



Susan Cochran
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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

June 29, 2023

**KATHERINE S. NEWMAN
PROVOST AND EXECUTIVE VICE PRESIDENT
UNIVERSITY OF CALIFORNIA**

Re: Approval of Master of Climate Solutions (MCS) at UC Berkeley

Dear Katherine:

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 Berkeley's proposal to establish a Master of Climate Solutions (MCS) 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 black ink, appearing to read "Susan Cochran".

Susan Cochran, Chair
Academic Council

Cc: Academic Council
IRAP Analyst Procello
UCB Senate Director Banaria
Executive Director Lin

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

Dean J. Tantillo, Vice Chair
djtantillo@ucdavis.edu

ACADEMIC SENATE

University of California
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June 15, 2023

SUSAN COCHRAN, ACADEMIC COUNCIL CHAIR

Dear Chair Cochran,

On June 7, CCGA met and reviewed a re-submitted proposal from the Berkeley campus for a self-sustaining Master of Climate Solutions (MCS). Last year, CCGA asked UCB to deepen the academic depth of the program to ensure that it would confer knowledge and skills that would be marketable and that would address labor market needs. After discussion, the proposal was approved 9-0-1.

The goal of the MCS program is to equip students with the knowledge and skills they need to foster climate solutions in various organizations around the world and across sectors. The theory of the program is based on two trends. First is the “mainstreaming” of climate: institutions, organizations and businesses whose core functions have little to do with climate or sustainability are increasingly engaging with climate concerns. The second is the growing importance of organizations specifically related to climate and sustainability, which range from declining fossil fuel industries and clean energy companies to new government agencies, transportation regulators, urban planners, and climate advocacy groups. These organizations will play a crucial and growing part in the economy, policy, and society.

The MCS degree is designed to give students an interdisciplinary mix of skills and knowledge that enable them to perform a set of key functions related to climate. Organizations need individuals competent in climate strategy who can conduct life-cycle analysis, perform carbon accounting, make supply chain and procurement decisions, conduct climate risk analysis, design internal carbon pricing, and evaluate the quality of offsets. This streamlined, 29-credit hour program has a target cohort size of 60 students at full scale. It is designed to be completed in ten months, in order to minimize student cost. It will be a Plan II (capstone project) master’s program.

In contrast with the original proposal, the new proposal was revised to reflect a tighter focus on a subset of potential students and to more fully explain how the program would accelerate the careers of those students, with reference to how skills conferred by specific tracks are in demand on the job market. These revisions reflect both changes to the program and improvements in exposition. The revisions do create a modest increase in program cost, but no change has been made to the originally proposed student fee.

The revised proposal was reviewed for CCGA by three of the four experts who reviewed the original proposal, two from within the UC system and one from outside the UC system. UCPB also reviewed the revised proposal. Reviewers were asked to assess if the revised proposal

addressed the concerns raised in the first round of review, specifically, 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, and applicant pool and placement prospects for the graduates. The reviewers stated that the revised proposal addressed many of the concerns raised during the first review and that the revised program proposal is much improved. Furthermore, the proposed program aims to promote diversity at many levels, including implementing best practices in program advertisement, student admissions, and lecturer and faculty recruitment. In addition, the proposal now includes efforts for fundraising for financial aid, and the development of an on-boarding process to enable students from varied backgrounds to close gaps prior to the start of the program.

The reviewers as well as UCPB also point out some remaining concerns accompanied by suggestions on how to address the concerns. However, CCGA's reviewers, the Lead Reviewer, and UCPB believe that these points of concern can be monitored closely as the program is being implemented, and that the program should be approved. The Lead Reviewer's report is attached, as is UCPB's.

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

Sincerely,

A handwritten signature in green ink, appearing to read 'J. Tantillo', with a long horizontal flourish extending to the right.

Dean J. Tantillo
CCGA Vice Chair

cc: James Steintrager, Academic Council Vice Chair
CCGA Members
Monica Lin, Academic Senate Executive Director
Michael LaBriola, Academic Senate Assistant Director
Chris Procello, Academic Planning and Research Analyst
Lisa García Bedolla, UCB Dean of the Graduate Division
Jocelyn Surla Banaria, UCB Senate Executive Director
Sumei Quiggle, UCB Senate Associate Director



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June 14, 2023

Summary review report on the UC Berkeley Proposal to establish a New Master of Climate Solutions Self-Supporting Degree Program.

