since I've only gotten older, I declined the penalty...

Curricular Changes

Last spring I reported on a number of curricular changes that had occurred during the 2015-16 academic year. Already this fall we have forwarded a proposal to the University Curriculum Committee for the new major I mentioned in the May newsletter: *Geographic Information Science*. This is a collaborative effort that draws from our expertise in geographic information systems and the programming/data management/web development expertise from the Department of Computing and New Media Technologies. As promising as this new major is, we almost stalled along the on-ramp by using the abbreviation of "GIScience" in our paperwork, which many outside of our department took as a reference to either a military program or a very specialized examination of the digestive tract. Needless to say, we are now deliberate to always use the full title when speaking with "outsiders". The hope is to have this major approved by the end of the academic year and possibly implemented as early as the 2017-18 academic year. We anticipate that it will attract a different clientele than do our current majors and thus allow for numerical growth within the department – a crucial element for survival in these days of budgetary constraints.

Along the curricular lines, two new Geography courses are slated for next spring. *Weather and Climate* will be taught at the sophomore-level by Michael Ritter and an interdisciplinary course entitled, *Mapping History* will be team-taught by Tim Kennedy of Geography and Geology and Taylor Easum of History and International Studies. In addition, what was previously offered as GEOG 388: *Introduction to Urban and Regional Planning* will be taught for the first time by Ismaila Odogba as GEOG 230: *Introduction to Regional Planning and Geodesign.* This course is now required for all Geography majors. Also, building on last year's successes, Christine Koeller will again be team-teaching *Mobile GIS Techniques* with Tim Krause of Computing and New Media Technologies. Tim Kennedy will offer *UAS Operations in Remote Sensing,* a revised version of last year's special topics course.

Department Assessment and Review Reporting

On the more distant horizon are two major efforts: our Department Assessment Report (which is submitted once every five years) and our Department Review Report (which is submitted on a ten-year cycle). Both reports are due in October 2018, which sounds far away, but these efforts require considerable advance work, not the least of which is having outside reviewers visit the campus to evaluate our programs. This will be an especially important cycle for us, because it is the first time the Geoscience major will be assessed and reviewed

since it was implemented in 2008. One of the reasons I bring this up is that alumni surveys are perhaps the most valuable assessment tool we have to evaluate how well our programs prepare students for graduate school and/or their careers. With that in mind, I hope that any alums reading this newsletter will take the time to let us hear from you. We could really use your information in our reports.

Changes to Physical Space

The next two years will also bring a major change to our physical space. By the fall of 2018, the Department of Chemistry is supposed to have moved into the new Chemistry and Biology Building that is currently under construction in what was previously Parking Lot X. That will allow the remaining units an opportunity to reorganize and rethink our use of the Science Building. The School of Health Care Professions has plans to expand into some of the classrooms and lab spaces that are now occupied by Chemistry. There is also talk of moving the Museum of Natural History into the first floor near the D-101 and 102 lecture halls. For Geography and Geology, it might mean additional space for the GIS Center, as offices in the third-floor B-wing are vacated by Psychology faculty. There has been some discussion about the Map Center and whether that space could be used for public outreach activities involving GIS. This would involve finding another place to store the topographic maps that are housed in that room, or else returning the maps to the U.S. Geological Survey (a much less desirable alternative), but either way, the goal would be to showcase what we do and increase traffic in the department.

Artist rendering of the new UWSP Biology and Chemistry Building, courtesy of www.uwsp.edu.

Join us for the Spring Banquet

Because it will be another six months or so before the next newsletter comes out, I'll close by thinking ahead and encouraging alums and emeritus faculty to join us for the Annual Spring Awards Banquet. It is traditionally held the first Thursday evening in May. It's always a pleasure to have representatives of our rich heritage present as we honor the latest crop of graduating seniors. I hope that you can arrange your schedule to attend.

David L. Ozsath

GCT M/APPcontinued from page 1.

