Educational Policies Committee Program Proposal, College of Science, July 17, 2019 - Climate Adaptation Science

Utah State University

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**Institution Submitting Request:** Utah State University

**Program Title:** Climate Adaptation Science (CAS)

**Sponsoring School, College, or Division:** University (UN)

**Sponsoring Academic Department(s) or Unit(s):** Geology

**Classification of Instruction Program Code¹:** 30.99 Multi/Interdisciplinary Stu 6 - Digit CIP 30.9999

**Min/Max Credit Hours for Full Program Required:** 9 Min Cr Hr 9/ Max Cr Hr

**Proposed Effective Term for Program Change²:** Fall 2019

**Award Type:** MS and PhD

**Program Change Type (check all that apply):**

- [ ] Name Change of Existing Program
- [x] Program Restructure with or without Consolidation
- [ ] Program Transfer to a new academic department or unit
- [ ] Program Suspension
- [ ] Program Discontinuation
- [ ] Reinstatement of Previously Suspended Program
- [ ] Out of Service Area Delivery Program

**Chief Academic Officer (or Designee) Signature:**

I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Please type your first and last name  __________________________  Date:  __________________________

☐ I understand that checking this box constitutes my legal signature.

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² “Proposed Effective Term” refers to term when change to program is published. For Suspensions and Discontinuations, “effective term” refers to the term the program will suspend admissions.
Program Change Description - Abbreviated Template

Section I: The Request

Utah State University requests approval to restructure Climate Adaptation Science (CAS) effective Fall 2019. This action was approved by the institutional Board of Trustees on May 1, 2019.

Section II: Program Proposal

Program Change Description/Rationale

Present a brief program change description. Describe the institutional procedures used to arrive at a decision for the change. Briefly indicate why such a change should be initiated. State how the institution and the USHE benefit by the change.

Utah State University received a $2.7 million National Science Foundation (NSF) Research Traineeship award in 2017 that affords USU students the opportunity to pursue advanced interdisciplinary research training and a Climate Adaptation Science specialization. The NSF Research Traineeship Program is designed to encourage the development and implementation of bold, new potentially transformative models for STEM graduate education training. The Traineeship Track is dedicated to effective training of STEM graduate students in high priority interdisciplinary research areas, through the comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs.

This proposal, if implemented, will expand the Climate Adaption Science (CAS) specialization into a tenth department, the Department of Geology. The B. S., M. S. and Ph.D. research and teaching efforts in this department concern carbon capture and storage, natural and anthropogenic carbon budgets, landscape sensitivity and responses to climate change, and low-temperature geochemistry of CO2 and CH4 systems. These topics are vital to understanding carbon cycles and to developing effective adaptation strategies. Current and future Geology courses address this topic and our faculty already serve collaboratively on committees with interdisciplinary research foci.

The Climate Adaptation Science (CAS) specialization is currently offered within eleven MS and nine PhD degrees, offered in nine departments and five colleges. This training program emphasizes interdisciplinary research and integrates training in informatics, modeling, communication, leadership, project management, risk assessment, decision-making under uncertainty, and interdisciplinary teamwork. Project research will advance understanding of changing hydroclimate (drought and flood), fire regimes (frequency, area burned, and severity), land cover (range shifts and invasions), social and economic effects, and potential adaptations. The project closely integrates research, instruction, and real-world experience and will foster collaborations among scientists, federal, state, and local land managers, policymakers, trainees, and citizen stakeholders. The NSF funding that started the program is not required for its future effectiveness.

The specialization requires nine credit hours, and will augment the current menu of possible specializations, or elective requirements that already exist in the MS and PhD degree programs. Other participating degree programs are: MS in Applied Economics, Biology, Civil and Environmental Engineering, Climate Science, Ecology, Economics and Statistics,
Environment and Society, Geography, Industrial Mathematics and Statistics, Sociology, and Watershed Sciences; PhD in Biology, Civil and Environmental Engineering, Climate Science, Ecology, Economics, Environment and Society, Mathematical Sciences, Sociology, and Watershed Sciences. The cover page indicates the approval of the College of Science.

Consistency with Institutional Mission/Institutional Impact

*Explain how the action is consistent with the institution’s Regent-approved mission, roles, and goals. Institutional mission and roles may be found at [higheredutah.org/policies/policyr312/](http://higheredutah.org/policies/policyr312/). Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in [higheredutah.org/policies/policyr315/](http://higheredutah.org/policies/policyr315/). Will faculty or staff structures be impacted by the proposed change?*

The CAS specialization emphasizes interdisciplinary research and skill building and encourages a diversity of thought and culture. The curriculum and professional, community-based internship will provide students with skills to serve the public consistent with the mission of Utah State University.

Finances

*What costs or savings are anticipated from this change? If new funds are required to implement the change, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.*

The CAS specialization was funded by a grant from the National Science Foundation; no additional resources will be required from the university. As anticipated in the original proposal, this application to expand the list of participating departments reflects the unique skill set that Earth Scientists of our Geology department bring to climate adaptations. No new physical facilities or modifications to existing facilities will be required. There is no need to hire additional faculty for this program, as the novel educational elements to be provided will substitute for current graduate teaching assignments. The project implements and assesses innovations that are expected to improve graduate training and result in increased retention, decreased time to degree for PhD students, and increased job placement flexibility and satisfaction.