Meeting of the Academic Senate
Tuesday, April 12, 2022
3:10 to 5:00 pm
https://calpoly.zoom.us/j/84170663453

I. Minutes: March 8, 2022 Minutes (pp. 2-3)

II. Communication(s) and Announcement(s):

III. Reports:
A. Academic Senate Chair:
B. President’s Office:
C. Provost:
D. Vice President for Student Affairs:
E. Statewide Senate:
F. CFA:
G. ASI:

IV. Special Reports:
A. [TIME CERTAIN 3:45 P.M.] Faculty Affairs Update: Ken Brown, Academic Senate Faculty Affairs Committee Chair (pp. 5-16)
B. Library Annual WRITTEN Update: Adriana Popescu, Dean of the Library (p. 17-21)

V. Consent Agenda:
A. Department Name Change Approval for Plant Sciences Department (PLSC) (pp. 22-29)
B. Agenda items approved by consent (pp. 30-33)

VI. Business Items:
A. Resolution on UFPP 11.4.2 Departmental Role in the Selection Process for Chairs and Heads: Ken Brown, Academic Senate Faculty Affairs Committee Chair, first reading (pp. 34-41)
B. Resolution on Scheduling of Online Assessments: John Hagen, Academic Senate Instruction Committee Chair, first reading (pp. 42-44)
C. Resolution on New Degree Program for Master of Science in Statistics: Andrew Schaffner, Statistics Department Chair, first reading (pp. 45-98)
D. Resolution on AB 928 and Common GE Pathway: Gary Laver, Academic Senate General Education Governance Board Chair, first reading (pp. 99-101)

VII. Discussion Item(s):

VIII. Adjournment:
Meeting of the Academic Senate  
Tuesday, March 8, 2022

I. Minutes: M/S/P to approve the minutes from February 8, 2022 and February 22, 2022.

II. Communication(s) and Announcement(s): The original agenda link did not include the consent agenda, but it can be found here: https://content-calpoly-edu.s3.amazonaws.com/academicsenate/1/images/sa030822.pdf

III. Reports:
A. Academic Senate Chair: Thomas Gutierrez, Academic Senate Chair, reported that the ad hoc semester conversion committee, chaired by Dustin Stegner, meets regularly with representatives from most colleges (the report incorrectly indicated all colleges were represented, but we were not able to find a representative from CAED).
B. President’s Office: Jessica Darin, President’s Office representative, reviewed feedback during CBF and approved proposed increase that will begin with the class of 2022.
C. Provost: Provost Cynthia Jackson-Elmoore shared updates on the approval of the semester conversion extension from fall 2025 to fall 2026. In addition, she communicated that Dr. Bob Crocket from BMED is assuming the role of administrator in charge of R-EDGE as of May 28, 2022.
D. Vice President for Student Affairs: none
E. Statewide Senate: Gary Laver, Statewide Senate representative, shared that the ASCSU is holding a webinar in hopes of disentangling AB928, a law requiring a single GE pathway for students wishing to transfer from community college to CSU campuses.
F. CFA: Lewis Call, CFA representative, reported that the new contract is fully ratified and has officially gone into effect. He highlighted a few significant changes regarding the new grievance policy, faculty’s right to submit written rebuttals to biased student evaluations, and the postponed implementation of faculty raises.
G. ASI: Suha Hussain, ASI representative, shared that the ASI board of directors reviewed and discussed the CBF resolution. The resolution passed, opposing the CBF increase, with a majority vote.

IV. Consent Agenda:
A. Agenda items have been approved by consent can be found here: https://content-calpoly-edu.s3.amazonaws.com/academicsenate/1/images/sa030822.pdf

V. Business Items:
A. Election of 2022-2023 Academic Senate Officers: Thomas Gutierrez, Academic Senate Chair, petitioned to be reelected as Academic Senate Chair. Thomas Gutierrez was elected by acclamation Academic Senate Chair for the next academic year. Jerusha Greenwood, Vice Academic Senate Chair, petitioned to be reelected as Vice Academic Senate Chair. Jerusha Greenwood was elected by acclamation Vice Academic Senate Chair for the next academic year.
B. Resolution on UFPP 11.4.1 Department Leadership: Ken Brown, Academic Senate Faculty Affairs Committee Chair introduced a resolution on UFPP 11.4.1 Department Leadership in first reading. This resolution creates a set of policy that includes the definitions of the department head and department chair at Cal Poly, indicates what their core responsibilities are, indicates the scope of appointments, and places them in the personnel policies document. M/S/P to move resolution to second reading. M/S/P to adopt Resolution on UFPP 11.4.1 Department Leadership.
C. Resolution on UFPP 11.4.3 Changes in Department Leadership Models: Ken Brown, Academic Senate Faculty Affairs Committee Chair, introduced a resolution on UFPP 11.4.3 Changes in Department Leadership Models in
first reading. This resolution identifies the implementation of the dean’s discretion over the type of department chair or head appointments appropriate for each college, changes in department leadership models to involve a consultative process with department faculty and staff, and college specification in their personnel policy documents of the departmental leadership change. M/S/P to move resolution to second reading. M/S/P to adopt Resolution on UFPP 11.4.3 Changes in Department Leadership Models.

D. Resolution on Educational Objectives and Criteria for Study Abroad Courses in Languages Other than English: Gary Laver, Academic Senate General Education Governance Board Chair, introduced the Resolution on Education Objectives and Criteria for Study Abroad Courses in Languages Other than English in first reading. This resolution regards the GE C2 guidelines for study abroad courses in languages other than English. The proposed modifications will make guidelines for courses taught abroad congruent with courses taught on campus. M/S/P to move resolution to second reading. M/S/P to adopt the Resolution on Educational Objectives and Criteria for Study Abroad Courses in Languages Other than English.

VI. Discussion Item(s): None

VII. Adjournment: Meeting adjourned at 3:57 pm.

Minutes submitted by:

Shefali Mistry
University response rates 2020-2021
   Fall 2020  38%
   Winter 2021 38%
   Spring 2021  37%

College and department response rates in attached charts

Background data and information about online student evaluations

Pilot commenced Spring 2015–Spring 2016
   • Response rates in pilot:
     Fall 2015  64%
     Winter 2016 59%
     Spring 2016  51%

Procedure for university-wide rollout 2016-2017
   • Two one-week evaluation periods
     o Normal: Sunday–Friday of last week of instruction
     o Early: Sunday–Friday of penultimate week of instruction
       ▪ Only Music made use of early evaluations, experiencing dismal response rates
   • Students notified by email
     o Prior to evaluation period
     o Daily reminders for evaluations not yet completed
       ▪ One email per class each day until evaluation completed
   • Response rates 2016-2017:
     Fall 2016  66%
     Winter 2017 61%
     Spring 2017  55%

Procedural changes for 2017-2018
   • Students
     o Portal shows links for class evaluations
     o Email reminders at start of evaluation and Wed, Thur, Fri
   • Instructors
     o Email about response rates
     o Portal links for their evaluated classes
     o Portal reports response rates
Response Rates 2017-2018
- Fall 2017: 59%
- Winter 2018: 58%
- Spring 2018: 54%

Procedural changes for 2018-2019
- Faculty
  - No more response rate notification emails
  - Live response rate monitoring through the portlet
  - Access to portlet on the Monday before the evaluation period
  - Email notification that courses queued for evaluation are visible on the portlet
  - Faculty encouraged to ensure all courses that meet the evaluation criteria are queued.

Response Rates 2018-2019
- Fall 2018: 55%
- Winter 2019: 57%
- Spring 2019: 51%

Procedure for 2019-2020
- Same as 2018-2019
- Response rates 2019-2020
  - Fall 2019: 52%
  - Winter 2020: 53% (completed prior to shift to virtual final exams)
  - Spring 2020: 35% (conducted under virtual distance learning due to COVID-19)

Procedure for 2020-2021
- Same as 2018-2020
  - Opens evening of Tue 11/17
  - Runs through Tue 11/24
- Campus operated almost entirely online due to COVID-19
Winter 2021 CAED Response Rates

- ARCE: 41.67%
- ARCH: 37.94%
- CM: 43.73%
- CRP: 35.42%
- LA: 53.32%
- CAED Total: 40.75%

Spring 2021 CAED Response Rates

- ARCE: 38.29%
- ARCH: 38.95%
- CM: 40.95%
- CRP: 33.13%
- LA: 47.61%
- CAED Total: 39.47%
Spring 2021 CAFES Response Rates

Fall 2020 CENG Response Rates
Winter 2021 CENG Response Rates

Spring 2021 CENG Response Rates
Fall 2020 CLA Response Rates

Winter 2021 CLA Response Rates
Spring 2021 CLA Response Rates

Fall 2020 CSM Response Rates
**Fall 2020 OCOB Response Rates**

- BUSA: 36.36%
- BUSF: 43.64%
- BUSM: 38.06%
- BUSMK: 36.81%
- ECON: 33.03%
- GRAD: 42.16%
- IT2: 23.19%
- SBUS: 34.33%
- OCOB Total: 34.91%

**Winter 2021 OCOB Response Rates**

- BUSA: 36.99%
- BUSF: 37.56%
- BUSM: 38.69%
- BUSMK: 37.50%
- ECON: 25.16%
- GRAD: 43.83%
- IT2: 28.58%
- SBUS: 25.73%
- OCOB Total: 33.05%
Spring 2021 OCOB Response Rates

Response Rate by College
Fall 2020, Winter 2021 and Spring 2021
Please note AY 2020-2021 was an all-virtual year. There were no in-person consultation services or instruction.

For a more detailed look at the activities around the library, visit the digital, online version of The Robert E. Kennedy Library Annual Report.

### Reference & Consultation

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<th>Total Responses to Queries</th>
<th>Provided By</th>
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<tr>
<td>4,676 via chat, email, Zoom, and phone</td>
<td>Librarians, Specialists, Digital Projects Lab Peer Assistants</td>
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<tr>
<td>2,571</td>
<td>provided by LibRATS</td>
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<tr>
<td>1,490</td>
<td>provided by remote, live overnight chat providers</td>
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<td>615</td>
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### Library Instruction Sessions

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<th>Total Instruction Sessions</th>
<th>Hybrid (e.g. asynchronously video viewing followed by live, synchronous Zoom)</th>
<th>Synchronous Online (live Zoom)</th>
<th>Asynchronous Online (e.g. assigned tutorials, Canvas modules)</th>
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<tr>
<td>208 facilitated</td>
<td>115</td>
<td>77</td>
<td>16</td>
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<tr>
<td>115 hybrid</td>
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<td>77 synchronous online</td>
<td>16 asynchronous online</td>
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<td>77 synchronous online</td>
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<td>16 students reached</td>
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<td>16 asynchronous online</td>
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<tr>
<td>7,508 students reached</td>
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### Research Guides Usage

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<td>332</td>
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### Course Reserves

<table>
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<td>109,595</td>
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### Main Collection

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<th>Total eBook Usage</th>
<th>Total eJournal Article Downloads</th>
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<td>382,535</td>
<td>781,321</td>
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Digital Commons @ Cal Poly

www.digitalcommons.calpoly.edu

Digital Commons @ Cal Poly is the online digital archive that shares and preserves Cal Poly research, scholarship, and campus publications.

READERSHIP DISTRIBUTION MAP

New publications hosted on Digital Commons @ Cal Poly

Graduate Series: Architectural Engineering: Graduate Reports
Industrial and Manufacturing Engineering: Graduate Reports
Biomedical Engineering Graduate Reports and Projects

Journals: Journal of Threat Intelligence and Incident Response
Underground Anthology
Feminist Pedagogy

Series: Creative Works
Coming Soon: BEACoN Mentor Projects

1,083 works posted
2,226,516 total downloads
229 countries
Foundational Experiences

General Education Instruction workshops were led by Kaila Busser, Mercedes Rutherford-Patten, and Russell White, with co-teaching assistant from LibRAT Peer instructors.