GIS Center interns Chase Bayer, Stephen Schuessler and Nicolaus Anderson managed the trail mapping project in three distinct phases, including: 1) field data collection, 2) data processing and database creation and 3) web design.

Field Data Collection

Phase one of the project, field data collection, ensured that trail features and nearby amenities were represented with the most-timely and geospatially accurate information. Chase Bayer led the data collection efforts utilizing a Trimble Global Positioning System (GPS) receiver. The GCT route and features, such as mile markers, parking and restrooms were captured with GPS. A quality control process validated data capture.

Data Processing and Database Creation

In phase two, data processing and database creation, Stephen Schuessler organized and incorporated field data into file geodatabases, a geospatial database format using the ESRI software platform. About his work, Stephen submits, *"Basically there was a lot of database work going on behind the scenes so that everything could be easily accessed and maintained in the future."* The geodatabase will be updated and maintained by the UWSP GIS Center on a regular basis.

Web Design

In phase three, web design, Nicolaus Anderson composed the final web-map using ArcGIS Online and Web AppBuilder software from ESRI. Stephen also assisted in designing and organizing the web map for mobile devices. Nicolaus described the web map build as pushing data into a cloud server environment. *"I refined the map and made it more appealing. I incorporated pop-up information boxes into the web map, allowing the user to view additional information about trail segments and other features, such as cultural sites."*

The Internship Experience

The internship experience is a valuable one to students. Stephen offered, *"I have come to learn that making maps accessible and useful to the public is arguably as important as the data and content behind your work. This is especially true if you are creating data and maps for a client, as we were in this situation. I couldn't be happier with the outcome and the experience. This has been a genuine opportunity for skill-building and refinement."*

Since his internship with the GCT, Stephen secured another internship and has since been hired as a GIS technician for Quantum Spatial Inc. and for the U.S. Army Reserve. *"These internship experiences that I gained from the UWSP GIS Center are allowing me to pursue my dream of working in the defense or spatial crime analysis industries. I am not there yet, but with the head start that I got from UWSP, I am one step closer to my goal."*

Nicolaus offered a similar narrative about the benefits of his internship experience. *"I enjoyed working on this project. The experience I gained as an intern and member of the project team gave me a greater opportunity to learn about publishing maps and apps to the cloud [internet]. I am very grateful to the Green Circle Trail Board for funding this project and internship experience."*

