

To: College of Arts and Sciences Curriculum Committee

From: Phil Ihinger, Chair  
Department of Geology

Date: March 11, 2022

Re: Proposal to Change Department Name

The ***Department of Geology*** is proposing to change its name to the ***Department of Geology and Environmental Science***.

#### Rationale

The Department of Geology is proposing to change its department name to better reflect the academic array of programs offered to our students. Currently, the Department of Geology has four comprehensive major emphases: 1) the ***General Geology*** emphasis; 2) the ***Hydrogeology and Water Chemistry*** emphasis; 3) the ***Environmental Science*** emphasis; and 4) the ***Dual Degree Engineering*** emphasis (partnered with the University of Minnesota-Twin Cities). Many students receiving degrees in all four of these emphases enter careers and internships that focus on the environment, with graduates holding the titles such as 'Environmental Scientist,' 'Hydrogeologist', or 'Environmental Engineer.'

The department maintains an up-to-date alumni database, and our database shows that alumni are employed at over thirty private sector environmental consulting and environmental engineering firms (see Appendix A). UW-Eau Claire geology alumni are also employed by an impressive array of state and federal agencies, including the WI ***Department of Natural Resources*** (DNR), the US ***Environmental Protection Agency*** (EPA), the USGS ***Upper Midwest Water Science Center***, the MN ***Pollution Control Agency***, the US ***Department of Agriculture*** (USDA), the MN ***Department of Health***, both the WI and MN ***Departments of Transportation***, the ***Eau Claire City-County Health Department***, the CO ***Department of Public Health***, and multiple regional ***Departments of Water Resources***.

Three Geology alumni who are environmental scientists have recently been honored by our University: Jennifer Borski '96 (2021 President's Award), Bridget Osborn '09 (2019 Outstanding Recent Alumnus Award), and Dr. Kristie Franz '95 (2019 President's Award). Two of our alumni are now professors of Environmental Science: in addition to Dr. Franz (Professor and Department Chair of Geological and Atmospheric Sciences at Iowa State University), Dr. Terri Hogue '95 is Professor and Department Head of Civil and Environmental Engineering at the Colorado School of Mines.

Changing the department name will also better reflect what we do for our students. Incorporating ***Environmental Science*** at the department level will help to guide prospective students and better express the true focus and character of the department. Showcasing this career path will be advantageous for recruiting new students, especially out of high school, who may not recognize our commitment to, and expertise in, the environmental sciences.

We provide eight additional reasons why our proposed name change is appropriate and meaningful:

- The Department of Geology has a long history of preparing students for environmental careers in educational tracks:
  - 1986-87 catalog - The **Environmental Emphasis** in Geology was implemented.
  - 1991-92 catalog - The **Hydrogeology and Water Chemistry** emphasis in Geology was implemented.
  - 1991-92 catalog - The **Environmental Emphasis** was split into two programs: the **Environmental Studies Emphasis** (under Comprehensive Major: Geology), and the **Environmental Geology and Earth Resources Emphasis** (under Major: Geology).
  - 1999-2000 catalog - the two environmental programs were re-combined into one **Environmental Science Emphasis** (under Comprehensive Major: Geology).

These programs have been an important part of the geology program for the last twenty-three years. The department recently completed a major revision to the program in the 2020-2021 catalog and requires courses from multiple departments across the campus. Our renewed dedication to the environmental program has been beneficial for UW-Eau Claire students, and currently nearly half (48%) of the geology majors (n=80) are committed to the Environmental Science (n=25) and/or the Hydrogeology & Water Chemistry (n=13) emphases.