Background

The Coordinating Committee on Graduate Affairs (CCGA) is reviewing a revised proposal from UC Berkeley to establish a new self-supporting program of graduate studies in Climate Solutions for the Masters degree. The first system-level review of this proposed program took place in 2022. The main issues raised in the first round were (A) The high cost of the program, (B) The administration of the capstone project, and (C) the placement of students.

Revised Proposal and 2nd Review

The revised proposal was reviewed for CCGA by three of the four experts who reviewed the original proposal, two from within the UC system and one from outside the UC system:

Reviewer 1: Dr. Robert Mendelsohn

Edwin Weyerhaeuser Davis Professor of Forest Policy; Professor of Economics; and Professor, School of Management
Yale University

Reviewer 2: (opted to remain anonymous)

Reviewer 3: Dr. Fonna Forman

Professor Department of Political Science, Director, UCSD Center on Global Justice
University of California San Diego

The fourth reviewer from the previous proposal was unavailable to review in this second round. No additional reviewers that were asked were available. CCGA also received UCPB's review of the revised proposal.

The CCGA solicited reviewers were asked to assess if the revised proposal addressed the concerns raised in the first round of review, again considering • 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, and • Applicant pool and placement prospects for the graduates.

The reviewers stated that the revised proposal addressed many of the concerns raised during the first review and that the revised program proposal is much improved. Similarly, UCPB's review recognizes clarifications regarding the focus of the program and changes addressing academic rigor.

Reviewer 1: --*"I believe that the revised proposal is a great deal stronger than the original proposal. There is clear support from the three departments who will be integrated most closely with the new*



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degree. There is a clear commitment from a core faculty to teach the basic courses in the new degree. The quality of this faculty is excellent. What is going to be taught is now clear. I think UC Berkeley is well positioned to attract students from California and the western United States in general for this degree. [...] I recommend that the program begin immediately. [...]

Reviewer 2: --*"The amended proposal shows significant improvement, specifically in the expanded capstone experience. In my initial review, I highlighted concerns related to the capstone, the program electives, the cost per degree analysis, and the lack of emphasis on justice and equity in the core courses. Most of these concerns have been addressed."*

Reviewer 3: --*"I append my original review below, to emphasize that I was thoroughly supportive of the MAS proposal as presented in May 2022. I enthusiastically endorsed the program then, and my support and respect for the PIs have only deepened after reviewing the exciting and rigorous updates the PIs have assembled in response to reviewer comments."*

UCPB: --*"The program has clarified that its focus is on the business of climate crisis response work, e.g., management and policy rather than science or engineering, and emphasizes that it is aimed at mid-career professionals. The program has added remote pre-skills instructional and self-assessment materials, and a voluntary two-week summer "bootcamp" to help ensure that admittees from diverse academic and professional backgrounds are all at a level to benefit from the program's one year timetable. The capstone project has been expanded to require both semesters to complete, with the added fall semester component incorporating project management and related professional skills training."*

The reviewers as well as UCPB also point out some remaining concerns accompanied by suggestions on how to address the concerns:

The two main concerns are raised by Reviewer 2 regarding "[...] first the Changemaking course and second the vision for incorporating equity and justice topics into the degree program." It is being proposed that students take the Changemaking course at the beginning of their degree program. The reviewer argues that for the Changemaking course to be able to deliver on its promise to train students in becoming advocates and leaders for climate change who emphasize equity and justice topics, the students first need to acquire knowledge in climate science and policy as well as skills in applying quantitative tools. In addition, the reviewer emphasizes the need to ensure all students to be able to coherently learn about equity and justice topics via one consistent approach. The reviewer recommends that both concerns can be addressed by scheduling the Changemaking course to the Spring B session and consolidating in this course *"learning about climate equity and justice and of supporting students to be environmental changemakers"*.