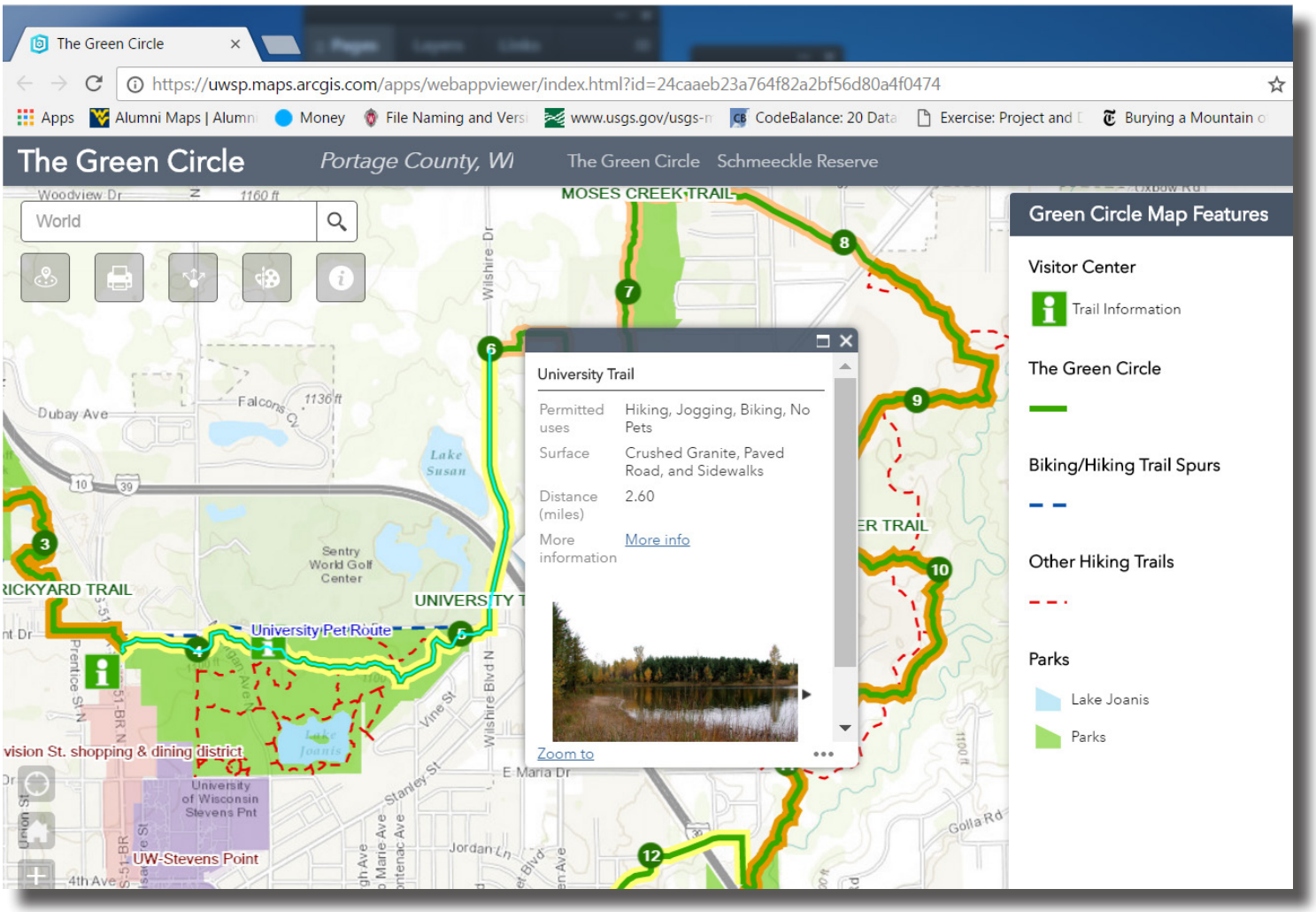
Nicolaus also said he highly recommends current students to get involved in internships such as this. *"The experience and knowledge alone is worth the time. As an added bonus, employers look quite favorable on activities such as these, which are considered 'real-world' experiences."*

Chase Bayer was unavailable for comment, but since graduating from UW-Stevens Point in May 2016, he started as a GIS Technician at UDC, Inc. located in Waukesha, Wisconsin. He is now employed by United Access in Dallas, Texas.

Using the Green Circle Trail Web M/APP

The GCT mobile-friendly web map is found on the internet at http://greencircletrail.org/explore-the-trail-index/maps/. The map allows users to interact and learn about GCT segments and nearby cultural features as well as locate parking, water stations, public restrooms, connected trail spurs, parks, and nearby dining/shopping areas. Users with mobile-devices (devices with a cellular or WiFi data connection that are location-enabled with GPS) can pinpoint their location on the web-map while on the trail as they enjoy their ride. Map updates will continue annually through 2020.

Screen capture of the GCT map using a Google Chrome browser.