- The move to add *Environmental Science* to our department name was recommended by the **Internal Review Committee** in the Department of Geology's most recent 7-year review process (2018-2019). The Committee consisted of UW-Eau Claire faculty members from the **departments of Biology, Chemistry & Biochemistry, and Economics**, and they stressed: "One topic that came up in our meetings with junior/tenure-track faculty was the recent move within the discipline of geology to incorporate the term 'environmental science' into the department/program name. We encourage the department to give this idea some serious consideration in the coming years."
- The move to add *Environmental Science* to our department name was also recommended by the **UW-Eau Claire Geology Department and Responsible Mining Initiative Advisory Board** at its annual meeting last May. The Board consists of fifteen professionals (including representatives from five environmental consulting firms and four environmental government agencies). In their summary statement addressed to Dean Sternfeld-Dunn and cc'd to Provost Kleine (see Appendix B), the **Board** noted that adding Environmental Science to our department name would: 1) help incoming students with interest in the environment to better identify their desired course of study earlier; 2) complement our existing curriculum; 3) help market our students to potential employers; and 4) align with the **UW-Eau Claire 2025 Strategic Plan**.
- Earth Science departments in academia across the country are evolving to reflect their focus on environmental science. We document 85 departments with curricula centered in the earth sciences that have recently changed their name to include the word 'Environment' (see Appendix C).

- Our environmental science majors have one of the most interdisciplinary set of requirements on campus. Our geology major requirements include courses in the departments of **Chemistry & Biochemistry, Biology, Geography & Anthropology, Public Health & Environmental Studies, Physics,** and **Mathematics**. Drawing more students to the University through the enhanced visibility of our department name will benefit all of these departments.
- The Department of Geology has been instrumental in the development and coordination of the statewide Freshwater Collaborative of Wisconsin (FCW), with UW-Eau Claire's steering committee member housed within Geology. In the past four years, our department has been awarded several grants from the FCW, including two research grants for studying phosphorus contamination in groundwater and its impact on lake eutrophication (total \$72,000), three educational freshwater summer program grants (total \$147,000), and funding to support SREU summer research (\$39,000). The educational programs and summer research funding from the FCW also provide support to freshwater sciences across UW-Eau Claire, including the departments of **Biology, Geography & Anthropology,** and **Public Health & Environmental Studies**.

In addition to external funding through the Freshwater Collaborative of Wisconsin, our Department has been awarded two Groundwater Research and Monitoring Program grants through UW System since 2019 (total \$73,000), a subgrant through an Environmental Protection Agency Environmental Education grant to work with Future Farmers of America Groups (\$4800), and an annual renewable contract with the WI Department of Natural Resources to monitor stream discharge in western Wisconsin (~\$13,000/year since 2019). All research and outreach programs are collaborative with students and often across environmentally-related departments/programs at UW-Eau Claire and with UW-River Falls, UW-Stout, and UW-Oshkosh.

- Following the recommendations of the Internal Review Committee and our Advisory Board, the Department of Geology voted unanimously in favor of changing the department name to the Department of Geology and Environmental Science on August 25, 2021. We subsequently consulted with other UW-Eau Claire stakeholders in departments/programs offering environmental programming to hear feedback on our proposal.
- Early discussions with environmental-science stakeholders in the College raised a concern with our proposal to change our name: Is it appropriate that one department gain 'ownership' of the words 'Environmental Science' by including them in their department name? In this proposal we have demonstrated strong evidence to support why the name **Geology and Environmental Science** is an accurate representation of the programs offered through our department and in line with Geoscience academic departments across the country. No department owns any discipline, and there are plenty of examples at our university with an academic discipline in the name, but where scholarship and teaching of the discipline is also taught within other departments. Our department has no intention of

'owning' all that is 'environmental science', as every one of our academic programs include course degree requirements from our partner departments across the College. We encourage and actively support other departments offering academic environmental programs to incorporate the word 'environment' or 'environmental' in their name if they find it would benefit their department to do so.

In conclusion, we believe a name change to the ***Department of Geology and Environmental Science*** will help us recruit high-quality students from high schools and better reflect the needs and goals of our students, the nature of our academic programs, and the mission of our University. This name change will have a positive impact across the College of Arts and Sciences as students in our environmental emphases take courses across the college, particularly in other programs offering courses with an environmental focus.

Requested effective date: Effective upon approval at all levels of governance; changes to appear in the 2023-2024 catalog.