Lessor concerns were raised on the following aspects:

- By Reviewer 2:
 - The messaging on the distinction between the two tracks is somewhat misleading,
 - The list of courses providing professional skills training is rather short including only the Changemaking course, but that it could be expanded by including the capstone courses, and



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- The analysis relating to cost of competitor programs is still incomplete.
- By Reviewer 1:
 - The *“capstone course can be an enriching experience, or it can be chaos. A lot will depend on faculty involvement in that course.”*, and
 - *“What remains uncertain is whether there will be adequate interest in the new degree by prospective students, whether a single year will be long enough to prepare the students for their chosen profession, and whether or not the students will prosper.”*
- By UCPB:
 - Despite the cost of the program at \$69,000 being less than the average of competitors in and outside the UC system, it remains unclear whether the program is a good value for the students.
 - That the plan remains *“for lecturers to teach the capstone project as well as the expansion of lecturer use in the state supported programs from which ladder-rank faculty for the proposed program will be drawn.”*

CCGA’s lead reviewer concurs with these assessments by the solicited reviewers and UCPB, and in particular that CCGA’s main concern on rigor has been addressed satisfactorily in the revision, including by developing a level-setting on-boarding process, offering distinct tracks, expanding the capstone course to two semesters, introducing basic programming skills. Regarding the prior concerns related to diversity, the proposed program aims to promote diversity at many levels, including by learning from existing programs at UC Berkeley and by implementing best practices in program advertisement, student admissions, lecturer and faculty recruitment. In addition, the proposal now includes efforts for fund raising for financial aid, and the aforementioned development of an on-boarding process to enable students from varied backgrounds to close gaps prior to the start of the program.

The CCGA solicited reviews, UCPB as well as the lead reviewer suggest that despite the remaining concerns the program should be approved, and that the points of concern should be monitored closely as the program is being implemented.

Summary and Recommendation

Overall, the revisions to the proposal have largely addressed previous concerns and significantly improved the program. The remaining concerns pointed out by the reviewers and UCPB can be addressed in the process of implementing the program, and through gaining experience running the program while monitoring and assessing its components. Therefore, it is recommended to approve the establishment of the proposed Master of Climate Solutions Self-Supporting Degree Program, with the reviewers’ suggestions for addressing the remaining concerns be forwarded to the proposers for their consideration. Findings from assessing the program components and any taken or to be taken corrective actions are to be included in the program’s three-year review.

CCGA

At the June CCGA meeting on June 7th 2023, the revised proposal and the reviews were discussed. CCGA concurred with the recommendation and voted in favor of the establishment of a New Master of Climate Solutions Self-Supporting Degree Program at the Berkeley Campus.



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Prepared by:

A handwritten signature in blue ink that reads "Michael Scheibner".

Dr. Michael Scheibner (Lead Reviewer, UCM GC Chair)
Associate Professor for Physics,
Affiliate Faculty Materials & Biomaterials Science & Engineering
University of California, Merced



UNIVERSITY COMMITTEE ON PLANNING AND BUDGET (UCPB)
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March 24, 2023

**ERITH JAFFE-BERG, CHAIR,
COORDINATING COMMITTEE ON GRADUATE AFFAIRS**

RE: UC BERKELEY MASTER OF CLIMATE SOLUTIONS

Dear Erith,

UCPB appreciates the opportunity to comment again on the proposed UC Berkeley Master of Climate Solutions self-supporting degree. In its review last year, UCPB expressed several concerns about the program's academic rigor and cost-to-value ratio.

The program has clarified that its focus is on the business of climate crisis response work, e.g., management and policy rather than science or engineering, and emphasizes that it is aimed at mid-career professionals. The program has added remote pre-skills instructional and self-assessment materials, and a voluntary two-week summer "bootcamp" to help ensure that admittees from diverse academic and professional backgrounds are all at a level to benefit from the program's one year timetable. The capstone project has been expanded to require both semesters to complete, with the added fall semester component incorporating project management and related professional skills training.

The cost of the degree, at \$69,000, is less than the average of competitors both within the UC and across the country though it is compressed into a shorter timeframe and lacks an internship. The return on the degree is provided by projections of robust job growth in relevant fields in positions paying from well over \$100,000 to those paying only \$70,000. It is not clear that this program presents a good value for all potential students, especially as there are certificate programs offering similar training for significantly lower tuition. Student placement should be monitored carefully for inclusion in the program's three-year review.


UCPB remains concerned about plans for lecturers to teach the capstone project as well as the expansion of lecturer use in the state supported programs from which ladder-rank faculty for the proposed program will be drawn. Students in state-supported programs will experience a reduction in time with ladder-rank faculty who are switched to the proposed degree program. While the

proposal indicates that the college is below the campus average in student/lecturer hours UCPB notes that the Berkeley campus is well above the systemwide average. The program's plans to center DEI concerns and the increase in return to aid are promising changes from the first iteration of the proposal.