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**Fall Quarter 2020**

- **23** virtual synchronous workshops via Zoom
- **18** Research Workshop
- **2** Introduction to Data Visualization Workshop
- **3** Finding and Using Images Workshop

**Winter Quarter 2021**

- **21** virtual synchronous workshops via Zoom
- **18** Research Workshop
- **1** Introduction to Data Visualization Workshop
- **2** Finding and Using Images Workshop

**Spring Quarter 2021**

- **24** virtual synchronous workshops via Zoom
- **17** Research Workshop
- **5** Introduction to Data Visualization Workshop
- **2** Finding and Using Images Workshop

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**Total**

- **55** total classes attended workshops
- **1741** total students reached
- **54** total LibRATs co-taught
In partnership with the Office of University Diversity & Inclusion (OUDI), Student Diversity and Belonging (SDaB), Student Affairs and the Office of the President — Kennedy Library created two installations highlighting the 2001 traveling exhibit ¡Viva La Causa! A Decade of Farm Labor on the Central Coast and related Kennedy Library archive “Central Coast Farm Labor Organizing Collection.” The primary installation is located in the first-floor elevator lobby of Kennedy Library. The second introductory installation is on view in the University Union hallway across from the MultiCultural Center. Both installations pay tribute to activist, feminist and labor leader Dolores Huerta to honor her lifelong work in service to California and Californians. In spring 2020, on the occasion of Huerta’s 90th birthday, the California State University Board of Trustees resolved that each of the 23 CSU campuses would pay tribute to Huerta’s legacy for generations to come. Cal Poly honored Huerta through the installations of the ¡Viva La Causa! exhibit in the Library and University Union as well as establishing an annual service award. The projects were unveiled at last year’s 2021 President’s Diversity Awards ceremony.

Kennedy Library’s Creative Works’ student assistant and graduating senior Solena Fordham Aguilar (Art and Design, ’21) designed the public installations under the guidance of curator Catherine Trujillo.

The exhibit pays tribute to the work of the United Farm Workers and social justice leaders like Dolores Huerta and documents the voices and contributions of the farmworker community on the Central Coast. This story is primarily shared through the lens of photographer Manuel Echavarria and demonstrates how farmworkers and organizers played a crucial role in our local farm labor movement and whose stories remain largely untold. The ¡Viva La Causa! exhibit and the historical archive together capture the movement and the voices of many who collectively organized in support of this labor movement by which farmworkers were able to fight and demand better wages and working conditions for generations of farmworkers to follow.
In AY 2020-2021, Special Collections and Archives supported archives-based research projects, facilitated scholarly publications, and accepted two significant donations.

**The Janice and Roger Verity Californiana Collection**

Special Collections and Archives has acquired over 2,000 books and periodicals and over 3,000 maps, atlases, and pictorial ephemera published on the development and promotion of California before and after statehood in 1850. This collection will provide opportunities for researchers and Cal Poly courses to critically analyze the ways California has been mapped, depicted, promoted, and received in print.

**The Kenneth Schwartz Papers**

This collection contains records tracing the professional life of the late San Luis Obispo architect, CAED professor, and City of San Luis Obispo mayor and councilman. It includes architecture plans, scrapbooks, photographs, reports, and files on such civic and municipal projects as Mission Plaza and Whale Rock Reservoir.
The Horticulture and Crop Science Department (HCS) Department is proposing a name change to Plant Sciences (PLSC) Department. Per the procedure outlined on the Academic Programs & Planning policy page (informed by AS-328-89), please see the attached pdf which contains the following:

1. Email recommendation/endorsement from the CAFES dean, page 2
2. Original proposal, pages 3-6
3. Email recommendation/endorsement from the Academic Senate College Caucus, page 7
4. Email recommendation/endorsement from BIO department chair, page 8
MEMORANDUM

March 22, 2022

TO: Cynthia Jackson-Elmoore, Provost
FROM: Andrew Thulin, Dean, College of Agriculture, Food and Environmental Sciences

SUBJECT: Proposal Support: Department Name Change

I have received a memo and proposal from Dr. Scott Steinmaus, department head, requesting to change the Horticulture and Crop Science Department name to Plant Sciences. The CAFES Caucus and the CAFES Management Team (Council) have both provided their unanimous support for the proposal. These documents and an indication of support from the Biological Sciences Department are attached.

The Horticulture and Crop Science Department has embarked upon careful consideration of the proposed name change with input from industry, their advisory council, and a market analysis by Hanover Research. Plant Sciences better reflects the interests of prospective students, programs at competitor institutions, and the department’s academic programs. Therefore, I fully support the proposal.

The bottom of this memo has a location for you to indicate by signature and date if you approve the proposal following a recommendation from your Council. The Academic Senate plans to have the consent agenda available on March 29 for the Senators with any objections provided by EOD on April 5.

Thank you in advance for your support of this important evolution of our program.
Memorandum

To: Andy Thulin, CAFES Dean
From: Scott Steinmaus Dept Head HCS (ssteinma@calpoly.edu)
(on behalf of the tenured and tenure track faculty)

Date: March 12, 2022
Files: Cal_Poly_letterhead MEMO Plant Sciences name change.docx; Department Name Change Proposal Plant Sciences.docx
Copies: Jim Prince, CAFES Associate Dean; Cath Kleier, CAFES Associate Dean; Angela Standifer, Academic Programs and Planning, (astandif@calpoly.edu); Bruno Giberti, Academic Programs and Planning (bgiberti@calpoly.edu).

Subject: PROPOSAL TO CHANGE DEPARTMENT NAME

Dear Dean Thulin,

The purpose of this memorandum is to request your approval to change the Department name from “Horticulture and Crop Sciences” to “Plant Sciences”. As you are aware we have begun the formal process of changing the Program name from “Agricultural and Environmental Plant Sciences” to “Plant Sciences”. Full details of our justification for a Department name change can be found in the attached file, “Name Change Proposal Plant Sciences.docx”. In it you will find a similar justification for changing the Department name as we put forward for the Program name change. In summary, the change is justified by extensive research and inquiry including a market analysis that assessed prospective student interests, predominant employment opportunities for our graduates, the simplicity and consistency of a common name for both the Department and the Program, self-reflection of our purpose and mission during our Program Review, and a survey of peer and aspirational Departments around the country with a similar mission and vision whose names are also “Plant Sciences”.

You will receive recommendations on the request from the College Council and the Academic Senate college causus. Then you will add your own recommendations, and send the request with recommendations to the Provost/Executive Vice President for Academic Affairs (academicaffairs@calpoly.edu) with copies to Ms. Standifer (astandif@calpoly.edu) and Dr. Giberti (bgiberti@calpoly.edu). Please let me know if you require additional information or have any questions. 
The Horticulture and Crop Science Department (HCS) was formed in January 2002 as a result of the merger of two long-standing units, the Crop Science and the Environmental Horticultural Science Departments. At that time, there were four majors: Crop Science, Environmental Horticulture Science, Fruit Science, and Plant Protection Science. These were reconstructed into a single major, Agricultural and Environmental Plant Sciences (AEPS), following an intensive self-study and marketing survey in 2008. However, the Department named remained Horticulture and Crop Science. This has been a source of confusion and distraction for prospective students, as well as on- and off-campus stakeholders. We have initiated the process for a Program name change from “Agricultural and Environmental Plant Sciences” to “Plant Sciences” following extensive research, reflection, and outreach based on the focus of our curriculum and the trends within the agricultural and horticultural industries. We propose a common name for both the Program degree and the Department to add consistency and to bring our Department more in line with the trends occurring in similar programs and departments around the country. The name, Plant Sciences, is more reflective of how our students are taught. Further, the name is more attractive and understandable to prospective students, their parents, future employers of our graduates, and outside industry supporters.

The justification for a program name change is based on how we educate students. Our curriculum is designed to train Plant Scientists who use their education to make informed decisions regarding sustainable farming or horticultural practices that maximize plant production while minimizing economic, environmental and social impacts. They are “service” providers who are managers themselves or provide recommendations to top managers in the areas of plant breeding and physiology, soil and growth media fertility, and pest management. Their job duties require that they balance time outdoors or in controlled plant growth environments as well as indoors in a laboratory or office. The US Bureau of Labor Statistics (USBLS) does not have a single category of occupation that captures exactly the predominant occupations of our graduates. The occupations of our graduates lie between the categories, “Soil and Plant Scientists” and “Farmers, Ranchers and Other Agricultural Managers” (US Bureau of Labor Statistics 2019).

As the latest available US Bureau of Labor Statistics indicates for top-employing occupations for workers with an agricultural degree, we should be emphasizing the “science” component of the program as those occupations (e.g. Plant and Soil Sciences) have a projected 7% increase in demand for 2019-2029, and they require a Bachelor’s degree (see USBLS link cited above). On the other hand, some occupations described by the USBLS as “agriculture” (e.g. certain farm and ranch occupations) have a 6% decrease in demand projected for the same time period and only require a high school diploma. Students graduating from our program need a Bachelor’s degree that will prepare them for a career specifically in the formal plant sciences as decision-makers, leaders and innovators, not a career in the general agricultural realm that only requires a high school diploma. Furthermore, during student recruiting sessions with high school students across the state, the single most common question from those students was whether they needed an agricultural background to fit into our program. Changing the name of our Program and Department will help us to broaden our recruitment of applicants by clarifying that a background in agriculture is not required for students to be successful in our degree program and their careers.
The search term “plant science” has been shown to be a more common search term (keyword) than “agronomy” or “agricultural science” in a recent assessment performed by Hanover Research Associates (Hanover Report 2021). We have seriously considered Hanover’s highest ranked search term “environmental science” with a proposed department and program name such as, “environmental plant science”. This term puts a primary focus on natural ecosystems, and although we do cover some topics in these systems, it is not our primary focus. For example, habitat restoration or wildland conservation is covered as it pertains to the agricultural and natural interface and the quantification of ecosystems services now available to growers (https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/emkts/?cid=nrcseprd1396024). However, the term, “environmental plant sciences” alone would be confusing at best and misleading at worst, because it does not capture our agricultural and horticultural emphases. The name “Plant Biology” or “Botany” most often refers to programs that are focused on more basic plant research such as molecular biology, anatomy, taxonomy, evolution, and phylogeny. Even though we also include basic research in our curriculum, the terms “biology” and “botany” are misleading because they do not capture the more “applied” aspects of how we train our students.

The Hanover report confirms, for the most part, the trends indicated by the data from the USBLS. Occupations our graduates obtain are “services-based” in nature and provide expert recommendations to those directly growing food and ornamental plants. For example, our graduates are frequently employed as Pest Control Advisors and Certified Crop Advisors among other “services-based” occupations (see Hanover Report link cited above). The occupations specify an educational level that most frequently requires a Bachelor’s degree, as indicated in the parentheses next to each education level. The Hanover Report found that many programs that teach a similar curriculum from around the country are named or contain the name, “Plant Sciences”. Our own assessment of all college-level programs in the country that teach a similar curriculum to ours found that 56% of those programs had the term “Plant Sciences” in their name. Key institutions we consider “peer” institutions, whose program names are or include the name “Plant Sciences,” include Cal Poly Pomona, CSU Chico, and CSU Fresno (US University Plant Science names). Universities whose programs we might consider “aspirational” that include “Plant Sciences” in their name include Cornell University, UC Davis, UC Santa Cruz, and Purdue University.
To: Andrew Thulin, Dean  

From: Bill Hendricks, CAFES College Council (Management Team)  

Subject: Horticulture and Crop Science Department Name Change Request  

Date: March 21, 2022  

The CAFES College Council (Management Team) has discussed, reviewed, and voted on the proposed Horticulture and Crop Science name change to Plant Sciences. The Council unanimously supports the proposal and applauds the department faculty and staff for their willingness to take this important step in their progression as an academic unit at Cal Poly.
Per your request, I sent an email (below) to the CAFES caucus and can now report that the caucus has expressed unanimous support for the department name change.