A New Bicycle Route Map for Stevens Point

Christine Koeller, GIS Faculty Associate

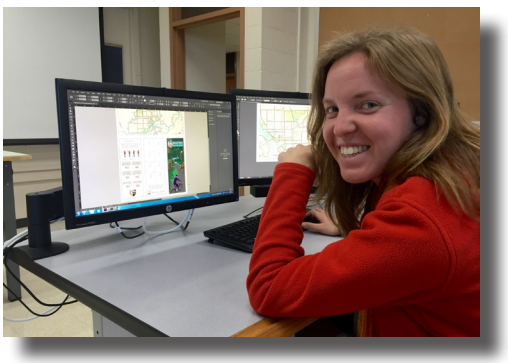
It's an exciting time to be a bicycle enthusiast or commuter in Stevens Point. In Fall 2016, The League of American Bicyclists again awarded Stevens Point with Bronze status for being a Bicycle Friendly Community. And, Stevens Point was awarded a federal Transportation Alternative Program grant of just over $391,000 to create almost 14 miles of bike lanes on existing roadways. Notably, Douglas Miskowiak of the UW-Stevens Point Geographic Information Systems Center (GIS Center) crafted the map that accompanied the winning grant proposal. See the full story in the Stevens Point Journal. https://www.spcitytimes.com/2016/09/09/city-wins-390k-grant-for-network-of-bike-lanes/

With all the buzz about bicycling and the utility of Geography, making a map available to the community to showcase bicycle routes is no surprise. And, that's just what's happening with a partnership between the GIS Center and the City of Stevens Point and their Bicycle & Pedestrian Advisory Committee (BPAC). The map and brochure displays and prioritizes bicycle routes by travel distance and safety, described as comfort-level. Additionally, the brochure shares bicycle rules to promote safe transportation as-well-as the multi-modal sharing of our community streets.

Meet Geography Major, Ellie Corbin

Elizabeth (Ellie) Corbin is spearheading the effort as part of an internship supervised by Christine Koeller (UWSP GIS Faculty Associate) and Dr. Tori Jennings (Chair of BPAC). Ellie is a senior majoring in Physical Geography. She also works with the UW-Stevens Point Office of Sustainability.

Ellie Corbin reveling in her work.



Representing and Showcasing Bicycle Routes

Ellie's work started with data acquisition to represent bicycle routes and important community features and amenities. The City of Stevens Point offered up-to-date roads and bicycle route information. Once acquired, data was formatted and symbolized for user-friendly display and use in hard-copy. The map is designed for printing in a format that conveniently folds to pocket size for the intended user - cyclists. Design choices about symbol color and size, map scale, geographic extent, page size, and folding arrangement were all thoughtfully considered. Map design is often the most time-consuming, detailed and painstaking part of a project. And, for this project Ellie agrees. *"Having taken Cartography, Intro to GIS, and GIS I and II [at UW-Stevens Point], I felt confident in my ability to create a fun and user-friendly map for the public. There was a lot more work with Adobe Illustrator than I originally thought, but I really enjoyed it. As the project progressed, the map really became a piece of art."*

Connecting Students with Community

Projects like this one are important for building and nurturing connections among the university, the community and UWSP students. In Ellie's words, *"Overall, this experience has grown my knowledge of ArcMap, Adobe Illustrator and the process of planning a project. I am grateful for all of the help offered by Christine Koeller and for the vision, support and critique of Tori Jennings. I am thankful that the UWSP area continues to offer and promote experiences like this."*

Get your Bicycling Routes Map

The Stevens Point Bicycling Routes map and brochure will be printed and funded in full by the City of Stevens Point. Maps will be available to the public at several locations including the Stevens Point Convention & Visitor's Bureau, City Hall and area bike retailers.

See the Portage County Bicyvle Route Map at the bottom of the next page.

Graduates - Class of 2016

in scientia opportunitas - In knowledge there is opportunity

Melissa Adamski - Bachelor of Science in Geography
Minor(s): Geographic Information Systems and Spatial Analysis

Nicolaus Anderson - Bachelor of Science in Geography
Minor(s): Geographic Information Systems and Spatial Analysis