Committee members noted that the program does not explicitly account for repayment of the loan from the Rausser College Dean's discretionary fund, although sufficient funds and a mechanism for repayment from revenue is indicated.

Despite these reservations, UCPB recommends approval of this degree program.

Sincerely,

A handwritten signature in black ink that reads "Donald Felt Senear". The signature is written in a cursive, flowing style.

Donald Senear, Chair
UCPB

Attachment
cc: UCPB

UCPB Proposed Self-Supporting Professional Degree Program Review Template

Name and Location of Program: Master of Climate Solutions Self-Supporting Degree Program at UC Berkeley

Lead reviewer: Peter Atkinson

Academic justification: The program seeks to educate students who, through the knowledge acquired from their instruction and participation, will design and execute solutions to the many challenges that climate change is presenting to our civilizations across the planet.

Planning and Budget overview:

1. *Proposed initial tuition and any rate of increase:* \$69,489 for two semesters which includes the Campus Service Fee and including 5% inflation for 2022 and 2023.

2. *Target enrollments for years 1-3:*

2024/25	2025/26	2026/27
30	38	45

3. *Projected net revenues for years 1-3:*

2024/25	2025/26	2026/27
\$(898,051)	\$(466,098)	\$4,478

4. *Proposed indirect cost rate (IDC):* 15% (per campus guidelines)

Introduction:

The Master of Climate Solutions Program is aimed at early-mid career professionals who are at least three years into the workforce. It is hosted by three departments in the Rausser College of Natural Resources, these being the Departments of Agriculture and Resource Economics, Environmental Sciences, Policy and Management, and the Energy Resources Group. It is a one-year program. Students may have a variety of backgrounds which the short summer course mentioned below will seek to address. To summarize the proposed Master of Climate Solutions program, it has a minimum of 29 u to completed in two semesters with a short 2-3 week summer course (a “boot-camp”) containing one 2 u course to be completed in the August preceding fall semester. Each semester will consist of three tracks with relevant core courses, electives, and a capstone in each. There are eight core courses, each 2 u, with five “content” courses covering critical climate-related issues in the natural and social sciences. Two additional cores courses provide analytical skills, methods, and tools essential for careers in climate, while the final core course in professional skills provides instruction

in how to effect change in organizations. Four core courses are completed each semester (8 u total per quarter). The capstone is for 2 u in fall and 3 u in spring semester, the colloquium for 2 u extends across both semesters, while 2-3 relevant electives are taken each semester for a total of 6 u total.

Detailed areas of review:

5. How was the proposed IDC rate determined? Does the proposed rate appear to cover all indirect costs (facilities, IT, etc.)? What are the space needs of the program?

The 15% IDC is based on the Berkeley campus guidelines. The estimated costs of IT, web expenses and facilities expenses combine to approximately \$13,000-16,000 per year (excluding year 1) which is under the 15% return on revenue generated by full enrollment.

Space needs: The long-term home of the program will be Wellman Hall in which there is a lecture room (Rm 311) with a 70-seat capacity and common space which includes a lounge and program offices. However, these need retrofitting and the timeline for this remains uncertain due in part to the seismic retrofit that needs to occur to Wellman Hall (which I assume is to the complete structure) which will be paid by state funds. As such the program will need to rent space elsewhere on campus until this work is commenced and completed with the David Brower Center in downtown Berkeley identified as the temporary site of the program. This Center is located on Oxford Street immediately opposite the western boundary of the campus. The budget has factored in a cost of \$46,080 in Y1 for room rental which is extended out through Y9 (adjusted for inflation I assume) which perhaps allows for the uncertainty regarding the renovation of Wellman Hall. This rental includes the use of the 72 seat Tamalpais Room within the Brower Center building for classroom space (half-day rental with a multi-day discount). Wellman 311 is currently occupied by the Master of Development Practice which will vacate the space in 2024.

The program has therefore identified high quality space immediately adjacent to campus. The only uncertainty of the timing of the seismic retrofit to Wellman Hall which most likely is out of the program's control. From their budget forecast, the rental of space in the Brower Center may be for some time. Once they return to Wellman Hall, then the approximate \$52,000 annual rental (Y 5 projection) will cease. The program has successfully identified temporary short-term space and long-term space.