Lauren

Dr. Lauren Garner
Professor
CAFES Caucus Chair
Horticulture and Crop Science Department
Cal Poly State University
San Luis Obispo, CA 93407
(she, her, hers)
To: Scott Steinmaus Dept Head HCS
From: Matt Ritter, Biological Sciences
Date: March 18, 2022
File:
Copies: Andy Thulin, Dean CAFES
Bill Hendricks, Assoc. Dean CAFES
Angela Standifer, Academic Programs and Planning
Bruno Giberti, Academic Programs and Planning
Subject: DEPARTMENT NAME CHANGE

The Biological Sciences Department has received and reviewed the proposal for the Horticulture and Crop Science (HCS) Department to change their name to Plant Sciences (PLSC). I sent this to the botanists and other members of the department. I also had a discussion with Dean Wendt (Dean, COSAM) about it. From these discussions, it is clear that the Biology Department doesn't have a problem with this name change. We wish you the best of luck with this and look forward to continued collaboration.
CATALOG/COURSE REVIEW: Following the practice implemented in previous years, summaries of all course or catalog proposals sent by the Academic Senate Curriculum Committee to the Senate for consideration are posted on the web. Every senator is expected to review these proposals as well as the accompanying recommendations of the Curriculum Committee. The URL for the proposals appearing on the April 12, 2022 consent agenda is provided here:

http://registrar.calpoly.edu/status-proposals

[click second link on page entitled "Status of Proposals, Academic Year 2021-2022 Review (Academic Senate Consent Agenda)"

<table>
<thead>
<tr>
<th>Program Name or Course Number, Title</th>
<th>ASCC recommendation/ Other</th>
<th>Academic Senate</th>
<th>Provost</th>
<th>Term Effective</th>
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<tbody>
<tr>
<td>AGB 301 Food and Fiber Marketing (4), 4 lectures</td>
<td>Recommended for approval on 3/10/22.</td>
<td>On 4/12/22 consent agenda.</td>
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<td>AGB 304 Innovation and Entrepreneurship in Agriculture (4), 4 lectures</td>
<td>Recommended for approval on 3/10/22.</td>
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<td>AGB 308 Introduction to Agribusiness Finance (4), 4 lectures</td>
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<td>AGB 328 Decision Tools for Agribusiness (4), 3 lectures, 1 activity</td>
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<td>CM 413</td>
<td>Jobsite Construction Management</td>
<td>5</td>
<td>3 laboratories, 2 activities</td>
<td>3/10/22</td>
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<tr>
<td>CM 421</td>
<td>Emerging Trends</td>
<td>1-6</td>
<td>1-6 activities</td>
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<td>CM 422</td>
<td>Professional Preparation</td>
<td>1-6</td>
<td>1-6 activities</td>
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<tr>
<td>CM 425</td>
<td>Sustainability and Environment</td>
<td>1-6</td>
<td>1-6 activities</td>
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<tr>
<td>CM 450</td>
<td>Integrated Project, Design and Program Management</td>
<td>5</td>
<td>3 laboratories, 2 activities</td>
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<td>CRP 212</td>
<td>Introduction to Urban Planning</td>
<td>4</td>
<td>4 lectures</td>
<td>3/10/22</td>
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<tr>
<td>CRP 512</td>
<td>Introduction to Visual Communication and GIS</td>
<td>4</td>
<td>4 lectures, CR/NC</td>
<td>3/10/22</td>
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<tr>
<td>EDUC 523</td>
<td>Integrative Approaches to Curriculum</td>
<td>3</td>
<td>3 seminars, 1 activity</td>
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<tr>
<td>EDUC 531</td>
<td>Social Justice in Education: In &amp; Out of the Classroom</td>
<td>3</td>
<td>3 seminars, 1 activity</td>
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<tr>
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<td>Course Title</td>
<td>Recommended For Approval</td>
<td>Approval Date</td>
<td>Consent Agenda</td>
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<tr>
<td>EDUC 586</td>
<td>Introduction to Inquiry in Education (4), 3 seminars, 1 activity</td>
<td>Recommended for</td>
<td>On 4/12/22</td>
<td>consent agenda.</td>
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<td>EDUC 588</td>
<td>Education, Culture, and Learning (4), 4 seminars</td>
<td>Recommended for</td>
<td>On 4/12/22</td>
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<td>EDUC 589</td>
<td>Educational Research Methods (4), 3 seminars, 1 activity</td>
<td>Recommended for</td>
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<tr>
<td>ENGL 368</td>
<td>Theory and Practice of Peer-to-Peer Writing Instruction (4), 3 lectures, 1 activity</td>
<td>Recommended for</td>
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<td>ENGL 495</td>
<td>Topics in Applied Language Study (4), 4 seminars</td>
<td>Recommended for</td>
<td>On 4/12/22</td>
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<td>GRC 470</td>
<td>Selected Advanced Topics (1-4), 1-4 lectures</td>
<td>Recommended for</td>
<td>On 4/12/22</td>
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<td>ISLA 123</td>
<td>Introduction to Science, Technology &amp; Society (4), 4 lectures</td>
<td>Recommended for</td>
<td>On 4/12/22</td>
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<td>ISLA 305</td>
<td>Topics in Public Engagements with STEM (4), 4 lectures</td>
<td>Recommended for</td>
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<td>ISLA 355</td>
<td>Interdisciplinary Research Methods (4), 4 lectures</td>
<td>Recommended for</td>
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<td>ISLA 440</td>
<td>Advanced Interdisciplinary Studies Seminar (4), 4 lectures</td>
<td>Recommended for</td>
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<td>ME 211</td>
<td>Engineering Statics (3), 3 lectures</td>
<td>Recommended for</td>
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<td>PHIL 126</td>
<td>Logic and Argumentative Writing (4), 4 lectures</td>
<td>Recommended for</td>
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<td>approval on 3/10/22</td>
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Issues, concerns, and questions regarding this curriculum proposal should be directed to Greg Bohr, chair of the Academic Senate Curriculum Committee. If the concern is strong enough, any senator may request an item be removed from the Consent Agenda by April 5, 2022.

Pursuant to the curriculum appeals process adopted by the Academic Senate on May 4, 2010, "Items removed from the Consent Agenda will be placed on the Senate agenda as discussion items. The Senate Chair (or designee) will invite representatives from the concerned departments and the Academic Senate Curriculum Appeals Committee to be present at the meetings where pulled proposals will be discussed. Following discussion in the Senate, the Academic Senate Curriculum Appeals Committee will make the final decision to approve, disapprove, or return the items to committee (at any level) for further development. Items not removed from the Consent Agenda are considered approved on the meeting date of the Consent Agenda."
RESOLUTION ON UFPP 11.4.2 DEPARTMENTAL ROLE IN THE SELECTION PROCESS FOR CHAIRS AND HEADS

Impact on Existing Policy: Policy enacted by this resolution expresses already established policy based on AM-20171030 in UFPP Appendix

WHEREAS, Departmental voting procedures for recommendations to deans for internal department chairs and heads are limited by policy established in AM-20171030: Settlement on Lecturer Voting; and

WHEREAS, These policies on voting procedures are expressed in “Cal Poly Election Process for Internal Department Heads/Chairs” available on the Academic Personnel website; and

WHEREAS, The scope of the ways departments work with deans in the selection of departmental leadership should be clear to faculty and administration; and

WHEREAS, University Faculty Personnel Policies (UFPP) is the governing document for faculty personnel policies at Cal Poly with its appendix containing administrative memos, therefore be it

RESOLVED: The policy contained in UFPP 11.4.2 Departmental Role in the Selection Process for Chairs and Heads be placed in UFPP Academic Year 2022-23, and be it further

RESOLVED: “Cal Poly Election Process for Internal Department Heads/Chairs” be placed in UFPP Appendix, and be it further

RESOLVED: By Fall 2022 Colleges revise chapter 11 of their personnel policy documents as needed to conform with 11.4.2.
Proposed by: Academic Senate Faculty Affairs Committee
Date: [Sometime in 2022]

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1 (1) Describe how this resolution impacts existing policy on educational matters that affect the faculty. Examples include curricula, academic personnel policies, and academic standards.
(2) Indicate if this resolution supersedes or rescinds current resolutions.
(3) If there is no impact on existing policy, please indicate NONE.
EXECUTIVE SUMMARY: Academic Senate Faculty Affairs Committee (FAC) proposes placing into UFPP policies on the departmental role in the selection of chairs or heads, including existing policy on requirements for lecturer participation in any departmental voting procedures for such recommendations.

BACKGROUND: The Academic Senate Faculty Affairs Committee (FAC) is a standing Senate committee with representation from each college, the library and professional consultative services, Academic Affairs, and a student representative. FAC employs a streamlined process for approval of updates to University Faculty Personnel Policies (UFPP) including consultation with faculty affected by proposed changes and clear identification of which policy documents have been superseded by a proposed change. This process uses Academic Senate resolutions to establish new policy, revise existing policy, or substantially reformulate existing policy.

Summary

Administrative memos establishing university personnel policies reside in the UFPP Appendix, updated annually and available on the Academic Personnel website. In Fall 2017 a no-fault settlement to a grievance established university level policy on departmental voting procedures concerning the advising of deans in the appointments of internally selected chairs and heads. This policy required such elections to include 12.12 (3-year) faculty along with tenure-line faculty equivalently in such elections, and required other lecturers to have a separate advisory vote. An email to the faculty on this matter is in UFPP Appendix as AM-20171030: Settlement on Lecturer Voting. The document “Cal Poly Election Process for Internal Department Heads/Chairs” from February 8, 2018 expresses these requirements in policy form, and therefore should be placed in the UFPP Administrative Memos appendix as AM-20180208.

FAC proposes placing these existing policies into UFPP 11.4.2, along with other related policies concerning the departmental role in the selection of department chairs and heads. These other policies cover interim chair and head appointments, external searches for chairs and heads, and the role of faculty, including lecturers, in these procedures.

Impact on Existing Policy

The policies concerning voting procedures contained in UFPP 11.4.2 expresses current policy and practice at Cal Poly, and so there is no impact on existing policy by placing these policies in UFPP. College and library personnel policies must conform with the policies in 11.4.2 concerning interim chair and head appointments.

Faculty Affairs Committee
Implementation

College and department personnel policies concerning voting procedures for recommendations to the dean of internal chair/head candidates, and any other policies about departmental roles in selections of chairs and heads need to be updated to cite UFPP 11.4.2.

Consultation with Faculty Units

Consultation on this matter is concurrent with its placement on the Academic Senate Executive Committee and main meeting agendas.

What follows is the proposed text of 11.4.2 contained within the entirety of subchapter 11.4, and the administrative documents to be placed in UFPP Appendix.

The policies in 11.4.1 and 11.4.3 were recently passed by the Senate and await recognition by Pres. Armstrong. The proposed policies for 11.4.2 are best seen in the context of the whole of 11.4, and so we provide the entirety of that subchapter here. Two cross references to 11.4.2 are needed in 11.4.1. They are indicated in red underlined text.
11.4. Department Governance

11.4.1. Department Leadership

11.4.1.1. Policy in 11.4.1 established by AS-934-22.

11.4.1.2. Department chairs and heads are faculty who have administrative functions as part of their assignment. Department chairs and heads serve at the pleasure of the dean. Appointment of chairs and heads are made by the dean after consultation with the faculty, the provost, and the president. Consultation with the faculty includes the departmental selection processes contained in 11.4.2.

