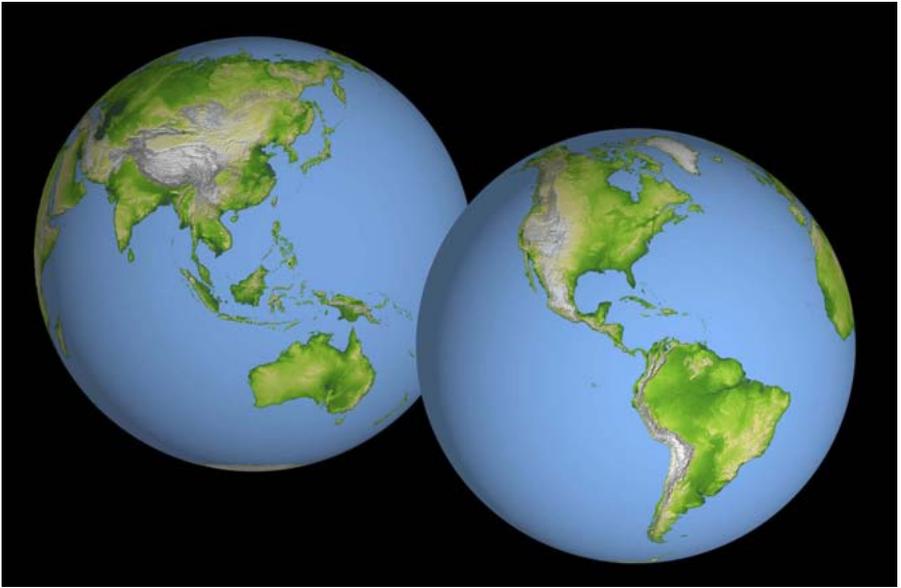


Department of

# Geography & Geology



**University of Wisconsin-Stevens Point**  
College of Letters & Science

## Mission Statement

The primary purpose of the UWSP Department of Geography and Geology is to extend understanding of geography and geology, especially through (a) providing quality baccalaureate degree programs in geography and geoscience, and minor programs in environmental geography, earth science, geographic information systems (GIS) and spatial analysis, geography, and geology, (b) superior teaching of these subjects as components of the University's base of liberal studies, (c) scholarly activity in these fields, and (d) public service.

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*Cloud Gate; urban geography field trip to Chicago*

# Why Major in Geography or Geoscience?

Ever wonder why your home town is located where it's at? Do you enjoy traveling to exotic places and learning about people of different cultures? Are you fascinated by the weather or the awesome power of volcanoes? Are you concerned about environmental issues? Would you like to help plan the future of your community? Do you love maps? If you answered yes to any of these questions you might consider majoring in geography or geoscience.

Geography and geoscience are attractive majors for those looking to explore their interest in the natural world and society. Geographers study the where and why, with focus upon location and interaction across space, and the relationships between human beings and their environment. Geoscientists use geospatial techniques to study the structure of the Earth and its evolution. Geographers and geoscientists use practical field skills as well as quantitative and technological abilities to address problems and discover solutions. Majors in Geography and Geoscience enjoy careers in cartography, environmental management, resource exploration, planning, GIS, and teaching.

The 21st Century world is changing rapidly, and while people once focused on their neighborhood, their town, or their country, we now need to adopt a more global perspective. Geography and geoscience play an increasingly important role in our lives because geopolitical, economic, and environmental issues profoundly affect society. Human activities affect Earth's climate and alter planet Earth's terrestrial and aquatic environments. Majoring in geography and geoscience enables you to study these issues and contribute toward their solution.



*Analyzing stream flow in central Wisconsin; geomorphology field trip*

# Programs

The Department of Geography and Geology offers a major in geography, a major in geoscience, and a variety of minors in geography, geology, and earth science. For further information about our programs call 715-346-2629 or email [geogeo@uwsp.edu](mailto:geogeo@uwsp.edu) or visit [www.uwsp.edu/geo](http://www.uwsp.edu/geo).

## Geography Major

The geography major consists of a minimum of 40-43 credits, including 22 credits of required core courses and 18-21 credits of elective courses depending on the option selected.

### *Core*

All majors study the core concepts of geography which address patterns and processes to the Earth's physical and human landscape. They also learn techniques that include map-making, geographic information systems, and professional development and communication skills. All geography majors must choose one of the four options listed below.