6. What are the proposed uses of net revenues? How will they supplement [enhance] state-funded programs? Are there other ways that the program, if successful, will benefit the UC mission (e.g., filling a need not covered by state-supported programs)?

Details of the proposed uses of the net revenues are described in the Memorandum of Understanding on Revenue Sharing. Complete revenue, these being from tuition revenue, the net of fees and the return to aid offered to students, will be returned to the BRCNS to pay for direct program costs as listed in Appendix B – the budget spreadsheets. These include substantial items as graduate student teaching, ladder faculty seat buyouts, seat buyouts of existing elective courses, and any other payments to faculty for their participation in the capstone evaluation of students.

The net revenue will be shared amongst participating departments based on their relative contributions to the course core calculated over the entire ten-year period. Additional funds

(assuming these are from net revenue and not from another source) will be allocated to each department to reimburse them for faculty representation in the Executive Committee, for Departmental Chair reimbursement for time spent assigning instructors, and to the time spent by administrators coordinating between the respective Chairs and program staff. These contributions are estimated at \$10,000/y for the Department of Environmental Science, Policy & Management, and \$5,000 each for the Departments of Energy & Resources Group and the Department of Agricultural & Resource Economics. It is not stated how these funds will be used within these departments.

What is not mentioned is the proposed repayment of loans received from the Rausser College Dean's discretionary funds at a rate of least 25% of net revenue (see (12) below).

7. How are any potential negative impacts on state-funded programs and the research mission of the UC mitigated?

There are eight ladder-rank faculty in the program. Each will shift one course of their annual teaching load to the MCS program assuming they teach the MCS core course as a regular load. The undergraduate classes that these faculty would withdraw from would be taught by lecturers using buyout funds. Reference is made that the college is well below the campus Student Credit Hours average of lecturer-instructed courses and that two of the three departments make "very little use of lecturers" while, in the third, the use of lecturers "has been declining", however no quantitative data are supplied. The option of faculty teaching MCS courses remains. Failing this, there will be a decrease in contact hours of participating faculty with existing students in state-supported programs which was a concern of UCPB with the initial submission.

Core staff will be hired using funds generated by the program and so there is not expected to be an impact on staff support of state-funded programs, nor will class size of existing state-supported courses be affected. I suspect there may be some impact on staffing in Year 0 as hiring of new staff is underway and the Dean's Office is compensating existing staff for undertaking the work necessary for the start-up of the program.

The instructional topics of the MCS are closely aligned to the research programs of the teaching faculty.

*8. Describe disposition and compensation of **faculty** serving the program. What is the proposed ratio of UC Senate faculty to non-UC adjunct faculty? For the former category, differentiate between ladder rank and P/LSOE. How will UC Senate faculty be compensated? On-load (i.e., course buyout), overload, or some combination thereof?*

Teaching of faculty in the MCS will be classified as satisfying the normal teaching load when taught as a buyout. Lecturers or other instructors will be hired within these departments to ensure undergraduates and can fulfill their course requirements and so stay on schedule for graduation. The MCS program will provide funds to the faculty member's department in cases of a buyout. If agreement is reached to teach an MCS course as overload, then the MCS program will provide additional salary to the faculty member set at a rate per \$30,000 per 2 u.

Two non-senate faculty will teach the capstone and 'Changemaking' courses with compensation determined by campus policy.

9. Describe how the program will ensure accessibility and encourage diversity. Note: these concerns may be addressed through return-to-aid used for need-based fellowships, although programs may address accessibility and diversity in a variety of ways and UCPB does not set a standard return-to-aid percentage.

One faculty member will serve as the program Faculty Equity Advisor who will participate in the annual review of the program's DEI efforts and campus evaluations of it. They will be identifying course subjects in which equity is expected to play a significant role and may seek interactions with other units at campus and across UC. The program is committed to a return-to-Aid percentage of 10-15% each year which the college plans to supplement through providing more scholarships which will directly address equity issues through student recruitment and training.

10. Describe the market analysis used to justify demand and price point for the proposed program. Will the program compete with others in the system? What are projected percentages of California resident, domestic non-resident, and international students in the program?