Appendix A: List of Environmental Consulting and Environmental Engineering firms employing UW-Eau Claire undergraduate majors from the Department of Geology:

<b><u>Company Name</u></b>
AECOM
AET
ARCADIS
Ayers Associates
Barr Engineering
Brown and Caldwell
Call and Nicholas, Inc
CB&I
CBM Associates
Cedar Corporation
CH2M Hill
Cooper Engineering
Enbridge Energy
Foth
Geosyntec
GHD
GZA GeoEnvironmental Inc
High Cliss Consulting
HR Green, Inc
Ingersoll Rand
InterTech Environmental and Engineering, LLC
Itasca Consulting Group
Jacobs Engineering
MSA Professional Services
Oakridge Engineering
R&M Consultants
Regenesis
REI Engineering
RMT, Inc
Shannon and Wilson, Inc
SHE Tetra Tech
Stantec
Summit Envirosolutions
TRC Companies
URS Corporation
Wood Rogers, Inc.

## Appendix B: 2021 Letter from UW-Eau Claire Geology Department and RMI Advisory Board



August 27<sup>th</sup>, 2021

Dr. Aleks Sternfeld-Dunn  
Dean, College of Arts and Sciences  
University of Wisconsin—Eau Claire  
Schofield Hall 220  
105 Garfield Ave  
Eau Claire, WI 54701

Dear Dean Sternfeld-Dunn,

We are writing this letter on behalf of our colleagues on the University of Wisconsin – Eau Claire Geology Department and Responsible Mining Initiative Advisory Board. The intent of this letter is to summarize important updates from the annual board meeting and to make recommendations based on feedback and discussions from the 13 Advisory Board members and nine UWEC Geology faculty members present at the meeting held May 4, 2021. The makeup of the board consists of geoscience professionals representing a wide range of public and private companies along with government and public health agencies, many of whom are also department alumni. Please see the attached list of dedicated board members who volunteer their time and valuable perspective to ensure the continued success and relevancy of the Geology Department long into the future.

The annual board meeting was held virtually owing to COVID restrictions. Several important updates were discussed during the meeting and the board was pleased to see meaningful progress on several previous board recommendations and discussion topics. This year, the faculty presented two broad concerns to the Advisory Board currently facing the Department: 1) increasing the number of geology majors who enroll earlier in their UWEC career to improve student graduation outcomes; and 2) preparing future staffing to meet the needs of our majors. The Advisory Board provided several key insights and strategies to help progress toward these goals.

### Earlier major/minor recruitment through department rebranding

The Board and Department faculty discussed the potential implications of department rebranding through a name change and arrived at a general consensus that the department name should retain a reference to “geology” and that adding *Environmental Science* to the name would provide several meaningful and beneficial advantages. During the Board meeting, Dr. Vitale delivered a presentation highlighting these advantages. During the discussion, Board members were clearly also in favor and recognized numerous benefits, outlined below

1. **Adding *Environmental Science* to the department name would help incoming students with these interests to better identify their desired course of study earlier on.** It is well known by department faculty and the advisory board that many students are recruited to geology

following completion of 100-level coursework and upon recognizing the study topics the Geology Department provides. The trend seems to reflect that incoming freshman do not fully know what the study of 'geology' really entails when they enroll in UWEC with pre-existing interest in the earth and environmental sciences. Students who declare a geology major earlier in their UWEC career are more likely to graduate in four years.

2. **Most Geology students have environmental coursework as part of their emphasis.** Approximately half of Geology Department graduates have a geology degree emphasis of *Hydrogeology + Water Chemistry* or *Environmental Science*, both of which contain rigorous environmental science curricula. The interdisciplinary coursework in both emphases is clearly studying environmental science, and as such, adding that detail to the department name complements the existing curriculum.
3. **More than half of UW-Eau Claire's geology graduates find careers rooted in core geological sciences that also involve some aspect of *Environmental Science* practice or principles**, such as those students that go on to work in hydrogeology, consulting, regulatory agencies, or become environmental specialists. Members of the Board know well that the evolving landscape of the global economy, the need for environmental sustainability in our businesses, and the desire of students to work in meaningful and environmentally-conscience careers support adding *Environmental Science* to the Department name. Incoming students who are savvy to this sharpening focus of employers and current federal administration's policies will find it desirable to have *Environmental Science* highlighted in their educational pedigree while pursuing internships and/or upon graduation.
4. **Adding Environmental Science in the Department name fundamentally aligns with the UW-Eau Claire 2025 Strategic Plan.** Environmental science is a key component to the 2025 Strategic Plan Vision of national distinction in health and wellbeing. Bringing in high-caliber students with interest in environmental science prepares a workforce for the growing need for scientists to better understand natural disasters (climate change, floods, fires, etc.) and man-made disasters (soil, water, and air contamination through human activity), both of which have acute and chronic impacts to human health. The Geology Department is well-positioned to make meaningful contributions toward many of these strategic initiatives as their graduates will directly help society provide clean water, source sustainable raw materials, develop and monitor sustainable agricultural practices, provide clean energy, develop critical new infrastructure, and play a leading role in cleaning up contaminated water, soils, and resources adversely impacted by improper management of our natural resources.