### *Options*

- Human Geography

The human geography option focuses on the processes that shape human interaction with the environment and on the spatial distribution of human activity on the Earth's surface. Human geography plays an important role in addressing sustainable development and civilization. As a social science, students in this option have the opportunity to study cultural, political, economic, urban, rural, population, historical, and tourism geography.

Graduates from this option will be equipped for a wide range of jobs in both the public and private sectors. Among these are urban or rural developer/planner, tourism director, international agency representative, journalist, land economist, market analyst, museum education director, teacher, and intelligence analyst.

- Physical Environment

The physical environment option focuses on the processes that shape the Earth's physical environment and on the geographic patterns resulting from

them. Physical geography is an important field of study for understanding present environmental stresses and for preparing students interested in various environmental careers. Students in this option have the opportunity to study climatology, geomorphology, biogeography, and current environmental issues.

Graduates from this option find employment in private firms or in local, state, and federal government agencies. Potential careers include environmental research coordinator, soil technician, water resource planner, hydrologist, research meteorologist, natural resource planner, land management specialist, and climatologist.

- Geographic Information Science and Cartography

The geographic information science and cartography option focuses on spatial data collection, analysis, and visualization techniques. Students learn geographic information systems (GIS) – a combination of digital technology and geographic data analysis, remote sensing, and cartography – the conceptualization and production of maps. Together GIS and cartography provide indispensable tools for governance, commerce, and environmental management. Students often combine this option with one of the other options.

Students with a background in GIS and cartography can find positions as GIS analysts, coordinators and technicians, land information specialists, cartographers and cartographic illustrators, remote sensing analysts, surveyors, photogrammetric technicians, emergency response managers, land records specialists, and transportation route specialists.



*Student explaining a GIS research project to Congressman David Obey*

- Urban Planning

The urban planning option focuses on the systematic development of communities for present and future generations and seeks to attain the right balance between development, the natural environment, social equity, and sustainability. Students in this option receive instruction in areas such as urban politics, economics, legal systems, public finance, policy analysis, and GIS, that will enable them to work successfully in entry-level positions of planning practice.

Planning is a diverse, dynamic, and highly collaborative profession that encompasses careers in government, private industry, and non-profit organizations. Planners work either as generalists in traditional planning areas such as land use planning, environmental planning, community development, housing, and transportation, or as specialists in areas such as energy development, community empowerment, infrastructure planning, pollution control, or location analyst.

*Four-Year Course of Study (B.A. or B.S.)*

Fall	Year 1	Spring
Geography 101 ..... 5 cr General Education Requirements and Electives ..... 10 cr	Geography 120 ..... 3 cr General Education Requirements and Electives ..... 12 cr	
Geography 276 ..... 3 cr Geography 280 ..... 3 cr General Education Requirements and Electives ..... 9 cr	Geography 279 ..... 2 cr Geography Option Requirements... 3 cr General Education Requirements and Electives ..... 10 cr	
Geography Option Requirements.. 6 cr General Education Requirements and Electives ..... 9 cr	Geography 390 ..... 3 cr Geography Option Requirements... 3 cr General Education Requirements and Electives ..... 9 cr	
Geography Option Requirements.. 3 cr Electives ..... 9 cr Or: Urban Planning Option Requirements ..... 18 cr	Geography 480 or 485 or 490 or 491 or 496 ..... 3 crs Electives ..... 9 cr	

## Geoscience Major

The geoscience major consists of 40-64 credits. The number of credits depends upon the option and courses chosen. All options require the same 15 credits of core courses. The remaining required credits depend on the option selected.

### Core

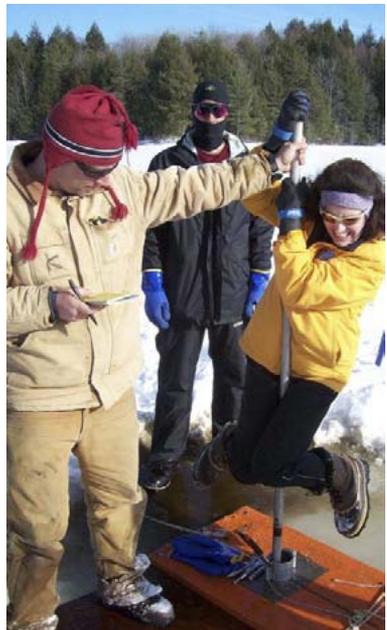
All students majoring in geoscience study core geologic concepts including minerals, rocks, geohazards, resources, and the structure and evolution of the Earth. All geoscience majors must choose one of the four options listed below.