Three companies performed market analysis. **NAV-B.** UC Berkeley has a considerable market advantage of the market (49.3% overall, with Stanford second (33.6%), N=655, approximately half from the alumni lists, half from GRE Search Service with format, duration, institution, and intern placement being the most influencing factors for a climate-focused program. Preference was for campus-based programs, and those that were less than 2 y in length. Programs with internships were favored. **Maguire.** Master's programs in sustainability/environment are increasing with class sizes growing to match demand. Stanford and Yale are the major competitors. Most of the competitors offer 5 y Bachelors/Masters degree with a capstone, in-person tuition, and all are actively supporting the students finding internships with Yale requiring it. Four semesters were favored with in-person tuition, a range of electives and diverse topics favored. Range of tuition is from approx. \$69,630 (UCSB) to approx. \$95,112 (Michigan) with an average of approx. \$82,000. Other competitors are Duke (5th year MS to undergraduates), Penn, UCSB (offers professional development areas), Johns Hopkins, Northern Arizona U (offers in-state tuition to students in 14 participating states), and Northwestern (a 10 month program focused on professionally experienced students. The employment prospects for future UC Berkeley students in Master's level occupations is projected to grow by almost 17% from 2016 to 2026; environmental scientists and specialists, including health and climate change analysts are project to grow by 7.8% with a median (2020) salary of \$73,230, and environmental scientists and specialists (including Health) and sustainability specialists are occupation with a higher percentage of their workforce with Master's degrees (31.6% and 21.5% respectively). **Noodle.** Their analysis suggested a lag in growth of these field perhaps due to a lack of trained professionals.

The two surveys listed only two other UC campuses offering comparable courses, these being UCSB and UCSD. Table 4 of the resubmission recognizes the Master of Environmental Science and Management from UCSB and the Master of Advanced Studies in Climate Science and Policy from UCSD. It also lists the Master of Environmental Policy and Management from UC Davis, the Master of Science of Environmental Systems from UC Merced, and the Master of Science in Environmental Sciences from UC Riverside. The focus of the proposed Berkeley program on climate change is claimed as a feature that distinguishes it from the four programs at UCSB, UC Davis, UC Merced and UC Riverside which are described as being broadly-based programs. The UCSD program based

at the Scripps Institution of Oceanography is seen as the closest UC competitor but a defining difference with the proposed program at UCB is a focus of the later on specific skills such as carbon accounting, lifecycle analysis, climate change risk analysis and changemaking.

The description of the Scripps Master of Advanced Studies in Climate Science and Policy program overview is taken from their homepage for easy reference here:

“The Master of Advanced Studies in Climate Science and Policy (MAS CSP) Program is a one-year masters degree that fills an increasing global need for scientific, policy, and communication professionals to take action in response to the threats posed by climate change and to help effectuate the ongoing transition to a low carbon society.

Taking an interdisciplinary approach, the MAS CSP Program focuses on the physical science and policy dimensions of climate change. Whether your interests lie in public policy, education, environmental justice, journalism, finance, insurance, international development, research science, or another climate-related discipline, this is the foundational program to promote or advance your career. Students in the MAS CSP Program explore climate change from an interdisciplinary perspective, learning about the interconnected scientific, policy and political dimensions of climate change. Key areas of focus in the MAS CSP Program include the physical science basis of climate change, the impacts of ongoing climate change on human and ecological systems, existing climate politics and governance, and how to communicate climate information to key audiences.

Our graduates possess a broad understanding of the potential solutions to help government and industry achieve their energy reduction and climate mitigation and adaptation targets. Moreover, our alumni are poised to lead the societal transformation required to navigate the ongoing climate challenge.” (Their boldtype).

The Scripps course does host an annual capstone symposium. While it is difficult to assess different programs from such brief summaries, most likely there is sufficient differences between the programs for both to be complementary within the system.

Within the two of the three hosting departments offering undergraduate degrees, the average percentage of domestic students is 86% and international students 14%. All three departments offer graduate programs with the respective percentages being 82% and 18%.

11. Describe relevant consultation and assessment from lower levels of review, external assessments of the proposal, and the like.

This resubmission has been reviewed and approved by the UC Berkeley Graduate Council and the Berkeley Division of the Academic Senate. The academic leaders of this re-submission have recommended six UC faculty and six non-UC faculty as potential reviewers to the CCGA in Appendix J.