11.4.1.3. In exceptional cases MPP administrators may be appointed as chairs or heads on an interim basis. Also, department chairs and heads may be appointed to MPP positions on an interim basis. Interim appointments are covered further in 11.4.2.5.

11.4.1.4. Department chairs receive three-year renewable appointments. The definite term of chair appointments allows for a rotation of department leadership providing new leadership, fresh ideas, shorter term action plans, and the opportunity for more faculty to rotate through this leadership role.

11.4.1.5. Department heads receive appointments over an indefinite period, providing long-term continuity of leadership within their department and college.

11.4.1.6. Deans determine whether a department chair or department head appointment best suits the needs of the department and college.

11.4.1.7. Department chairs and heads may have academic year appointments, 12-month appointments. The nature of the appointment depends on the nature of their duties in the academic year and during summer, as determined by the dean, and are compensated accordingly.

11.4.1.8. The responsibilities and priorities of department chairs and heads will vary across colleges, departments, and individuals. Departments have varying models of how the responsibilities listed below will be accomplished. Although there are many items listed as the department chairs’ and heads’ responsibilities, some of these items may be delegated to other faculty and staff depending on the size of the department, organizational structure, support staff and the fraction of the department chair’s or head’s assignment that is dedicated to administrative duties. The college deans will help the department chairs and heads understand the prioritization of these duties in conjunction with the college and department’s vision and goals.

11.4.1.9. Academic Personnel maintains a document describing in detail the responsibilities and priorities of department chairs and heads, including the following areas of management and leadership for the department:

- Administration of department affairs
- Budget development and administration
- Department personnel
- Academic programs and curriculum
- Student engagement and success
- Advocacy for the department’s interests
- Community engagement and development activities

11.4.1.10. Department chairs and heads are subject to annual administrative review. This administrative review is wholly distinct from faculty evaluations that are
11.4.2. Departmental Role in the Selection Process for Chairs and Heads

11.4.2.1. Policy in 11.4.2 established by [cite Senate action] and AM-20171030, editorially revised in [AM-20180208].

11.4.2.2. Processes conducted within a department for selection of candidates for department chairs and heads are advisory, providing recommendations from the department faculty to the dean.

11.4.2.3. Any departmental practice for selecting candidates for department chairs or heads that involves voting among the department faculty shall incorporate the voting requirements outlined below. These voting requirements represent a minimum; departments may modify their department chair or head selection policies through the joint governance process approved by the dean.

11.4.2.3.1. All 12.12 (3-year) lecturers, including counselors and librarians, with an appointment in the academic quarter of the vote will be eligible to participate in the vote to recommend a department chair or head, with a full vote in their department voting process. Nothing in the balloting process will differentiate the three-year lecturers’ vote from tenured and tenure-track faculty votes for department chair or head recommendations.

11.4.2.3.2. All other lecturers will be granted an advisory vote. These advisory votes will be differentiated and summarized separately from the votes of the 12.12 (3-year) lecturers, tenured faculty, and tenure-track faculty.

11.4.2.3.3. Lecturers shall be notified regarding the department voting process in the same manner as all tenured and tenure-track faculty.

11.4.2.3.4. Lecturers eligible to cast a vote or an advisory vote shall be afforded the same opportunity as tenured and tenure-track faculty to attend regularly scheduled department meetings when department chair or head recommendation balloting is scheduled.

11.4.2.4. The results of all departmental voting shall be included in the department’s basis for recommendations of suitable candidates from the department to the dean.

11.4.2.5. An interim chair or head may be appointed from faculty within the department, from faculty not in the affected department, or from administrators. Interim chairs and heads are intended to serve until the dean makes a standard appointment of a department chair or head. The initial appointment of an interim chair or head shall be for a defined period of time, renewed as needed. For renewal of interim appointments extending beyond the academic year following the appointment, the dean shall solicit feedback from all department faculty, including all lecturers employed when the feedback is collected, for use in the dean’s decision about the chair or head appointment.

11.4.2.6. In exceptional cases the college may undergo a standard faculty recruitment to hire a department chair or head. In addition to all the normal aspects of a faculty recruitment, the chair of the search committee shall solicit feedback from all lecturers employed during the quarter of the search; these lecturers will be granted a full advisory vote, which will be presented to the faculty search committee. This advisory vote shall be included in the basis for
recommendations of suitable candidates from the search committee to the dean.

11.4.3. **Changes in Department Leadership Models**

11.4.3.1. Policy in 11.4.3 established by AS-935-22, superseding AS-801-15.

11.4.3.2. The dean has discretion over the type of department chair or head appointments appropriate for the college and department.

11.4.3.3. Changes in department leadership models shall involve a consultative process with department faculty and staff.

11.4.3.4. Colleges shall specify in their personnel policy documents the process for implementing such a change in departmental leadership.
In accordance with the Campus Administrative Manual (CAM), the appointment of a department head/chair is made by the dean after consultation with the faculty of the department, the Provost and the President. Chairs will be appointed for a fixed term and Head appointments will normally continue so long as they are satisfactory to the appointee and to the dean. The department head/chair serves at the pleasure of the dean.

Each department shall continue to follow their department practice to conduct internal Department Head/Chair elections while incorporating the voting requirements outlined below. Departments may update their policy through its respective joint governance process, but the new process must include the requirements listed below.

1. All 12.12 (3-year) lecturers, including counselors and librarians, with an appointment in the academic quarter of the vote will be eligible to participate in the vote to recommend a department chair, with a full vote in their department voting process. Nothing in the balloting process will differentiate the three-year lecturers’ vote from tenured and tenure-track faculty votes for department chair recommendations.

2. All other lecturers will be granted an advisory vote. These advisory votes will be differentiated and summarized separately from the votes of the 12.12 (3-year) lecturers, tenured faculty, and tenure-track faculty.

3. The above voting terms represent a minimum; departments may modify their department chair selection policies through the joint governance process.

4. Lecturers shall be notified regarding the department voting process in the same manner as all tenured and tenure-track faculty.

5. Lecturers eligible to cast a vote or an advisory vote shall be afforded the same opportunity as tenured and tenure-track faculty to attend regularly scheduled department meetings when department chair balloting is scheduled.

6. In the event the department conducts a search for a department chair that is not from the department, the faculty recruitment process as described in the Procedure for Recruiting Tenure-Track Faculty (https://content-calpoly-edu.s3.amazonaws.com/academic-personnel/1/PDF/ProcedureforRecruitingTenure-TrackFaculty_%283-2017%29.pdf) will be used. In this case, the chair of the search committee shall solicit feedback from all lecturers employed during the quarter of the search; these lecturers will be granted a full advisory vote, which will be presented to the faculty search committee.
WHEREAS, Online assessments of student learning are becoming more common; and

WHEREAS, Students have personal commitments scheduled outside of class time; and

WHEREAS, Students plan these commitments based on their class schedule; and

WHEREAS, Online assessments with narrow availability windows may conflict with student personal commitments; and

WHEREAS, These time conflicts may fall disproportionately and inequitably on students who need to work and those with dependent care obligations; and

WHEREAS, Online assessments that conflict with student personal commitments may harm student success; and

WHEREAS, The faculty of Cal Poly are dedicated to student success; and

WHEREAS, Online assessments with broad availability windows alleviate such conflicts; therefore be it

RESOLVED: The Academic Senate endorses the attached guidance for administering online assessments, and be it further

RESOLVED: The Academic Senate will ask the Registrar to circulate this guidance at the beginning of each academic year.

Proposed by the Academic Senate Instruction Committee
Date: March 29, 2022
Guidance for Scheduling of Online Assessments

Background
Prior to the rapid transition to online instruction necessitated by the COVID-19 pandemic, most exams, quizzes, and other types of assessment were administered in person during regularly scheduled class meetings; final exams and other final assessments were administered during the scheduled final exam time. During the campus closure starting in March of 2020, most assessments were conducted online. While Cal Poly has returned to predominantly in-person instruction for the 2021-22 academic year, it is likely that online assessments will continue to be used more frequently than in the pre-pandemic era.

Before Cal Poly offered online assessments, students were better able to plan their schedules so that other responsibilities would not conflict with their class assessments. Since then, online assessments have become more widespread, and some students in courses have been required to complete online assessments with a short assessment availability window, outside of the regularly scheduled class time. Some classes scheduled for asynchronous online delivery have required students to take assessments synchronously at a specific date and time within a short assessment availability window. In some instances, the assessment availability window has been as short as 30 – 60 minutes. These practices have created conflicts for students required to complete an assessment at the same time that they had other scheduled obligations such as a scheduled class meeting for another course, employment, family care responsibilities, or a school-related event. This could compromise student success if students must choose between taking an online assessment, or missing another class, or having to take time off work.

Faculty can avoid creating these conflicts by adhering to the following guidance.

Guidance

Availability Window Definition
For the purposes of this document, the assessment availability window is the time during which a student can choose to complete an exam, quiz, or other assessment. This is not the same as the time limit for the assessment. For instance, an exam with a 90-minute time limit to complete, could have an assessment availability window from Monday at 6 AM until Tuesday at 6 PM. The student could start the exam anytime in the 36-hour assessment availability window but would have to finish within 90 minutes of starting the exam.

During the Instructional Period (Not including Finals Week)
1. For classes with a scheduled meeting time, assessments administered online should be offered during the regularly scheduled class meeting time or have an assessment availability window of at least 24 hours; assessment availability windows can include weekend days, but at least 24 hours of the window should be on a weekday.
2. For classes without a scheduled meeting time, assessments administered online should have an assessment availability window of at least 24 hours; assessment availability windows can include weekend days, but at least 24 hours of the
window should be on a weekday.
3. Faculty are strongly encouraged to set the assessment availability window for online assessments to at least 36 hours; at least 24 of those hours should be on a weekday.

During the Last Week of Classes for lab courses, activity courses, and 1-unit lecture courses
1. For classes with a scheduled meeting time, final assessments administered online should occur during the scheduled class meeting time or have an assessment availability window of at least 48 hours. The day and time of the final assessment or the assessment availability window for the final assessments should be included in the syllabus on the first day of class.
2. For classes without a scheduled meeting time, final assessments administered online should have an assessment availability window of at least 48 hours and the assessment availability window for the final assessment should be included in the syllabus on the first day of class.
3. Faculty are strongly encouraged to set the assessment availability window for online final assessments to 72 hours or more.

During Finals Week for lecture courses of two or more units
1. For classes with a scheduled meeting time, final assessments administered online should be offered during the time posted in the final exam schedule or have an assessment availability window of at least 48 hours during finals week (Monday-Friday). The day and time of the final assessment or the assessment availability window for the final assessments should be included in the syllabus on the first day of class.
2. For classes without a scheduled meeting time, final assessments administered online should have an assessment availability window of at least 48 hours during final exam week (Monday-Friday) and the assessment availability window for the final assessment should be included in the syllabus on the first day of class.
3. Faculty are strongly encouraged to set the assessment availability window for online final assessments to 72 hours or more.
WHEREAS, For nearly 50 years the Statistics Department has offered a BS Statistics degree and, in 1973 was among the first programs in the nation to offer an undergraduate degree in statistics; and

WHEREAS, Demand for statisticians with advanced degrees vastly outstrips supply, both in California and nationwide; and

WHEREAS, Cal Poly’s Academic Plan Consultative Committee reviewed the summary statement for the new Master of Science in Statistics degree; and

WHEREAS, Both the Cal Poly Provost and the CSU Board of Trustees approved the addition of the new Master of Science in Statistics degree to Cal Poly’s academic plan; and

WHEREAS, The department developed a new degree program proposal (see attached) using the template required by the Chancellor's Office; and

WHEREAS, This new degree program proposal has been approved by the Statistics department curriculum committee, the College of Science and Mathematics curriculum committee, and the Academic Senate Curriculum Committee; therefore be it

RESOLVED: That the Academic Senate of Cal Poly approves the new degree program for final review by the Chancellor’s Office.