### Options

- Environmental Analysis Option

The environmental analysis option focuses on the fundamentals of geology and geospatial techniques. Environmental analysis is important for assessing environmental impacts of human activities such as mining, resource extraction, and environmental remediation. Students in this option have the opportunity to study geomorphology, climate change and other traditional topics in geology, in combination with remote sensing, cartography, and geographic information systems (GIS). Many of the students pursuing this option double major in Geography.

Students completing the environmental analysis option may find employment in the fields of land use planning, environmental and engineering consulting, mining, geospatial analysis, climate change, earth material extraction, geohazard assessment, and natural resource management with local, county, state or federal government agencies.



*Dr. Kaplan coring lake-bed sediment*

- **Hydrogeology Option**

The hydrogeology option focuses on the occurrence, movement, and quality of groundwater, as well as its utilization as a resource. Hydrogeology is a field-based science that increasingly relies upon numerical modeling and the use of geographic information systems to address groundwater resource issues. Students in this option are required to have a strong background in the physical sciences, including courses from geology, mathematics, physics, and chemistry. Many of the students pursuing this option double major in water resources, physics, or chemistry. Students commonly pursue graduate degrees in geoscience related programs.

Hydrogeologists are employed in both the private and public sectors, enjoying careers with engineering or environmental consulting firms, regulatory agencies, and other governmental entities, such as county planning departments and state or federal geologic surveys. Although employment opportunities exist for students with bachelor's degrees, graduate degrees are often required to advance within the field.

- **Earth Materials Option**

The earth materials option explores the interrelationship of minerals, rocks, soil, and water for their resource and geohazard potential. Knowledge of earth materials is critical to resource extraction and sustainable development as well as remediating altered landscapes. Many of the students pursuing this option double major in soils.

Students with a background in earth materials can find positions working in soil conservation, environmental and engineering consulting, mining, earth material extraction, energy or finance industries, or natural resource positions with local, county, state or federal government agencies.

- **Biogeoscience Option**

The biogeoscience option investigates interrelationships between evolution of Earth's life forms and geologic systems. Biogeoscience is important for increasing our understanding of past environmental conditions and ecosystems, which ultimately increases our ability to predict potential ecological changes associated with current environmental change. Students in this option study Earth's history through the analysis of fossils and depositional environments of the past by taking courses in biology, ecology, biogeography, paleontology, climate change, and museum methods. Many of the students pursuing this option double major in biology.

The biogeoscience option is designed for careers in the energy industry, paleontology, climate change, natural resource positions with local, county, state or federal government agencies, and K-12 science education.

### A Four-Year Course of Study (B.S.)

Fall	Spring
<b>Year 1</b>	
Geology 104 ..... 4 cr Geology 106 ..... 1 cr General Education Requirements and Electives..... 10 cr	Geoscience Requirements and General Education Electives ..... 15 cr
<b>Year 2</b>	
Geoscience Requirements and General Education Electives ..... 15 cr	Geology 200 ..... 4 cr Geoscience Requirements and General Education Electives ..... 11 cr
<b>Year 3</b>	
Geology 310..... 3 cr Geology 320..... 3 cr Geoscience Requirements and Electives..... 9 cr	Geoscience Requirements and Electives ..... 15
<b>Year 4</b>	
Geoscience Requirements and Electives..... 15	Geoscience Requirements and Electives..... 15

### Minors

For students desiring a complement to other majors, available minors include:

- Geography minor
- Geography minor for teacher certification
- Environmental geography minor
- GIS and spatial analysis minor
- Geology minor
- Earth science minor
- Earth science minor for teacher certification



*Dr. Hefferan and a student study a lava tree mold on the big island of Hawaii*

# GIS Center Certificate Programs

The GIS Center was founded to provide GIS education to Wisconsin students and working professionals as well as solve spatial challenges important to the state's citizenry through applied research endeavors. The center's mission is to develop a highly skilled GIS workforce that will have lifelong career success through continued educational development and renewal.

Nationally and regionally there is a pressing need for professionals educated in GIS and related spatial analysis techniques. Over 500,000 professionals in fields ranging from environmental assessment to retail trade analysis use GIS in their jobs. The Wisconsin Land Information Association (WLIA) indicates that GIS is one of today's more pervasive high growth employment sectors and sees a clear need for people with a solid education and robust skills in GIS. Consequently, to serve the needs of traditional students and current professionals seeking continuing education, the center has initiated seven one-year certificate programs and multiple advanced GIS application courses.