**Board recommendation: We strongly recommend pursuing a departmental name change that refers to Geology and Environmental Science.**

#### Staffing a Geology Department Anticipating Student and Workforce Needs

UW-Eau Claire is currently home to the strongest geology program in the state focused solely on undergraduate education and research opportunities for students emphasizing the core fundamentals of earth sciences. Department faculty currently represent a broad range of expertise and experience in a variety of research and industry sectors. As environmental policy and employer needs shift, the Geology Department has nimbly adapted their preparation of majors to fill the gaps and provide opportunities on

which students can market themselves to graduate schools and employers. One such example is the development of the **Responsible Mining Initiative**, from which this Advisory Board was developed (among many other successful endeavors, such as student internship and scholarship opportunities). The Board recognizes this may be the only kind of initiative like this in the country and supports continued associated student benefits.

Many of the Board members work for global public and private companies and emphasized a notable shift in shareholder's, stakeholder's, and investor's requirements for "low-carbon" and environmentally sustainable operations and investment strategies driven by the new Green Economy. These shifts are requiring major corporations, such as energy providers, mining companies, vehicle manufactures, airlines, mass transit companies, tech firms, and several others to invest in and develop a fundamentally different business strategy. This will require significant hiring of geoscience professionals to help develop the resources required and implement these initiatives.

The Board members (many of whom are UWEC alumni) stressed the importance of, and necessity for, hiring geoscience professionals prepared for work in economic and environmental initiatives currently evolving, such as the new federal infrastructure bill; significant climate goals and mandates required by several states, major corporations, and federal agencies; and need to identify and secure diverse sources for earth resources required by American industry and the military. In short, **the Board sees a growing demand for college graduates with degrees preparing them for employment in the mining, energy, construction, environmental consulting & sustainability, and regulatory agencies; that is, Geology majors.**

The Board recognizes the critical role of the Geology Department faculty in navigating necessary programmatic "tweaks" and producing graduates that compete favorably for these essential jobs.

**Board Recommendation: We strongly recommend the development of a staffing plan to help the department navigate impending retirements.**

In summary, Advisory Board members saw favorable departmental developments over the last year. The new issues discussed are of importance not only to faculty and board members, but to overall student recruitment, retention, and success as well. We welcome any additional questions you may have.

Sincerely,

*Audrey R Boerner*

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Cc: Provost Patricia Kleine  
Dr. Phil Ihinger