Proposed by: Andrew Schaffner, Kelly Bodwin, and John Walker on behalf of the Statistics Department Faculty
Date: March 29, 2022
Please confirm (√) that the following are included in the degree proposal:

__√__ Board of Trustees Academic Master Plan approval date

__√__ WSCUC response to Substantive Change Screening Form is attached

_N/A_ Copies of any contracts or agreements made between parties with an interest in operating the proposed program. Other entities may include academic departments, academic institutions, foundations, vendors or similar. Please include a copy of the agreement and an e-mail or other evidence that the campus attorney has approved the agreement.

__√__ The total number of units required for graduation is specified (not just the total for the major):

_N/A_ a proposed bachelor’s program requires no fewer than 120 semester units

_N/A_ any proposed bachelor’s degree program with requirements exceeding 120 units must request an exception to the 120 semester unit limit policy

__√__ all units required for degree completion must be included in the total units required for the degree. Any proficiencies required to graduate that are beyond what is included in university criteria admission criteria must be assigned unit values and included in the total unit count.

_N/A_ Title 5 minimum requirements for bachelor’s degree have been met, including:

_N/A_ minimum number of units in major (BA 24 semester units, BS 36 semester units)

_N/A_ minimum number of units in upper-division (BA 12 semester units, BS 18 semester units)

__√__ Title 5 requirements for proposed master’s degree have been met, including:

__√__ minimum of 30 semester units of approved graduate work are required

__√__ no more than 50% of required units are organized primarily for undergraduate students

__√__ maximum of 6 semester units are allowed for thesis or project

__√__ Title 5 requirements for master’s degree culminating experience are clearly explained.

__√__ for graduate programs, at least five full-time faculty with terminal degrees in appropriate disciplines are on staff.

_N/A_ For self-support programs:
(in conformance with EO 1099 and EO 1102)
_N/A_ specification of how all required EO 1099 self-support criteria are met

_N/A_ the proposed program does not replace existing state-support courses or programs

_N/A_ academic standards associated with all aspects of such offerings are identical to those of comparable state-supported CSU instructional programs

_N/A_ explanation of why state funds are either inappropriate or unavailable

_N/A_ a cost-recovery program budget is included*

_N/A_ student per-unit cost is specified

_N/A_ total cost for students to complete the program is specified

* Basic Cost Recovery Budget Elements (Three to five year budget projection)

Student per-unit cost
Number of units producing revenue each academic year
Total cost a student will pay to complete the program

Revenue - (yearly projection over three years for a two-year program; five years for a four-year program)
  Student fees
  Include projected attrition numbers each year
  Any additional revenue sources (e.g., grants)

Direct Expenses
  Instructional costs – faculty salaries and benefits
  Operational costs – (e.g., facility rental)
  Extended Education costs – staff, recruitment, marketing, etc.
  Technology development and ongoing support (online programs)

Indirect Expenses
  Campus partners
  Campus reimbursement general fund
  Extended Education overhead
  Chancellor’s Office overhead

*Additional line items maybe added based on program characteristics and needs.
1. **Program Type**
   
   a. State-Support
   
   c. Delivery Format: Fully face to face
   
   e. New Program

2. **Program Identification**
   
   a. **Campus:**
      
      California Polytechnic State University, San Luis Obispo
   
   b. **Full and exact degree designation and title:**
      
      Master of Science in Statistics
   
   c. **Date the Board of Trustees approved adding this program projection to the campus Academic Master Plan:**
      
      March 24, 2020
   
   d. **Term and academic year of intended implementation:**
      
      Fall 2023
   
   e. **Total number of units required for graduation. This will include all requirements (and campus-specific graduation requirements), not just major requirements:**
      
      45 quarter units
   
   f. **Name of the department(s), division, or other unit of the campus that would offer the proposed degree major program. Please identify the unit that will have primary responsibility.**
      
      Department of Statistics, College of Science and Math
   
   g. **Name, title, and rank of the individual(s) primarily responsible for drafting the proposed degree major program.**
      
      Dr. Andrew Schaffner, Professor (aschaffn@calpoly.edu)
      Dr. Kelly Bodwin, Assistant Professor (kbodwin@calpoly.edu)
      Dr. John Walker, Professor (jwalker@calpoly.edu)
      Dr. Dennis Sun, Assistant Professor (dsun09@calpoly.edu)
h. **Statement from the appropriate campus administrative authority that the addition of this program supports the campus mission and will not impede the successful operation and growth of existing academic programs.**

See: Supplement 4: Dean’s Office Letter of Support

i. **Any other campus approval documents that may apply (e.g. curriculum committee approvals).**

See Supplement 1:
(a) Statistics Department Curriculum Committee approval  
(b) College of Science and Math Curriculum Committee approval and Academic Senate Curriculum Committee approval  
(c) Academic Senate Resolution  
(d) Presidential approval

j. **Substantive Change:**
The WASC Senior College and University Commission Substantive Change Manual states: **Institutions must submit a Substantive Change Screening Form for all new degree programs to determine if a review is necessary. Please include a copy of the response to the Substantive Change Screening form.**

If this proposed program is subject to WSCUC Substantive Change review, the campus may submit a copy of the WSCUC Sub-Change proposal in lieu of this CSU proposal format. If campuses choose to submit the WSCUC Substantive Change Proposal, they will also be required to submit a program assessment plan using the format found in the CSU program proposal template.

The proposed program was submitted for a substantive change screening. WSCUC determined that the program was not subject to WSCUC Substantive Change Review.

See Supplement 7: WSCUC Response to Substantive Change Screening

k. **Proposed Classification of Instructional Programs and CSU Degree Program Code**

Although the Chancellor’s Office assigns CIP Codes, campuses are invited to suggest one CSU degree program code and one corresponding CIP code. If an appropriate CSU code does not appear on the system-wide list at: [http://www.calstate.edu/app/resources.shtml](http://www.calstate.edu/app/resources.shtml) you can search CIP 2020 at [http://nces.ed.gov/ipeds/cipcode/](http://nces.ed.gov/ipeds/cipcode/) to identify the code that best matches the proposed degree program. The Classification of Instructional Programs (CIP) is a National Center for Education Statistics (NCES) publication that provides a numerical classification and standard terminology for secondary and postsecondary instructional programs. The CSU degree program code (based on old HEGIS codes) and CIP code will be assigned when the program is approved by the Chancellor.

27.0501 (Statistics – General)
3. Program Overview and Rationale

a. Provide a brief descriptive overview of the program citing its 1) purpose and strengths, 2) fit with the institutional mission or institutional learning outcomes, and 3) the compelling reasons for offering the program at this time.

The purpose of the Masters of Science in Statistics program is to provide advanced training to students preparing for careers in statistics and data analysis. The proposed program consists of advanced coursework that lays conceptual and methodological foundations, as well as applied skills such as statistical computing. The degree also includes a significant amount of independent research, including consulting with external clients and collaborating on interdisciplinary projects across campus. This is a unique program that fits Cal Poly’s “Learn by Doing” mission, giving students hands-on experience with applying statistical theory to real problems. Students will be partners with faculty in building cross-campus, interdisciplinary collaborations, which will benefit both students and faculty---not just in the Statistics department but across the entire university.

One notable strength of the proposed program is the faculty. The Statistics Department at Cal Poly is renowned nationally: faculty regularly publish work and present at major conferences, and four of our faculty members have been elected Fellows of the American Statistical Association. It is one of only two standalone Statistics departments in the CSU, with 20 tenure-track faculty members whose training, research, and expertise is specifically in statistics and data analysis. Thus, we are well-positioned to train students for the growing number of jobs in these areas.

In 2019, the College of Science and Math contracted Hanover Research to conduct market research based on our preliminary proposal for a Masters program. It found that the demand in the job market for statisticians with advanced degrees vastly outstrips the supply, both in California and nationwide. The gap is projected to widen over the next 10 years. Hanover Research concluded that the market was highly favorable for a Masters program like ours.

Although the Statistics Department already offers an undergraduate degree in Statistics and a cross-disciplinary studies minor in Data Science, many data-driven jobs now require advanced degrees. Our proposed Master’s program would equip students with the skills and qualifications necessary to step directly into high-level data analysis jobs. This opportunity would greatly benefit current undergraduates at Cal Poly, as well as provide an option for students in the Central Coast region who completed their undergraduate degree elsewhere.

b. Provide the proposed catalog description. The description should include:

i. a narrative description of the program

The Masters of Science in Statistics program is designed to provide advanced training to students preparing for careers in statistics and data analysis. The program consists of coursework that lays the conceptual and methodological foundations of the discipline, as well as consulting and research experiences.
The program is intended for students with an undergraduate major or minor degree in Statistics. It requires completion of a core curriculum (covering theory and applications), a thesis, and directed electives for a total of 45 units.

**ii. admission requirements:**

All students must have taken the equivalent of:
- MATH 206 (linear algebra),
- MATH 241 (multivariable calculus),
- CSC 101 (introductory computer science), and
- STAT 302 (second course in statistics).

In addition, students are expected to have taken the equivalent of:
- STAT 323 (design of experiments)
- STAT 331 (statistical computing in R)
- STAT 334 (applied linear models)

Students without these courses may be admitted conditionally, taking up to 12 units (not applicable to the degree) in these areas to make up for any deficiencies.

**iii. a list of all required courses for graduation including electives, specifying course catalog numbers, course titles, prerequisites or co-requisites (ensuring there are no “hidden prerequisites” that would drive the total units required to graduate beyond the total reported in 2e above), course unit requirements, and any units associated with demonstration of proficiency beyond what is included in university admission criteria**

- **Core Courses (37 units)***
  - STAT 425: Probability Theory (4 units)
    Prerequisites: MATH 206, MATH 241, STAT 302
    *(all admissions requirements)*
  - STAT 426: Estimation and Sampling Theory (4 units)
    Prerequisites: STAT 425
  - STAT 427: Mathematical Statistics (4 units)
    Prerequisites: STAT 426
  - STAT 550: Generalized Linear Models (4 units)
    Prerequisites: STAT 334, STAT 427
  - STAT 551: Statistical Learning with R (4 units)
    Prerequisites: STAT 331 or 531, STAT 334, STAT 305 or STAT 350
  - STAT 566: Graduate Consulting Practicum (2 units)
    Prerequisites: STAT 466
  - STAT 590: Graduate Seminar (3 units)
  - STAT 599: Thesis (8 units)

- **Elective Courses (8 units)**
  - STAT 541: Advanced Statistical Computing with R (4 units)
    Prerequisites: STAT 331, STAT 334, STAT 426
○ STAT 543: Advanced Design and Analysis of Experiments (4 units)
  Prerequisites: STAT 323 or 523, STAT 334 or 534
○ STAT 545: Applied Stochastic Processes (4 units)
  Prerequisites: MATH 206 or MATH 244, STAT 426
○ STAT 500: Independent Study (1-4 units)
  Prerequisites: Consent of graduate advisor

○ CSC 566: Topics in Advanced Data Mining (4 units)
  Prerequisites: CSC 466
○ CSC 582: Introduction to Natural Language Processing (4 units)
  Prerequisites: CSC 466
○ MATH 550: Real Analysis (4 units)
  Prerequisites: Consent of instructor

• Prerequisite Courses (0-12 units, depending on student background)
  ○ STAT 323: Design and Analysis of Experiments I (4 units)
  ○ STAT 331: Statistical Computing with R (4 units)
  ○ STAT 334: Applied Linear Models (4 units)

* Students who complete 400-level Core Courses as part of their Bachelor’s Degree or Minor Degree may substitute any 500-level elective course, or any approved 400-level elective course. (See Supplement 2: Approved Electives for a list of approved courses.)

total units required to complete the degree:

45

if a master’s degree, catalog copy describing the culminating experience requirement(s)

This degree culminates in completion of a thesis, which gives students experience in completing an original research project. The findings of this thesis should be of a quality commensurate with publication in a peer-reviewed scientific journal.

