



Mary Gauvain
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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

July 28, 2021

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

Re: Approval of UCSD Online Master of Data Science

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 San Diego's proposal to establish an online Master of Data Science self-supporting graduate and professional degree program (SSGPDP).

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.

Sincerely,

A handwritten signature in cursive script that reads "Mary Gauvain".

Mary Gauvain, Chair
Academic Council

cc: Academic Council
UCSD Senate Director Rodriguez
IRAP Analyst Procello

**COORDINATING COMMITTEE ON GRADUATE AFFAIRS (CCGA)**

Amr El Abbadi, Chair

amr@cs.ucsb.edu**ACADEMIC SENATE**

University of California

1111 Franklin Street, 12th Floor

Oakland, California 94607-5200

July 15, 2021

ACADEMIC COUNCIL CHAIR MARY GAUVAIN

Dear Chair Gauvain:

At its July 7 meeting, the Coordinating Committee on Graduate Affairs (CCGA) voted 9-0-1 to approve a proposal for an Online Master of Data Science (SSGPDP) on the San Diego campus.

Data Science is a burgeoning field of study that combines concepts from Statistics, Computer Science, and Applications where data is forefront and center. These applications are drawn from wide-ranging areas in both academia and industry, including Engineering, Physical Sciences, Social Sciences, Health & Life Sciences, and Arts & Humanities. The Online Master of Data Science program – offered by the Halicioglu Data Science Institute - aims to teach students the skills required to be successful at performing data-driven tasks. The program is designed to be online so that it is able to reach a broad geographic population and provide educational experience to a community that, until now has been underserved.

The Lead Reviewer solicited evaluations from four reviewers: two from the UC system and two external to UC. All four reviewers agreed that this is a high-quality proposed on-line degree and that the quality of the faculty is superb. All four reviewers felt there is a strong market demand for this growing arena of data sciences, and all four felt that the campus has the resources, track record, and reputation to ensure success of this self-supporting degree. However, the reviewers raised a number of issues that required attention. These dealt with curricular matters (insufficient statistics classes, adding skill courses, questions about transferring undergrad credits), with the need to enhance ethics training, with improved advising, and with clarifying the ability of international students to access the program.

CCGA shared these concerns with the UCSD proposer and also asked clarification on the relationship with the in-person MS Degree in Data Science. Within a short time, The Director of the HDSI and Chair of Computer Science at UCSD responded with a detailed, substantive and informative memo addressing all issues raised.

CCGA views the efforts by the UCSD Halicioglu Data Science Institute as a major thrust in Data Science including Master's, on-line Master's and PhD Programs. The committee strongly encourages the UCSD campus to include the Institute in a formal evaluation, maybe as part of its cyclic program review processes, including an external review committee, to evaluate and verify the success of this significant effort. Ideally such an evaluation should be conducted within three years after the three programs are started.

As you know, CCGA's approval is the last stop of the Academic Senate side of the Systemwide review and approval process except when the new degree title must be approved by the Academic Council. I submit this for your review and have enclosed the Lead Reviewer's report. Please do not hesitate to contact me if you have further questions regarding the proposal.

Sincerely,

A handwritten signature in black ink that reads "Amr El Abbadi". The signature is written in a cursive, slightly slanted style.

Amr El Abbadi
CCGA Chair

cc: Robert Horwitz, Academic Senate Vice Chair
CCGA Members
Hilary Baxter, Academic Senate Executive Director
Michael LaBriola, Academic Senate Assistant Director
Chris Procello, Academic Planning and Research Analyst
James Antony, UCSD Graduate Dean
Ray Rodriguez, UCSD Senate Executive Director
Lori Hullings, UCSD Senate Associate Director

July 14, 2021

TO: Dr. Amr Eli Abhadi, Chair , CCGA

FROM: Fernando Torres-Gil, Member, CCGA

Professor of Social Welfare and Public Policy

UCLA Luskin School of Public Affairs

SUBJECT: CCGA Review of a proposed new degree program for an Online Master of
Data Science degree at the UC San Diego campus

Background: The CCGA has reviewed a proposed Online degree for a Masters of Data Science. This report provides the results of the evaluations by the CCGA, external reviewers and the UCPB. The results are a collective support for approving this On-line degree. Note that this is concurrent with two other proposed degree programs at the UCSD campus and have overlapping connections: an on-campus Master of Science (MS) degree in Data Science and a Ph.D in Data Science. These two latter proposals have also received support from the CCGA.