## Appendix C: List of 85 Geology/Earth Science Departments with 'Environment' in their name

Institution	Department/Program Name	Majors, Minors, Concentrations
Acadia University	Earth and Environmental Science	Geology, Environmental Geology, Environmental Science
Appalachian State	Geological and Environmental Sciences	Earth System Science, Geology, Environmental Geology, Concentrations: Paleontology, Quantitative Geoscience, Earth/Env Science Secondary Ed
Ball State University	Environment, Geology, and Natural Resources	Earth/Space Science Ed, Environmental Geoscience, Geology, Natural Resources and Environmental Management
Boston College	Earth and Environmental Sciences	Environmental Geoscience, Geological Sciences
Brooklyn College (CUNY)	Earth and Environmental Sciences	Earth and Env Sciences, Earth Science Teacher Concentration
Brown University	Earth, Environmental and Planetary Sciences	Concentrations: Geosciences, Geochemistry, Geophysics, Geobiology
Bucknell University	Geology and Environmental Geosciences	Geology, Environmental Geosciences
Cal State East Bay	Earth and Environmental Sciences	Environmental Science, Geology, Environmental Geoscience, Geoscience Education
Cal State Los Angeles	Geosciences and Environment	Geology, Geography
California State University- Chico	Geological and Environmental Sciences	Environmental Science, Geology, Geoscience teaching
California State University- Fresno	Earth and Environmental Sciences	Geology, Environmental Sciences
Case Western Reserve University	Earth, Environmental, and Planetary Science	Geological Sciences, Environmental Geology
College of Charleston	Geology and Environmental Geosciences	Geology, Environmental Geosciences, Geoinformatics
Colorado Mesa University	Physical and Environmental Sciences	Geoscience, Environmental Science, Chemistry, Physics
Columbia University	Earth and Environmental Science	Earth Science, Environmental Science
Concord University	Physical and Environmental Sciences	Environmental Geoscience, Physics, Chemistry
Dalhousie University	Earth and Environmental Sciences	Earth Science, Environmental Science
Denison	Earth and Environmental Sciences	Earth Science
Earlham College	Earth and Environmental Science	Earth and Environmental Science
Eastern Connecticut State Univ.	Earth and Environmental Science	Environmental Earth Science, Conc: Environmental Science, General Earth Science, Sustainable Energy Science
Florida International University	Earth and Environment	Earth Science, Earth Science Education, Geosciences, Minors: Geology, Meteorology, Environmental Studies
Franklin and Marshall College	Earth and Environment	Geosciences, Environmental Science/Studies
Fresno State University	Earth and Environmental Sciences	Geology, Environmental Science, Water Resource Management
Furman University	Earth and Environmental Sciences	Earth and Environmental Science, Sustainability Science
Hartwick College	Geology and Environmental Sciences	Geology, Environmental Geology, Geological Education
Hofstra University	Geology, Environment, and Sustainability	Geology, Sustainability
Hope College	Geological and Environmental Sciences	Geology, Geology for Education Students, Geophysics, Geochemistry, Environmental Science (Geo with Bio/Chem)
Indiana State University	Earth and Environmental Systems	Geology, Environmental Geoscience, Geography and Sustainability, Anthropology
James Madison University	Geology and Environmental Science	Geology
Lafayette University	Geology and Environmental Geosciences	Environmental Geosciences, Geology
Lehigh University	Earth and Environmental Science	Earth and Environmental Science
McMaster University	Earth and Environmental Science	Courses: Earth history, natural distasters, optical crystallography and mineralogy, Geology of Canada, Soils, Geochem, GIS, Field Camp, Sedimentary Environments, Petrology, Geophysics, Hydrogeology, Contaminants Fate and Transport
Miami University	Geology and Environmental Earth Science	Geology, Environmental Earth Science
Montclair State University	Earth and Environmental Studies	Geography, Earth and Environmental Science, Sustainability Science, Certificantes in Water Resource Management, GIS, Teaching cert in Earth and Environmetal
Murray State University	Earth and Environmental Sciences	Archaeology, Earth Science Secondary Ed, Environmetal Science, Geography/GIS, Geology, Substainability Science
New Jersey City University	Earth and Environmental Sciences	Earth Science, Environmental Science, Geology, GIS
New Mexico Tech	Earth and Environmental Science	Earth Science, Environmental Science (Geo with Bio, Chem, Phys, Eng)
Norwich University	Earth and Environmental Science	Geology
Queens College CUNY	Earth and Environmental Sciences	Environmental Science, Geology
Rensselaer Polytech	Earth and Environmental Sciences	Environmental Science, Geology, Hydrogeology
Rice University	Earth, Environmental, and Planetary Science	Environmental Earth Sciences, Geosciences, Planetary Sciences
Rider University	Geological, Environmental, and Marine Sciences	Earth Sciences, Environmetal Sciences/Studies, Geosciences, Marine Sciences, Earth and Env Sci Minor
Rose State College	Earth and Environmental Science	Atmospheric Science, Earth Science Education, Geology, Natural Resources
Rutgers University	Earth and Environmental Science	Geological Sciences, Environmental Geology, Planetary Science
Sam Houston State University	Environmental and Geosciences	Environmental Science, Geology, Geography, Water Resources and Sustainability
SUNY Fredonia	Geology and Environmental Science	Geology, Earth Science, Earth Science Adolenscence Education
SUNY Plattsburgh	Center for Earth and Environmental Science	Earth Science, Environmental Geoscience, Geology, Geology Education, Ecology
Susquehanna University	Earth and Environmental Sciences	Environmental Studies, Sustainability Management
Syracuse University	Earth and Environmental Science	Earth Sciences
Temple University	Earth and Environmental Science	Geology, Environmental Science
Tulane University	Earth and Environmental Science	Geology, Environmental Earth Science
U Arizona	School of Earth and Environmental Sciences	Geosciences, Hydrology and Atmospheric Science, Environmental Science
U Maine- Farmington	Earth and Environmental Science	Earth and Environmental Sciences, Geology, Environmental Science
University of Dayton	Geology and Environmental Sciences	Geology, Environmental Geosciences
University of Illinois- Chicago	Earth and Environmental Science	Earth and Environmental Sciences
University of Iowa	Earth and Environmental Science	Geoscience, Environmental Sciences
University of Kentucky	Earth and Environmental Science	Geological Sciences
University of Mary Washington	Earth and Environmental Sciences	Geology, Environmental Geology
University of Massachusetts Lowell	Environmental, Earth, and Atmospheric Sciences	Environmental Science, Geoscience, Meteorology & Atmospheric Science
University of Michigan Ann Arbor	Earth and Environmental Science	Earth and Environmental Science