## One-Year GIS Certificate Programs

Students have the option to earn a professional GIS certificate or one of several focal area certificates. Both tracks consist of required core classes plus a wide range of elective courses. Certificates earned for academic credit will appear on the student's official UWSP transcript.

### *Professional GIS Certificate*

Designed for students who desire flexibility in selecting GIS coursework that fits their specific career path.

### *Focal GIS Certificates*

Designed for students who desire to concentrate on GIS coursework suited to a particular professional field or application area. Available foci include cartography, forestry, urban and regional planning, programming and web development, environmental management, and emergency management.

## ESRI Authorized Courses

The GIS Center has instructors authorized to teach Environmental Systems Research Institute (ESRI) software courses. ESRI is a worldwide leader in the

GIS software market. ESRI short courses will prepare students to maximize the utility of ESRI software and associated extensions.

For more information about GIS certificates contact Doug Miskowiak 715-346-4789.

## Student Organizations and Opportunities

### GeoClub

GeoClub is an informal organization open to all students interested in the fields of geography and geoscience. Students are encouraged to join GeoClub. Membership helps students learn more about geography and geoscience, develop leadership and organizational skills, establish professional contacts, and gain employment. Activities jointly sponsored by GeoClub and Gamma Theta Upsilon include field trips, professional presentations, and social events.

### Gamma Theta Upsilon (GTU)

GTU is an international geographical honor society open to geography students. GTU's goals are to "further professional interest in Geography, strengthen student and professional training through academic experiences, advance the status of Geography as a discipline, encourage student research of high quality, and create further opportunity for graduate study and research in the field of Geography."



*Glen Canyon Dam; geology field trip*

## Annual Student Awards and Scholarships

Awards and scholarships are available to recognize student achievement. Recipients get a check if they are graduating; otherwise the money is credited toward their fall semester tuition.

- Academic Honor Award goes to the graduating geography major with the highest grade point average in departmental courses at UWSP.
- Writing Achievement Award goes to the student who has written the best paper in geography or geology.
- Benjamin Ofori-Amoah Urban and Regional Planning Award goes to the student who has demonstrated capacity and potential for excellence in the field of urban and regional planning.
- Specht Cartography Award goes to the student submitting the most outstanding cartographic project or map portfolio.
- Gamma Theta Upsilon Award for Excellence in Geography is a national award presented to a geography major for excellence in geography.
- National Council for Geographic Education (NCGE) and the Association of American Geographers (AAG) Award for Excellence of Scholarship is presented to a senior geography major for excellence of scholarship.
- Raymond and Ellen Specht Cartography Scholarship goes to the most outstanding cartography student.
- Academic Scholarship goes to the continuing geography or geoscience major with the highest GPA.

*Nathan's  
Hotdogs,  
Coney  
Island, New  
York City;  
human  
geography  
field trip*



- Potential as a Geographer or Geoscientist Scholarship goes to the student who demonstrates the most promise as a professional geographer or geoscientist.

## Internships

Internships enhance knowledge and skills obtained in courses and sponsoring organizations often use internships as recruitment opportunities. Students who wish to be considered for an internship should contact either the Department Chair or the Department Internship Director for approval. Some examples of recent geography and geology internship sponsors include:

- US Department of Interior – Bureau of Land Management
- US Department of Interior – National Park Service
- US Department of Interior – Geological Survey
- US Department of Agriculture – Forest Service
- National Geographic Society
- National Geospatial Intelligence Agency
- Stevens Point Fire Department
- Portage County Planning Department
- Sauk County Land Records Department
- The City of Wausau
- North Central Regional Planning Commission
- UWSP GIS Center
- UWSP Land Use Education Center
- UWSP Small Business Development Center



*Student  
researching  
glacial  
landforms in  
the Grand  
Tetons*

# Alumni Successes

## Careers

The list below shows a sample of job titles and work places obtained by graduates of programs offered in the Geography and Geology Department.