4. Curriculum

(These requirements conform to the revised 2013 WASC Handbook of Accreditation)

a. These program proposal elements are required:

  • Institutional learning outcomes (ILOs)
  • Program learning outcomes (PLOs)
  • Student learning outcomes (SLOs)

Describe outcomes for the 1) institution, 2) program, and for 3) student learning. Institutional learning outcomes (ILOs) typically highlight the general knowledge, skills, and dispositions all students are expected to have upon graduating from an institution of higher learning. Program learning outcomes (PLOs) highlight the knowledge, skills, and dispositions students are expected to know as graduates from a specific program. PLOs are more narrowly focused than
ILOs. Student learning outcomes (SLOs) clearly convey the specific and measureable knowledge, skills, and/or behaviors expected and guide the type of assessments to be used to determine if the desired level of learning has been achieved.

(WASC 2013 CFR: 1.1, 1.2, 2.3)

Institutional Learning Outcomes:

When students graduate from Cal Poly, they should be able to:

1. Think critically and creatively
2. Communicate effectively
3. Demonstrate expertise in a scholarly discipline and understand that discipline in relation to the larger world of the arts, sciences, and technology
4. Work productively as individuals and in groups
5. Use their knowledge and skills to make a positive contribution to society
6. Make reasoned decisions based on an understanding of ethics, respect for diversity, and awareness of issues related to sustainability
7. Engage in lifelong learning

Program Learning Outcomes:

After completing the MS Statistics, students will be able to

1. Demonstrate mastery of core statistical theory;
2. Demonstrate proficiency in statistical methodology and data analysis;
3. Select, justify, and apply appropriate inferential and predictive methods;
4. Responsibly interpret results and output of statistical analyses;
5. Communicate effectively (written and oral) and organize/manage projects in collaborative settings (within and between disciplines);
6. Write code for statistical applications in one or more languages;
7. Gather and manage data from a variety of sources;
8. Collaborate with researchers and clients to solve data-oriented problems that arise in other disciplines; and,
9. Conduct independent learning and research.

Student Learning Outcomes:

All students will

1. Serve the needs of one or more research clients or collaborators by identifying, implementing, and mathematically defending the use of appropriate statistical methodology;
2. Practice self-learning skills to maintain currency in statistical and associated computing methodology through reading, discussion, and peer presentations of current practices as reflected in statistical literature;
3. Build and evaluate inferential and predictive models to analyze data with both numeric and categorical responses using statistical programming; and
Master of Science in Statistics (MS-STAT) SLO PLO Mapping Matrix.

<table>
<thead>
<tr>
<th></th>
<th>PLO 1</th>
<th>PLO 2</th>
<th>PLO 3</th>
<th>PLO 4</th>
<th>PLO 5</th>
<th>PLO 6</th>
<th>PLO 7</th>
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<td>x</td>
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<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>SLO 2</td>
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<td></td>
<td>x</td>
<td></td>
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<td>x</td>
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<td>x</td>
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</tbody>
</table>

b. These program proposal elements are required:

- Comprehensive Assessment Plan addressing all assessment elements
- Matrix showing where student learning outcomes are introduced (I), developed (D), and mastered (M)

Key to program planning is creating a comprehensive assessment plan addressing multiple elements, including a strategy and tool to assess each student learning outcome. SLOs operationalize the PLOs and serve as the basis for assessing student learning in the major. Constructing an assessment matrix, showing the relationship between all assessment elements, is an efficient and clear method of displaying all assessment plan components.

Creating a curriculum map matrix, identifying the student learning outcomes, the courses where they are found, and where content is “introduced,” “developed,” and “mastered” insures that all student learning outcomes are directly related to overall program goals and represented across the curriculum at the appropriate times. Assessment of outcomes is expected to be carried out systematically according to an established schedule, generally every five years.

Comprehensive Program Assessment Plan:

The Statistics Department has a standing Assessment Committee that will evaluate MS program assessment elements identified in the comprehensive assessment plan. The Assessment Committee will summarize its assessment activities at the end of each academic year and will then report the results to the full Statistics Department faculty. The Assessment Committee will make recommendations on how the degree program can be improved based on the assessment results. The Department will decide upon and perform additional curricular follow-ups to all assessment activities, which may involve consultation with external bodies.
Direct Assessment:

The Statistics department will use the following as direct assessment of the master’s program:

- Embedded questions in exams linked to specific SLOs/PLOs.
- Homework assignments, projects, oral presentations, statistical consulting, and written reports. We will use rubrics developed around certain criteria for specific learning outcome to be assessed. Each course will have artifacts linked to SLOs and PLOs.

Capstone Experience: Thesis Project:

Progress through the MS degree provides a cumulative experience beginning with foundational coursework and culminating with implementation of a research thesis. Students can experience this milestone through completion of the research thesis course (STAT 599) and publication of a written thesis report in a digital archive and/or peer review journal. Written reports will be evaluated using an appropriate rubric to assess many of the PLOs. The comprehensive assessment plan provides a structure to evaluate achievement of PLOs. The assessment plan aligns the Institutional Learning Outcomes, and the Program Learning Outcomes with the assessment activities, tools, schedule, reports, program findings and closing the loop strategies for program assessment and improvement.

Indirect Assessment:

The following methods will be used to collect data that reflects indirect assessment:

- Surveys/Interviews: The MS degree program will survey graduating students and alumni to gather data and feedback for assessment of program objectives.
- Postgraduate employer/advisory survey: External indicators can serve as excellent feedback that the MS degree is meeting its program goals. The postgraduate employer/advisory survey will help determine the success of graduates in securing positions in academia, private sector, governmental agencies, and non-profits.

Full Comprehensive Program Assessment Matrix:

Please refer to Appendix 1A – Program Assessment Matrix.
Curriculum Map Matrix:

<table>
<thead>
<tr>
<th>SLO 1: Serve the needs of one or more research clients or collaborators by identifying, implementing, and mathematically defending the use of appropriate statistical methodology</th>
<th>STAT 425/6/7 Statistical Theory Sequence</th>
<th>STAT 550 Generalized Linear Models</th>
<th>STAT 551 Statistical Learning with R</th>
<th>STAT 565 Graduate Consulting Practicum</th>
<th>STAT 590 Graduate Seminar</th>
<th>STAT 599 Thesis</th>
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<tbody>
<tr>
<td>I/D</td>
<td>D</td>
<td>D</td>
<td>M</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 2: Practice self-learning skills to maintain currency in statistical and associated computing methodology through reading, discussion, and peer presentations of current practices as reflected in statistical literature</th>
<th>STAT 425/6/7 Statistical Theory Sequence</th>
<th>STAT 550 Generalized Linear Models</th>
<th>STAT 551 Statistical Learning with R</th>
<th>STAT 565 Graduate Consulting Practicum</th>
<th>STAT 590 Graduate Seminar</th>
<th>STAT 599 Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I</td>
<td>D/M</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 3: Build and evaluate inferential and predictive models to analyze data with both numeric and categorical responses using statistical programming</th>
<th>STAT 425/6/7 Statistical Theory Sequence</th>
<th>STAT 550 Generalized Linear Models</th>
<th>STAT 551 Statistical Learning with R</th>
<th>STAT 565 Graduate Consulting Practicum</th>
<th>STAT 590 Graduate Seminar</th>
<th>STAT 599 Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/D</td>
<td>D/M</td>
<td>D/M</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 4: Complete a written thesis and oral thesis defense</th>
<th>STAT 425/6/7 Statistical Theory Sequence</th>
<th>STAT 550 Generalized Linear Models</th>
<th>STAT 551 Statistical Learning with R</th>
<th>STAT 565 Graduate Consulting Practicum</th>
<th>STAT 590 Graduate Seminar</th>
<th>STAT 599 Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>D</td>
<td>D</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Program content is introduced (I), developed (D), and/or mastered (M).

c. Indicate total number of units required for graduation.

45 quarter units
d. Include a justification for any baccalaureate program that requires more than 120-semester units or 180-quarter units. Programs proposed at more than 120 semester units will have to provide either a Title 5 justification for the higher units or a campus-approved request for an exception to the Title 5 unit limit for this kind of baccalaureate program.

(Not applicable to MS Program.)

e. If any formal options, concentrations, or special emphases are planned under the proposed major, identify and list the required courses. Optional: You may propose a CSU degree program code and CIP code for each concentration that you would like to report separately from the major program.

(Not applicable to MS Program.)

f. List any new courses that are: (1) needed to initiate the program or (2) needed during the first two years after implementation. Include proposed catalog descriptions for new courses. For graduate program proposals, identify whether each new course would be at the graduate- or undergraduate-level.

STAT 500 – Independent Study (1-4) – New Course*

Individual research or advanced study planned and completed under the direction of a departmental faculty member. Total degree credit limited to 4 units. Total credit limited to 12 units.

Prerequisite: Consent of graduate advisor.

STAT 541 - Advanced Statistical Computing with R (4) – New Course*

Advanced techniques for efficient use of R software to perform statistical computations, analyze large amounts of data, and develop new software. Includes version control systems; code design, documentation, and unit testing; modern data and database software; dynamic data visualizations; special data types; efficient processing of big data; functional programming and recursion; numerical integration and optimization; and. Use of R throughout the course. 4 lectures.

Prerequisites: C- or better in STAT 331 or 531, STAT 334, and STAT 426.

STAT 543 - Advanced Design and Analysis of Experiments (4) – New Course*

2^k and 3^k factorial and fractional factorial designs, balanced and partially balanced incomplete block designs, nested designs, split-plot designs, response surfaces, repeated measures, and other design approaches. Design matrices. Random and mixed effects models, confounding, different parameterizations.

Prerequisites: C- or better in STAT 323 or 523 and STAT 334 or 534.

STAT 545 - Applied Stochastic Processes (4) – New Course*

Properties, simulation, and application of stochastic processes. Discrete-time and continuous-time Markov chains, Poisson processes, Gaussian processes,
continuous-state Markov processes. Markov chain Monte Carlo (MCMC) simulation methods and applications. Fitting stochastic process models to data. Prerequisites: MATH 206 or MATH 244; and C- or better in STAT 426.

STAT 550 - Generalized Linear Models (4) – New Course

Theory and application of linear and generalized linear models, including modeling correlated responses, overdispersion, random effects models, mixed effects models, Bayesian generalized linear models, generalized additive models, model selection and model checking. Use of statistical software for implementation of methods. Prerequisites: C- or better in STAT 334 and STAT 427.

STAT 551 - Statistical Learning with R (4) – New Course*

Modern methods in predictive modeling and classification. Splines, smoothing splines, ridge regression, LASSO, regression and classification trees, generalized additive models, logistic regression, and linear discriminant analysis. Model assessment and selection using cross validation, bootstrapping, AIC, and BIC. Use of the R programming language throughout. Prerequisites: C- or better in STAT 334, STAT 331 or 531, and STAT 305 or STAT 350.

STAT 566 - Graduate Consulting Practicum (2) – New Course

Practice in statistical consulting. Observing faculty-led consulting sessions. Organizing and leading consulting projects with faculty supervision. Discussion of statistical consulting cases in a seminar format. 2 seminar. Prerequisite: STAT 466 and graduate standing.

STAT 590 - Graduate Seminar (1) – New Course

Seminar built around topics in advanced statistics selected by the faculty. Discussion of current research papers in statistics. Course may be repeated for up to 3 units. Prerequisite: Graduate standing and consent of instructor.