<b>Institution</b>	<b>Department/Program Name</b>	<b>Majors, Minors, Concentrations</b>
University of Minnesota	Earth and Environmental Sciences	Earth sciences, environmental Geosciences
University of Minnesota-Duluth	Earth and Environmental Science	Geological Sciences, Environmental Science, MS Earth Sciences
University of Missouri- Kansas City	Earth and Environmental Sciences	Earth and Environmental Science with tracks: Env Sci, Physical Geography, Geology
University of New Orleans	Earth and Environmental Sciences	Geosciences, Environmental and Coastal Science
University of Northern Iowa	Earth and Environmental Sciences	Earth Science, Earth Science teaching, Environmental Science, Environmental resource management
University of Ottawa	Earth and Environmental Sciences	Geology, Env Geoscience, Geology-Physics, Environmental Science
University of Pennsylvania	Earth and Environmental Science	Earth Science, Environmental Studies, Grad programs in Environmental Studies and Applied Sciences, Earth and Env Sci
University of Pittsburgh	Geology and Environmental Science	Geology, Environmental Science/Studies
University of Rochester	Earth and Environmental Science	Geological Science
University of South Carolina	Earth and Environmental Science	Geological Sciences
University of Texas Arlington	Earth and Environmental Sciences	Geology, Environmental Science
University of Texas El Paso	Earth, Environmental, and Resource Sciences	Earth Environmental and Resources Sciences, Geophysics, Environmental Sciences
University of the Pacific	Geological and Environmental Sciences	Geological and Environmental Sciences
University of Virginia	Environmental Sciences	Atmospheric Sciences, Hydrology, Geosciences, Ecology
University of Waterloo	Earth and Environmental Sciences	Geology, Geophysics, Hydrogeology, Geochemistry (joint with Chem), Environmental Sciences
Vanderbilt University	Earth and Environmental Science	Earth and Env Sciences
Virginia Wesleyan University	Earth and Environmental Science	Earth and Environmental Science
Wayne State	Environmental Science and Geology	Geology, Environmental Science, minors in Geology, Geophysics, Geochem, Env Sci
Weber State University	Earth and Environmental Sciences	Geology, Applied Environmental Geosciences, Earth Science Teaching, Environmental Science
Wesleyan University	Earth and Environmental Science	Earth and Env Sci
Western Kentucky University	Earth, Environmental, and Atmospheric Sciences	Environmental Sustainability and Geographic Studies, Geological Sciences, Meteorology
Western Michigan University	Geological and Environmental Sciences	Earth Science, Earth Science education, Environmental Geology, Geochemistry, Geophysics, Hydrogeology
Western Oregon University	Earth and Environmental Science	Earth and Environmental Science
Wright State University	Earth and Environmental Sciences	Earth and Environmental Sciences
Youngstown State University	Geological and Environmental Sciences	Environmental Science, Geology