### *Land Records/Land Information Careers*

- Land Records Coordinator/Land Information Officer; Monroe County, WI
- GIS Specialist; Waupaca County Land Information Office, Waupaca, WI
- GIS Coordinator/Land Information Officer; Vilas County Mapping Dept., WI
- Land Records Modernization Coordinator; Trempealeau County, WI

### *Planning and Planning Related Careers*

- Planner; Planning and Development Department, Las Vegas, NV
- Associate Planner; Planning and Zoning Department, Waterloo, IA
- Regional Planner; Regional Planning Commission-Area 15, Ottumwa, IA
- Transportation Planner; East Central Regional Planning Comm., Menasha, WI
- GIS/Planning Specialist; East Central Regional Planning Comm., Menasha, WI

### *Emergency Management Careers*

- Information System Technician, Portage County Emergency Management, WI

### *Education Careers*

- Assistant Professor; Michigan Technological University, Houghton, MI
- High School Social Science Teacher; New Holstein, WI
- Community Resource Development Educator; UW-Extension, Keshena, WI

### *GIS Careers*

- GIS Technician; TechniGraphics, Wooster, OH
- GIS Coordinator; North Dakota State Water Commission, Bismarck, ND
- GIS Analyst; USC/Chevron Partner, Bakersfield, CA
- GIS Associate; Michael Baker, Jr., Inc., Reno, NV
- Geospatial Analyst; Wiser Company, Murfreesboro, TN
- Route Inventory GIS Specialist; Bureau of Land Management, Phoenix, AZ
- Geospatial Intelligence Analyst; National Geospatial Intelligence Agency

### *Environmental Careers*

- Environmental Scientist; Giles Engineering Associates, Waukesha, WI
- Environmental Project Designer; Foth & Van Dyke Engineering, Green Bay, WI
- Field Technician; Giles Engineering Associates, Waukesha, WI
- Supervisory Park Ranger; Catoctin Mountain Park, Thurmont, MD
- Waste and Materials Management Bureau Director; Department of Natural Resources, Madison, WI

### *Photogrammetry Careers*

- Photogrammetry Supervisor; Continental Mapping, Sun Prairie, WI
- Photogrammetry Technician; Aerometric, Sheboygan, WI

### *Surveying Careers*

- Survey Crew Chief; Rettler Corporation, Stevens Point, WI
- Registered Land Surveyor; Compsite Surveying & Mapping, Hingham, WI
- Surveyor; City of Stevens Point Engineering Department, Stevens Point, WI

## **Graduate Studies**

Some graduates of the Department of Geography and Geology have gone on to pursue graduate studies and a sampling of the programs in which they enrolled is listed below.

- Department of Geology, University of Kansas
- Department of Geography, University of Idaho
- Department of Geography, University of Wisconsin-Milwaukee
- School of Architecture and Urban Planning, University of Wisconsin-Milwaukee
- Department of Urban and Regional Planning, University of Wisconsin-Madison



*Dr. Larsen researching yellow-eyed penguins and albatrosses on Campbell Island, New Zealand*



*Measuring strike and dip; geology field trip*

## Facilities

The Department of Geography and Geology is located on the third floor of the Science Building. For further information about our facilities call 715-346-2629 or email [geoggeol@uwsp.edu](mailto:geoggeol@uwsp.edu) or visit [www.uwsp.edu/geo](http://www.uwsp.edu/geo).

## Spatial Analysis Computer Laboratories

The Department of Geography and Geology computer laboratories provide access to specialized state of the art computer equipment for the facilitation of map production and geographic analyses. There are two large teaching laboratories and two small laboratories for individual student use. Examples of products created by students and faculty in these facilities include contour maps, three-dimensional terrain surfaces, fly-over animations, vegetation change detection analysis of remotely sensed imagery, geologic and groundwater mapping, and socio-economic thematic maps. Students enrolled in relevant classes have 24/7 access to these facilities.

## Earth Materials Testing Laboratory

The Earth Materials Testing Laboratory supports equipment for classroom and research projects such as analyzing climate change through tree ring and lake bed sediment analysis, testing properties of earth materials such as texture and strength, flume studies, and analyzing relationships between stream flow and bed texture.

## Field Equipment

Field equipment is available for stream hydraulic analysis, lake sediment core analysis, sediment analysis, tree ring analysis, weather and climate studies, palynology, submeter GPS data collection, large scale urban mapping, surveying, land use analysis, geologic mapping, and photogrammetry.

## Maurice E. Perret Map Center

The Department of Geography and Geology administers the Maurice E. Perret Map Center, a depository for maps and charts of the U.S. Geological Survey and the National Geospatial Intelligence Agency. During the academic year the map center is open on a regular schedule for use by the university community and the public.