STAT 599 – Thesis (4) – New Course

Selection by individual or group, with faculty guidance and approval, of topic for independent research or investigation resulting in a thesis or project to be used to satisfy the degree requirement. An appropriate experimental or analytical thesis or project may be accepted. Total credit limited to 8 units. Prerequisite: Graduate standing and consent of instructor.

* These courses replace existing 400-level courses.

g. Attach a proposed course-offering plan for the first three years of program implementation, indicating likely faculty teaching assignments.
(WASC 2013 CFR: 2.2b)

Fall 2023:
STAT 425  Probability Theory (4) (Carlton)
STAT 541  Advanced Statistical Computing with R (4) (Bodwin)

Winter 2024:
STAT 426  Estimation and Sampling Theory (4) (Sun)
STAT 545  Applied Stochastic Processes (4) (Ross)
STAT 551  Statistical Learning with R (4) (Bodwin)

Spring 2024:
STAT 427  Mathematical Statistics (4) (Sun)
STAT 466  Statistical Consulting (4) (Schaffner)
STAT 543  Advanced Design and Analysis of Experiments (4) (McGaughey)
STAT 550  Generalized Linear Models (4) (Walker)

Fall 2024:
STAT 425  Probability Theory (4) (Carlton)
STAT 541  Advanced Statistical Computing with R (4) (Bodwin)
STAT 566  Graduate Consulting Practicum (2) (various faculty)
STAT 590  Graduate Seminar (1) (Sun)

Winter 2025:
STAT 426  Estimation and Sampling Theory (4) (Sun)
STAT 545  Applied Stochastic Processes (4) (Ross)
STAT 551  Statistical Learning with R (4) (Glanz)
STAT 590  Graduate Seminar (1) (Carlton)
STAT 599  Thesis (4) (various faculty)

Spring 2025:
STAT 427  Mathematical Statics (4) (Sun)
STAT 466  Statistical Consulting (4) (Smith)
STAT 550  Generalized Linear Models (4) (Walker)
STAT 590  Graduate Seminar (1) (Bodwin)
STAT 599  Thesis (4) (various faculty)

Fall 2025:
STAT 425  Probability Theory (4) (Carlton)
STAT 541  Advanced Statistical Computing with R (4) (Bodwin)
STAT 566  Graduate Consulting Practicum (2) (various faculty)
STAT 590  Graduate Seminar (1) (Sun)

Winter 2026:
STAT 426  Estimation and Sampling Theory (4) (Sun)
STAT 545  Applied Stochastic Processes (4) (Ross)
STAT 551  Statistical Learning with R (4) (Bodwin)
STAT 590  Graduate Seminar (1) (Carlton)
STAT 599  Thesis (4)
Spring 2026:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 427</td>
<td>Mathematical Statistics (4) (Sun)</td>
<td>4</td>
</tr>
<tr>
<td>STAT 466</td>
<td>Statistical Consulting (4) (Schaffner)</td>
<td>4</td>
</tr>
<tr>
<td>STAT 550</td>
<td>Generalized Linear Models (4) (Walker)</td>
<td>4</td>
</tr>
<tr>
<td>STAT 590</td>
<td>Graduate Seminar (1) (Bodwin)</td>
<td>1</td>
</tr>
<tr>
<td>STAT 599</td>
<td>Thesis (4)</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: This schedule to be revised in accordance with the University’s timeline for conversion to a semester system.

h. For master’s degree proposals, include evidence that program requirements conform to the minimum requirements for the culminating experience, as specified in Section 40510 of Title 5 of the California Code of Regulations.

(1) The completion of a specified pattern of study approved by the appropriate campus authority.

[Administrative reviews pending.]

(2) A minimum of thirty semester units of approved graduate work completed within a maximum time to be established by each campus.

The MS degree requires completion of 45 quarter units, equivalent to 30 semester units.

(A) Not less than 21 semester units (32 quarter units) shall be completed in residence.

The MS degree requires at least 32 quarter units be completed in residence.

(B) Not less than one-half of the units required for the degree shall be in courses organized primarily for graduate students.

The MS degree requires a minimum of 27 quarter units of 500 level courses. (This accounts for 60% of total required units)

(C) Not more than six semester units shall be allowed for a thesis or project.

The MS degree does not allow more than 9 quarter units for a thesis or project.

(3) Satisfactory completion of a thesis, project, or comprehensive examination.

The MS degree requires completion of a thesis (8 quarter units)

(4) A grade point average of 3.0 (grade of B) or better in all courses taken to satisfy the requirements for the degree, except that a course in which no letter grade is assigned shall not be used in computing the grade point average.

The MS degree requires a grade point average of 3.0 or better.
i. For graduate degree proposals, cite the corresponding bachelor’s program and specify whether it is (a) subject to accreditation and (b) currently accredited.

(WASC 2013 CFR: 2.2b)

The Cal Poly bachelor’s program in Statistics is the primary bachelor’s program corresponding to the proposed MS in Statistics. This program is not subject to accreditation.

j. For graduate degree programs, specify admission criteria, including any prerequisite coursework.

(WASC 2013 CFR: 2.2b)

Minimum requirements for applicants to be considered are:

- Filing of an application for Graduate Admission (https://www2.calstate.edu/apply) by the deadlines specified at http://admissions.calpoly.edu/applicants/
- Submission of Graduate Record Exam (GRE) General Test scores electronically to Institution Code: R4038. While no minimum GRE scores have been established, they will be used along with other factors (statement of purpose, transcripts, recommendations, etc.) by Graduate Admissions Committee as they consider student applications
- Submission of three letters of recommendation from a source that can attest to the academic capabilities of the applicant. All letters of recommendation must be uploaded through Cal State Apply
- Statement of purpose describing the student’s background and future goals in statistics
- Completion of a bachelor’s degree from an accredited college/university with a minimum grade point average of 3.0 and completion of the following undergraduate coursework:
  - Statistics: At least two courses
  - Mathematics: Multivariable calculus (equivalent to Cal Poly MATH 241) and linear algebra (equivalent to Cal Poly MATH 206)
  - Computer Science: At least course, equivalent to Cal Poly CPE 101

Beyond the minimum requirements, the following considerations are relevant:

- Completion of undergraduate coursework in probability, regression, experimental design, and R. An applicant who lacks prerequisite coursework may be admitted as a conditionally classified student and must make up any deficiencies (12 unit limit) before advancement to classified graduate standing.

All applicants who do not speak and write English as their primary language are required to complete the Test of English as a Foreign Language (TOEFL), taken within the last 2 years with a minimum score of 550 (paper version), 213 (computerized version), or 80 (internet based). Submit scores electronically to Institution Code: 4038. This requirement does not apply if country of citizenship is listed on Cal Poly Admissions website: http://admissions.calpoly.edu/applicants/international/checklist.html

k. For graduate degree programs, specify criteria for student continuation in the program.
Each quarter students are enrolled, satisfactory progress on the Formal Study Plan is expected to be made. Satisfactory academic progress shall be defined as maintaining a 3.0 GPA on all courses listed on the formal study plan. In addition, per University requirement, “graduate students are required to maintain continuous enrollment from the time of first enrollment in a graduate program until completion of the degree. Continuous enrollment is defined as being enrolled during Fall, Winter, and Spring quarters each year. Students can maintain continuous enrollment either by being enrolled as a regular student; obtaining approval for an education or medical leave prior to the quarter when such a leave would begin; or by registering in a special course designated for this purpose, during quarters in which they are not regularly enrolled. Students who fail to fulfill this continuous enrollment requirement will be not be permitted to graduate even if all degree requirements have been completed until payment has been made for all quarters of non-enrollment. In addition, all graduate students must be enrolled the quarter they graduate.”

1. For undergraduate programs, specify planned provisions for articulation of the proposed major with community college programs.

   (Not applicable to MS Program.)

m. Provide an advising “roadmap” developed for the major.

   (Not directly applicable to MS Program)
   See “Supplement 5: Degree Flowchart” for additional degree roadmap details.

n. Describe how accreditation requirements will be met, if applicable, and anticipated date of accreditation request (including the WASC Substantive Change process).

   (WASC 2013 CFR: 1.8)

   (Not applicable to this MS Program.)

5. Societal and Public Need for the Proposed Degree Major Program

   a. List other California State University campuses currently offering or projecting the proposed degree major program; list neighboring institutions, public and private, currently offering the proposed degree major program.

      The following CSU campuses offer an M.S. in Statistics:
      East Bay, San Jose, Fullerton, Long Beach, and San Diego.

      In the broader Central Coast region, UC Santa Barbara also offers an M.A. in Statistics.

   b. Describe differences between the proposed program and programs listed in Section 5a above.

      Cal Poly San Luis Obispo is one of only two CSUs to have a standalone Statistics department, with 20 tenure-track faculty members whose training and research is
specifically focused in statistics and data analysis. The CSU campuses currently offering graduate degrees in statistics are all located very far from the Central Coast, so we expect our program to fill a geographical gap. As the flagship CSU, Cal Poly SLO is well suited to offer a rigorous Master’s program, comparable to those at large research institutions.

Locally, the only comparable program is the M.A. in Statistics at UC Santa Barbara. This program is comparable in focus; however, it is housed at a large research university, alongside a Ph.D. program in Statistics, and thus will be culturally distinct from the proposed degree at Cal Poly SLO. Additionally, employment data suggests that the demand for advanced statistics degrees far outstrips the current supply of degree programs. We view the proximity of UC Santa Barbara as an opportunity for cross-institutional research and collaboration.

c. List other curricula currently offered by the campus that are closely related to the proposed program.

The only loosely comparable graduate program on the San Luis Obispo campus is the M.S. in Business Analytics offered by the Orfalea College of Business. Although this program offers some coursework in statistical analysis and visualization, its primary focus is data-based decision making in business and marketing. The proposed M.S. in Statistics would provide direct training in statistical skills and thought, for application in a variety of fields.

d. Describe community participation, if any, in the planning process. This may include prospective employers of graduates.

No community participation is needed for the planning process. However, the creation of the M.S. in Statistics is partially informed by a survey of 104 alumnae of the B.S. in Statistics at Cal Poly, which included questions to potential employers regarding the marketability of a Statistics M.S. degree. (See below)

e. Provide applicable workforce demand projections and other relevant data.

Statistics is one of the fastest-growing areas of job demand in the United States. A recent market analysis study performed for the College of Science and Mathematics (CSM) by Hanover Research found 6,365 statistics-related job postings in California in the past 6 months alone. Of these, approximately 1,000 were direct statistician/biostatistician positions, which typically require graduate degrees. The market research study also found a projected growth rate for statistics-related jobs in California from 2016 to 2026 is of 19%. This trend, and the trend holds regionally in the West (18.7%) and nationally (18.1%) as well. The Hanover study further indicates that statisticians in government, business, and industry earn between $17,000 and $50,000 more per year if they hold a Master’s degree.

These findings are supported by other national studies: Glassdoor has ranked “data scientist” the #1 job in America several years in a row, with a median salary of $110,000, and it is estimated that the demand for data science skills will increase by over 90% in the next 2 years. The Bureau of Labor Statistics also reports an increasing demand for Master’s level statistics skills, and the annual survey of the American Statistical Association notes a marked salary increase for statisticians with a Master’s degree.
Locally, there is also strong evidence for the market value of a graduate degree. In a recent survey of alumni of the Cal Poly Statistics Department (to which 104 people responded), 82% of those employed in industry stated that their workplace would be “somewhat more” or “much more” likely to hire an applicant with a Master’s degree. Most respondents cited the need for specialized data skills as the reason for this preference. Respondents also frequently cited training in specific skills and experience producing independent research as attractive features to prospective employers.