The initial submission was reviewed and approved by the Berkeley Division of the Academic Senate, but questioned and returned by the Planning and Budget Committee and by the UC Senate Coordinating Committee on Graduate Affairs (CCGA) and by external reviewers. The faculty leadership of this proposal had follow-up conversations with the preceding and current chairs of CCGA before revising and re-submitting this proposal.

12. Any other planning and budget concerns?

Yes. The recommendation of UCPB from the 2022 review of the initial version of this proposal recommended an increase in charges across the projected life of the program. The faculty and administrative leaders of the revised proposal recognize the uncertainties of inflation rates since 2021 but have elected to leave the program charge unchanged from original submission, allowing for a 5% increase due to inflation each year. They propose to increase financial contributions to the program through fund-raising for financial aid to provide some 30% of revenue.

Perhaps relevant to their decision *not* to increase their charges is the financial modeling presented on pages 4-6 of Appendix A in which three models were tested, differing in fees, % student market capture, and estimated enrollments. The models assumed that % market capture and enrollments declined as fees increased. The three program fee costs were \$55K, \$65K and \$75K. The models suggest that the cumulative net revenue would exceed program net revenue in year 4 for the lower two fees, but to a greater degree for the \$65,000 fee. However, for the \$75,000 fee the cumulative net revenue would remain under the program net revenue even in year 6 with deficits accumulating through to year 5.

The program is expected to break even in year 4. A question was also raised regarding how the program would manage its deficit during the initial years of establishment. On page 57 of the revised proposal the strategy for start-up and loan repayment is outlined. A \$500,000 grant from Dean's office discretionary funds (non-state) will be used to cover program marketing, a career service specialist, faculty directors and recruitment. Salaries and benefits of existing Dean's Office staff at approximately \$220,000 will also be provided in Year 0.

In addition, a loan will be granted to the three departments to cover cash flow needs during the start-up period. The size of this loan is not mentioned but it will be repaid once the MCS program achieves a positive annual net at a minimum of 25% of net revenue.

I can find no estimate of size of this loan, nor details of the repayment schedule in Appendix B: Budget spreadsheet. The relative size of this loan may be small but, nonetheless, it is a repayment which appears to be uncaptured in the spreadsheets. Perhaps minor, but it impacts the fiscal health of the program.

13. Any academic-quality or related concerns to flag for CCGA?

This is the second review of this proposal. The first version of this proposal, submitted in March 2022, met with approval by the UC Berkeley Senate but was rejected by the system-wide Coordinating Committee on Graduate Affairs while our own committee requested a modification of the program charge and the impact of the program on the amount of contact that MCS faculty will have with students in state-supported programs. From a financial perspective, an external reviewer requested more detail about the UC Berkeley IDC rate.

The CCGA's concerns were with academic rigor, the capstone course, and job placement. The revised proposal addressed the concern of academic rigor by now offering students three tracks in 1. Climate strategy and management, 2. Climate policy and politics, and 3. A self-designed track. The purpose of the tracks is to provide the students with in-depth knowledge and skills tailored to specific

job markets with each student selecting track at the start of the program. The structure of each track was fashioned by the key areas of demand in the climate-solutions based job market in business, government, and non-government organizations.

The capstone has been extended from a single semester to both semesters with 2 u and 3 u of credit being awarded in successive semesters. The course requires completion of an applied exercise that is facilitated by a “Climate Solutions Accelerator”, run by a senior lecturer with experience with relevant organizations, that enables interactions between students and relevant business or non-/government organizations. This network is currently being developed. The students will take one of three paths in their capstone project. One will be to take their own idea to a partner organization. The second will be partner organizations soliciting a call for proposals from a team of students. The third will be faculty-initiated projects done in collaboration with a partner. The fall semester component of the capstone will also incorporate project management training and related professional skills. Capstone projects will be selected in early August.

The accompanying job market data has been expanded with information about placements and salaries and offers support for the successful career placement of Master’s graduates in this area.

CCGA’s three concerns appear to have been addressed from our perspective.

14. Are there specific areas of concern that the mandated review after the third year of operation ought to capture?

It’s financial status, accuracy of the modeling and explanations for any significant deviations enrollment numbers, success of the Capstone, graduate placements from years 1 and 2, and status of the seismic retrofit of Wellman Hall.

Conclusions and recommendation:

(Pending committee review.)