



Kum-Kum Bhavnani
Telephone: (510) 987-9303
Email: kum-kum.bhavnani@ucop.edu

*Chair of the Assembly of the Academic Senate
Faculty Representative to the Regents
University of California
1111 Franklin Street, 12th Floor
Oakland, California 94607-5200*

September 27, 2019

MICHAEL T. BROWN
PROVOST AND EXECUTIVE VICE PRESIDENT
UNIVERSITY OF CALIFORNIA

Re: Approval of Master of Environmental Data Science (MEDS) at UCSB

Dear Michael,

In accordance with the *Universitywide Review Processes For Academic Programs, Units, and Research Units* (the "Compendium"), and on the recommendation of CCGA, the Academic Council has approved UC Santa Barbara's proposal to establish a graduate program leading to a Master of Environmental Data Science (MEDS) degree.

Because this is a new degree title, and the Assembly of the Academic Senate is not meeting within 30 days of CCGA's approval, Council must approve the program per Senate Bylaw 125.B.7.

I am enclosing CCGA's report on its review of the new program, and respectfully request that your office complete the process of obtaining the President's approval.

Please do not hesitate to contact me if you have additional questions.

Sincerely,

A handwritten signature in cursive script that reads "Kum-Kum Bhavnani".

Kum-Kum Bhavnani, Chair
Academic Council

cc: Academic Council
UCSB Senate Director Blake
IRAP Analyst Procello



COORDINATING COMMITTEE ON GRADUATE AFFAIRS (CCGA)

Onyebuchi A. Arah, Chair
arah@ucla.edu

ACADEMIC SENATE

University of California
1111 Franklin Street, 12th Floor
Oakland, California 94607-5200

August 12, 2019

ACADEMIC SENATE CHAIR ROBERT MAY

Dear Robert,

During the week of August 5, the Coordinating Committee on Graduate Affairs (CCGA) voted via email 10-0-1 to approve a new Master of Environmental Data Science (MEDS) program on the Santa Barbara campus.

In response to the increasing complex environmental problems that call for multi-disciplinary solutions, the MEDS program, which will be the first such program in the United States, aims to train students with broad, practical knowledge and skills to bring complex and real-world data to bear on environmental science issues. It will create a pipeline of talented and skilled graduates who will take up key positions in industrial, business, nonprofit, agency, and academic organizations. As with the existing and analogous Master of Environmental Science and Management (MESM) degree at UCSB, MEDS-affiliated faculty will be global leaders in their fields and boost the data science research and training portfolio on the campus. The MEDS program will leverage the globally recognized environmental informatics and science faculty and resources housed in many different departments and centers at UC Santa Barbara.

The MEDS program is planned as a one-year stand-alone master's program administered by the Bren School of Environmental Science & Management (Bren) and integrated with the National Center for Ecological Analysis & Synthesis (NCEAS), using faculty from departments across UCSB. The program will start with a summer quarter on core coding, and computational and statistical skills. This will be followed by a rigorous curriculum over three academic quarters. Students in the program will learn the content, approaches and tools used by different disciplines to analyze data, with an emphasis on environmental data and problem solving, and acquire competency across a range of data science topics. The program will require a group capstone project spanning winter and spring quarters and will place groups of 3-4 MEDS students in client-driven projects. It will incorporate practical training in science communication and data visualization. Structurally and procedurally, the MEDS program builds on the infrastructure and capacity of Bren staff to provide world-class student support and career development to graduates. These staff and services which will be integral to the **professional aspect** of the MEDS degree program and will be **supported by a supplemental fee**.

Reviewers noted the overall strengths of the program but also provided specific areas for clarification and improvement. The UCSB responses have satisfactorily addressed all of the issues that were raised.

As you know, CCGA's approval is the last step of the Academic Senate side of the Systemwide review and approval process except when the new degree title must be approved by the President, under delegated authority from The Board of Regents. I submit this for your review and have enclosed the

proposer's response. Please do not hesitate to contact me if you have further questions regarding the proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Onyebuchi A. Arah', written in a cursive style.

Onyebuchi A. Arah
Chair, Coordinating Committee on Graduate Affairs (CCGA)

cc: Robert May, Academic Council Chair
Kum-Kum Bhavnani, Academic Council Vice Chair
CCGA Members
Hilary Baxter, Academic Senate Executive Director
Chris Procello, Academic Planning and Research Analyst
Ben Halpern, UCSB Professor, Bren School
Carol Genetti, UCSB Dean of Graduate Studies
Debra Blake, UCSB Senate Executive Director
Kelly Rivera, UCSB Senate Analyst

Enclosures (1)

CCGA has reviewed the recent proposal from UC Santa Barbara to establish a new Master of Environmental Data Science program in the Bren School of Environmental Science and Management. CCGA has obtained expert evaluations, both from non- UC faculty and from UC faculty at campuses other than the proposing campus.

The MEDS program will provide students with broad, practical training in the knowledge and skills needed to bring data to bear on environmental science questions, creating a pipeline of interested and talented students into key positions within business, nonprofit, agency and academic institutions and organizations. It will be the first such program in the United States. As with the current and analogous UCSB Master of Environmental Science and Management (MESM) degree, MEDS-affiliated faculty will also be global leaders in their fields, such that the MEDS program will add data science research strength to the campus. Indeed, the program builds upon the globally recognized strengths in environmental informatics and science housed in many different departments and centers at UC Santa Barbara. MEDS will help coalesce these existing strengths into a coordinated degree, drawing expertise from and serving the needs of departments and faculty in over a dozen departments across every School. The MEDS program will create significant synergies with other emerging data science research initiatives at UCSB. These broader data science initiatives will help MEDS recruit top faculty into the program, and MEDS will provide a powerful lens through which to apply data science research and a mechanism for translating data science tools and knowledge into practical, professional training. Together with existing and emerging data science initiatives at UCSB, MEDS will be a key component of what will make UCSB *the* global leader in environmental data science.

Reviewers were asked to comment on the proposal strengths, as well as its weaknesses. In particular, reviewers were asked to comment on the following issues:

- Quality and academic rigor of the program
- Adequacy of the size and expertise of faculty to administer the program
- Adequacy of the facilities and budgets
- Applicant pool and placement prospects for the graduates

CCGA received two reviews. Both noted the overall strengths of the program but also provide specific areas for clarification and improvement. The reviews consistently identified important strengths of the proposed programs and only minor weakness.

In my opinion, the reviews all supported the new program, noting only minor weaknesses. Moreover, the UCSB responses have satisfactorily addressed all of the issues for clarification that were raised.

RECOMMENDATION: CCGA commends UCSB on this proposal and recommends that the proposed MEDS degree program be approved.