

## Memorandum of Understanding with Graham Sustainability Institute

Masters of Engineering in Applied Climate

Department of Atmospheric Oceanic and Space Sciences

University of Michigan, Ann Arbor

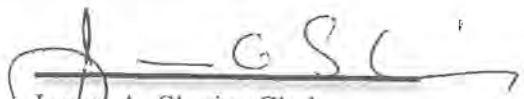
The Department of Atmospheric, Oceanic and Space Sciences (AOSS) has started a program leading to a Masters of Engineering (MEng) in Applied Climate. This MEng is a professional degree designed for students whose interests lie in applying a basic understanding of climate science to problems of engineering, planning, and management. The program features a sponsor-defined “hands-on” project focused on the quantitative analysis of climate information and its application, which will require partners both internal to the University of Michigan and from external organizations.

Planning for climate change is an emerging requirement in many professional fields. Incorporating climate change knowledge into planning, design, engineering and management is not straightforward. Challenges to usability of climate knowledge include: access to data and information, communicating uncertainty, properly analyzing and evaluating data and information to meet application goals, presenting quantitative information for analysis by application experts, and providing expert guidance salient to decision-making contexts for particular applications.

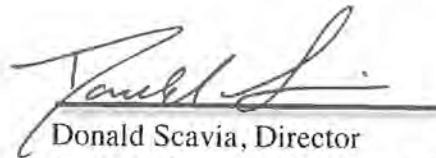
“Hands-on” real-world projects have proved, uniquely, to move potentially useful knowledge about climate change into usable information in planning and management. Through participation in real-world projects, patterns of problem solving emerge, which allow structuring of end-to-end systems that link data, information, knowledge, planning, decisions, and actions.

The Graham Sustainability Institute (Graham) and its family of centers and programs (e.g. GLISA, GLAA-C, Water Center, Integrated Assessments, etc.) often require the inclusion of climate knowledge in their client-driven projects. This includes planning and design for an environment where the climate of the future will not be stable (non-stationarity) – the weather will be changing and highly variable. The projects and clients associated with Graham bring real-world problems with deliverables that require the incorporation of climate knowledge. These projects provide ideal training opportunities. A sample list of current opportunities is attached.

This Memo of Understanding recognizes that the educational, research, and applications goals of both AOSS’s MEng in Applied Climate and Graham benefit from a partnership that includes incorporation of AOSS students and faculty into the real-world projects associated with the Graham and its family of centers and programs. This is a unique alignment of interests and capabilities will accelerate the use of climate knowledge in the broader contexts of sustainable engineering, planning and management essential for our societal success.



James A. Slavin, Chair  
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Graham Sustainability Institute