Proposed Online Master of Data Science degree: This is a self-supporting, professional degree program that will be housed at the UCSD Halicioglu Data Science Institute (HDSI) in coordination with the Computer Science Department (CSE). The goal is to teach students the skills required to be successful at performing data-driven tasks and to meet an industry and market demand for data science expertise. The program requires 10 quarter-length courses at four units each (total of 40 units) and completion of a capstone project. The courses are comprised of foundational courses (computer science and mathematics), core courses (how to work with big data, how to store and curate data and data mining) and electives (drawing on various application domains).

Expectations are to enroll over time up to 300-600 students and charge up to \$22,000 per student (Note that students can take up to four courses for a small fee and thus have flexibility to continue or disenroll). The tuition is comparable to Georgia Tech, Michigan and Illinois (Urbana-Champaign). The program will be housed in the UCSD HDSI and draw faculty from across the UCSD Campus.

Evaluations: We solicited evaluations from four reviewers: two from the UC System (UCI, UCSB) and from the University of Michigan and University of Illinois. All four reviewers are considered experts and leaders in data sciences and each directs similar programs at their institutions. All four reviewers agreed that this is a high-quality proposed on-line degree and that the quality of the UCSD/HDSI faculty is superb. All four reviewers felt there is a strong market demand for this growing arena of data sciences (giving graduates competitive advantages) and all four felt that UCSD/HDSI has the resources

(sufficient faculty), track record and reputation (top-notch) to insure success of this self-supporting/professional degree.

However, the reviewers raised a number of issues that required attention. These dealt with curricular matters (insufficient statistics classes, adding skill courses (deep learning, natural language), questions about transferring undergrad credits), the need to enhance ethics training, improving advising and clarifying the international students access to the program. We shared these concerns with the UCSD proposer and also asked clarification on the relationship with the in-person MS Degree in Data Science.

UCSD Response to Evaluators Concerns: Within a short time, The Director of the HDSI and Chair of Computer Science at UCSD responded with a detailed, substantive and informative memo addressing all issues raised. They explained the relationship between the Online and in-person degrees and how they target different groups of students with different preparation and end goals but draw upon the HDSI, CSE and campus wide digital Learning initiative (which includes a host of faculty, facilities, experiences) to insure that these two degrees and the Phd benefit from the combined campus resources and expertise of the same faculty members. They also expect that over time there may be a convergence in the planning and offering of courses in the two Masters programs and for some students, an on-road to the Ph.d program. The proposers address the curricular issues by detailing how they will add particular courses (e.g. Natural Language Processing)and expand statistical training (while UCSD does not have a Statistic department the HDSI has a total of six statisticians who will shape HDSI courses in the Masters programs). They clarified the undergrad issues by explaining that students can transfer credits from “Micro Masters” courses. Ethics was seen as crucial to the training and education of students and in that regard they will draw on faculty members in HDSI and CSE whose research concerns areas of ethics, fairness, accountability and explainability . The proposed program has 500k in funds which will be used for DEI activities and advising students and three full time advising staff members will be available. Lastly, they explained that international students will receive assistance in obtaining visas and will have opportunities to seek positions in the US job market.

UCPB Evaluation: The UCPB concluded that the proposed online Master of Data Science degree was financially sound, well funded and address a need for professionals in this rapidly expanding field. The UCPB review felt this was a strong proposal offering an innovative path and with quality of instruction and academic integrity. UCPB felt that the proposal appears to take costs into full account and distributes revenues according to all participating academic units.

Conclusion: Given the positive external reviews and UCPB appraisal and the seriousness by which the proposer addressed all concerns, CCGA voted on July 7, 2021 to recommend approval of this Online Master of Data Science degree at the UCSD campus. CCGA also discussed a potential examination of the three proposed degrees in data sciences (In person, on-line, Phd) at the UCSD campus. This would be for the purpose of understanding, supporting and highlighting what may be a signature effort in the UC System for leadership in this growing and crucial arena of data sciences