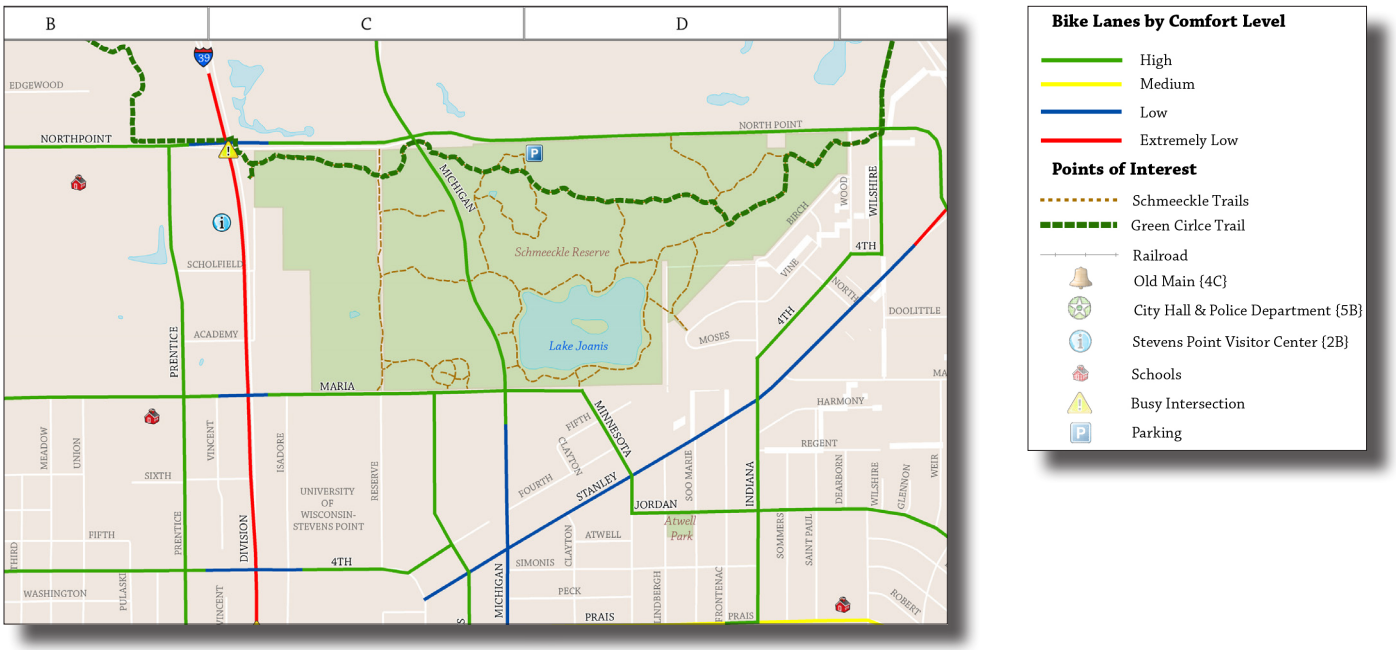
Brandon Lee - Bachelor of Science in Geography and Fish & Water Resources
Minor(s): Geology and Wetland Science
Certificate(s): GIS Professional Certificate and GIS Focal Certificate in Cartography

Kyle McNair - Bachelor of Science in Geography
Minor(s): Sociology

Sydney Swan - Bachelor of Science in Geography and Resource Management
Minor(s): Sustainable Energy

Courtney VandenHeuvel - Bachelor of Science in Geography

A selected portion of the Portage County Bicycle Route Map.



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- Neil Heywood, Professor
- Samantha Kaplan, Associate Professor
- 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

ESRI Geodesign Summit 2017
January 24 - 26, 2017 – Redlands, CA
http://www.esri.com/events/geodesign-summit

Wisconsin Society of Land Surveyors Annual Institute
January 25 - 27, 2017 - Kalahari Resort. Wisconsin Dells, WI
http://www.wsls.org/

Wisconsin Land Information Association Annual Conference
February 22 - 24, 2017 - Chula Vista Resort. Wisconsin Dells, WI
http://www.wlia.org/

National States Geographic Information Council Midyear Conference
February 27 - March 2, 2017. Annapolis, MD.
https://www.nsgic.org/upcoming-conferences

American Association of Geographers Annual Meeting
April 5 - 9, 2017. Boston, MA
http://news.aag.org/event/2017-aag-annual-meeting/