## UWSP Museum of Natural History

The UWSP Museum of Natural History, housed within the College of Letters and Science, contains mineral, rock and fossil specimens, as well as extensive examples of native and exotic mammals, fish, birds, and plants. The Department of Geography and Geology houses the bulk of the UWSP Geology Collection. The museum is highly regarded for its teaching and research collections which support valuable scientific discovery opportunities for UWSP undergraduate students. The Museum Director, Ray Reser, maintains academic affiliation within the Department of Geography and Geology.



*Students riding yaks in Tibet; human geography field trip*

*“I am [currently] a Trial Attorney for the United States Department of Justice's Environment and Natural Resources Division. As a member of the Natural Resources Section, my career focuses mostly on water allocation law and the National Environmental Policy Act. I will always remember my time in the Department at UWSP and will always hold that without the practical, scientific background given to me by the [geography and geology faculty], I wouldn't be where I am today.”*

*UWSP Geography/Geology Alumnus of 2003*

# Instructional Personnel



***Kevin P. Hefferan, Professor***

Ph.D. Duke University 1992

Expertise: Earth materials; structural geology; physical and environmental geology; geologic mapping in mountains



***Neil C. Heywood, Professor***

Ph.D. University of Colorado 1989

Expertise: environmental hazards; biogeography; field studies; outdoor recreation; North America; oceans



***Samantha W. Kaplan, Assistant Professor***

Ph.D. University of Wisconsin-Madison 2003

Expertise: climate change; Quaternary studies; sedimentary geology; paleolimnology; palynology; tree rings



***Eric J. Larsen, Associate Professor***

Ph.D. Oregon State University 2001

Expertise: remote sensing; geographic information systems; photogrammetry; biogeography



***Karen A. Lemke, Professor***

Ph.D. University of Iowa 1988

Expertise: physical geography; geomorphology; rivers; glacial geology; quantitative methods



***Eugene W. Martin, Visiting Instructor***

ABD University of Washington

Expertise: GIScience; modeling; sustainability; remote sensing; organizational change; programming



***Doug Miskowiak, GIS Education Specialist***

MS University of Wisconsin-Madison 2002

Expertise: geographic information systems (GIS); urban and regional planning; public participation; natural resources



***Ismaila Odogba, Assistant Professor***

Ph.D. University of Louisville 2009

Expertise: land use planning; political economy of urban systems; urban policy



***David L. Ozsvath, Professor***

Ph.D. State University of New York at Binghamton 1985

Expertise: hydrogeology; groundwater geochemistry;  
environmental geology



***Keith W. Rice, Professor***

Ph.D. University of Kansas 1989

Expertise: multimedia cartography; geographic information  
systems; remote sensing-digital image processing



***Michael E. Ritter, Professor***

Ph.D. Indiana University 1986

Expertise: physical geography; climatology; hypermedia and  
internet applications for geographic education and research



***Karl E. Ryavec, Associate Professor***

Ph.D. University of Minnesota 2002

Expertise: historical geography; geography of religion;  
geographic information systems; cartography



***Lisa J. Theo, Instructor***

ABD University of Wisconsin-Madison

Expertise: human, urban, rural, environmental and tourism  
geography; geographies of underrepresented groups

**Affiliated Personnel**



***Chris Cirno, Dean of the College of Letters and Science***

Ph.D. Syracuse University 1993

Expertise: surface water hydrology; watershed studies;  
wetland biogeochemistry; water quality



***Ray Reser, Director UWSP Museum of Natural History***

Ph.D. Australian National University 2009

Expertise: geo-archaeology, paleontology; Paleo-anthropol-  
ogy; indigenous rock art

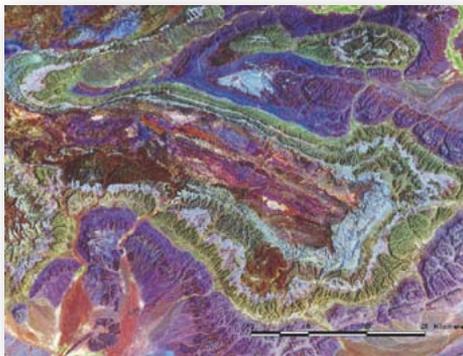
*“My time spent in the Geography & Geology department at UW-Stevens Point was, simply put; amazing...the faculty fostered a passion for learning in the truest sense of the word.”* UWSP Geography/Geology Alumnus of 2007

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**Geography & Geology**

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**University of Wisconsin-Stevens Point**  
College of Letters & Science