The Statistics Department at Cal Poly has a reputation for producing graduates who are prepared to succeed in the workforce immediately upon graduation. However, as analyses of data-based questions become more complex, the skills required for the most desirable jobs become more specialized. By offering an M.S. program in Statistics, Cal Poly would vastly improve the employment opportunities and job quality of its graduates.

6. Student Demand

a. Provide compelling evidence of student interest in enrolling in the proposed program. Types of evidence vary and may include (for example), national, statewide, and professional employment forecasts and surveys; petitions; lists of related associate degree programs at feeder community colleges; reports from community college transfer centers; and enrollments from feeder baccalaureate programs.

The recent market analysis study performed by Hanover Research concluded that we should move forward with a master’s program in Statistics partly because of the strong student demand for such a program across all geographic levels. Hanover Research cites an average annualized growth rate for master’s degrees in Statistics in California nearly three times the growth rate for all master’s degrees in California. Explicitly, master’s degrees conferrals in Statistics grew at an annualized rate of 9.6 percent 2013 to 2017, much faster than the rate for master’s degrees across all fields (3.3 percent). Trends at the regional and national levels are even stronger, with 9.8 percent and 14.7 percent growth, respectively. Similarly, bachelor’s degrees in statistics programs are also experiencing rapid growth, indicating a strong outlook for Cal Poly’s current undergraduate program, as well as growing prospective student market for the proposed master’s program in Statistics. The integrated postsecondary education data system (IPEDS) indicates 18 master’s level and 16 bachelor’s level Statistics programs in California in 2017. Regionally, there are 24 master’s level and 19 bachelor’s level program in the Far West. In considering the very strong growth at both degree levels, Cal Poly is well positioned to launch a new master’s degree in Statistics.

To ascertain student demand for and interest in a master’s program in Statistics, in fall 2018 we surveyed our current students as well as alumni. Out of the 104 alumni who responded, 47.6% indicated that they pursued advanced degrees elsewhere after graduating from Cal Poly, and 79.6% said they would have been “somewhat” or “very” likely to enroll in an M.S. in statistics at Cal Poly if one had been offered. Similarly, out of the 62 current Cal Poly statistics majors who responded, 73.1% (46 students) indicated that they would be
likely to pursue such a program. Both alumni and current students frequently cited the need for further training in specific skills and experience producing independent research as reasons for their interest. Several current students also emphasized the increased job availability as a factor in their decision. The surveyed alums and current students also provided positive written comments on the prospects, utility and career impact of the proposed program (see appendix 3 for their complete and verbatim comments).

Furthermore, the Statistics Department collects data on graduating seniors every year for program assessment. Over the years, we have gathered encouraging information on student demand and interest for a master’s program. For instance, out of the 29 graduating seniors surveyed in 2017, 86.2% indicated that they would “likely” or “definitely” consider a master’s program in applied Statistics as an academic option. Similarly, out of the 31 graduating seniors surveyed in 2018, 83.9% indicated that they would “likely” or “definitely” consider a master’s program in applied Statistics as an academic option. A high percentage of the 2017 (62.1%) and 2018 (64.5%) graduating seniors surveyed indicated that they would “definitely” consider such a program.

In this light, the department will recruit prospective master’s students from three sources:

1) existing undergraduate Statistics majors,
2) existing Statistics and Data Science minors, and
3) external students through the general Cal Poly graduate admissions process.

Based on our current and forecasted tenured/tenure-track faculty density, we anticipate our graduate program can sustain approximately 20 graduate students per cohort. We estimate that at least 15 of our existing undergraduate majors and minors will be recruited for the master’s program along with at least 5 external candidates.

b. Identify how issues of diversity and access to the university were considered when planning this program. Describe what steps the program will take to insure ALL prospective candidates have equitable access to the program. This description may include recruitment strategies and any other techniques to insure a diverse and qualified candidate pool.

We are committed to achieving a diverse student group in the MS program. The Cal Poly undergraduate students most likely to enroll in the new program are already gender-diverse. A growing M.S. program with funded research projects will provide an opportunity to recruit individuals from diverse ethnic backgrounds and lower socioeconomic status. Because the proposed program involves on-campus delivery of courses, issues of access for non-traditional students cannot be solved via a distance M.S. program approach. However, we will accommodate when possible non-traditional students such as those in the workforce who may take a longer path to completion of the M.S. degree. In particular, students may enter the program via existing partnerships of the Statistics Departments with local or Bay Area companies such as Google, MindBody JupyterLabs, etc. In these cases, we will be flexible with curriculum design and work closely with students’ supervisors to create a plan of study that is feasible within the constraints of workforce demands.
c. For master’s degree proposals, cite the number of declared undergraduate majors and the degree production over the preceding three years for the corresponding baccalaureate program, if there is one.

<table>
<thead>
<tr>
<th>Undergraduate enrollment (Fall Census)</th>
<th>Total degrees awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
<td><strong>2019/2020</strong></td>
</tr>
<tr>
<td>Statistics majors</td>
<td>176</td>
</tr>
</tbody>
</table>


d. Describe professional uses of the proposed degree program.

In 2015, the Bureau of Labor Statistics named “Statistician” as one of the fastest-growing jobs in the United States. There are countless opportunities for holders of Master’s degree in statistics. Our graduates will be equipped with a singular set of analytical skills that will make them valuable in industry, government, academia and almost every area of science. Below are some of the main career paths for prospective graduates from our program:

- Statistician (research analyst for a corporation or a federal/state/local agency, such as the U.S. Census Bureau)
- Data Scientist (for tech companies, such as Google, and other corporations)
- Biostatistician (research analyst for a corporation, such as Amgen, or a federal/state/local agency, such as the CDC or a county public health department)
- Sports statistician
- University lecturer
- MS as preparation for PhD in Statistics, Biostatistics, or Data Science

According to the Hanover Research market analysis, California employers advertised 5,365 statistics-related jobs between July 2018 and December 2018.

e. Specify the expected number of majors in the initial year, and three years and five years thereafter. Specify the expected number of graduates in the initial year, and three years and five years thereafter.

We anticipate the following student enrollments with an average degree completion time of 2 years.

<table>
<thead>
<tr>
<th>Number of Majors (Annual)</th>
<th>At Initiation</th>
<th>After 3 Years</th>
<th>After 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Graduates (Cumulative)</th>
<th>After 3 Years</th>
<th>After 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>
7. Existing Support Resources for the Proposed Degree Major Program

a. List faculty who would teach in the program, indicating rank, appointment status, highest degree earned, date and field of highest degree, professional experience, and affiliations with other campus programs. Note: For all proposed graduate degree programs, there must be a minimum of five full-time faculty members with the appropriate terminal degree. (Coded Memo EP&R 85-20)

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank/Title</th>
<th>Degree</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Andrew Schaffner</td>
<td>Professor, Chair</td>
<td>Ph.D. Statistics University of Washington, Seattle 1997</td>
<td>Public Health&lt;br&gt;Eco (sampling, monitoring, models),&lt;br&gt;Agriculture Consulting</td>
</tr>
<tr>
<td>Dr. Allan Rossman</td>
<td>Professor</td>
<td>Ph.D. Statistics Carnegie Mellon University 1989</td>
<td>Statistics education&lt;br&gt;Curriculum development&lt;br&gt;Interviews with statistics educators</td>
</tr>
<tr>
<td>Dr. Kelly Bodwin</td>
<td>Assistant Professor</td>
<td>Ph.D. Statistics University of North Carolina, Chapel Hill 2017</td>
<td>Data mining&lt;br&gt;Machine learning&lt;br&gt;Big data&lt;br&gt;Statistical computing&lt;br&gt;Applications in text analysis, social science, and biology</td>
</tr>
<tr>
<td>Dr. Matt Carlton</td>
<td>Professor</td>
<td>Ph.D. Mathematics University of California, Los Angeles 1999</td>
<td>Applied probability&lt;br&gt;Statistics education&lt;br&gt;Predictive modeling for higher-education outcomes</td>
</tr>
<tr>
<td>Dr. Beth Chance</td>
<td>Professor</td>
<td>Ph.D. Operations Research Cornell University 1994</td>
<td>Curriculum development and assessment in statistics education&lt;br&gt;Statistics education research</td>
</tr>
<tr>
<td>Dr. Jimmy Doi</td>
<td>Professor</td>
<td>Ph.D. Statistics</td>
<td>Categorical Data Analysis</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Ph.D. Institution and Specialty</td>
<td>Research Interests</td>
</tr>
<tr>
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<td>-----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dr. Samuel Frame</td>
<td>Professor</td>
<td>North Carolina State University 2003</td>
<td>Biostatistics</td>
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<td></td>
<td></td>
<td></td>
<td>Statistical Computing</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Statistics Education</td>
</tr>
<tr>
<td>Dr. Hunter Glanz</td>
<td>Associate Professor</td>
<td>Ph.D. Statistics and Applied Probability University of California, Santa Barbara 2007</td>
<td>Statistical Computing Education</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Data Science Education</td>
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<td></td>
<td></td>
<td></td>
<td>Remote Sensing</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Machine Learning</td>
</tr>
<tr>
<td>Dr. Giri Gopalan</td>
<td>Assistant Professor</td>
<td>University of California, Santa Barbara 2014</td>
<td>Hierarchical and Bayesian statistical modeling</td>
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<td></td>
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<td></td>
<td>Spatio-temporal statistics</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Applications to the natural sciences and engineering (e.g., glaciology)</td>
</tr>
<tr>
<td>Dr. Bret Holladay</td>
<td>Assistant Professor</td>
<td>Ph.D. Statistics University of California, Santa Barbara 2016</td>
<td>Theory of Estimation</td>
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<td></td>
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<td></td>
<td>Confidence Intervals</td>
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<tr>
<td></td>
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<td></td>
<td>Statistics Education</td>
</tr>
<tr>
<td>Dr. Ulric Lund</td>
<td>Professor</td>
<td>University of California, Santa Barbara 1998</td>
<td>Circular Statistics</td>
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<td></td>
<td>Motor Vehicle and Bicycle Accident</td>
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<td></td>
<td>Data Analysis</td>
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<td></td>
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<td></td>
<td>Statistical Computing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Statistical Consulting</td>
</tr>
<tr>
<td>Dr. Karen McGaughey</td>
<td>Professor</td>
<td>Ph.D. Statistics Kansas State University 2003</td>
<td>Design of experiments</td>
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<td></td>
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<td></td>
<td>Statistics education</td>
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<td></td>
<td></td>
<td></td>
<td>Statistical consulting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Applications of statistics to engineering</td>
</tr>
<tr>
<td>Dr. Zoe Rehnberg*</td>
<td>Assistant Professor</td>
<td>Ph.D. Statistics University of</td>
<td>Biostatistics and genetics</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Degree and Institution</td>
<td>Research Interests</td>
</tr>
<tr>
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<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dr. Steve Rein</td>
<td>Associate Professor</td>
<td>Ph.D. Statistics UC Berkeley 1993</td>
<td>Time series analysis and statistical applications in the biological sciences</td>
</tr>
<tr>
<td>Dr. Emily Robinson*</td>
<td>Assistant Professor</td>
<td>Ph.D. Statistics University of Nebraska at Lincoln 2022 (expected)</td>
<td>Statistical Education</td>
</tr>
<tr>
<td>Dr. Kevin Ross</td>
<td>Associate Professor</td>
<td>Ph.D. Statistics University of North Carolina at Chapel Hill 2006</td>
<td>Probability and stochastic processes and applications Probability and statistics education</td>
</tr>
<tr>
<td>Dr. Soma Roy</td>
<td>Professor</td>
<td>Ph.D. Statistics The Ohio State University 2008</td>
<td>Statistics Education - Curriculum development Design and Analysis of Experiments Statistics in Health Sciences and Social Sciences</td>
</tr>
<tr>
<td>Dr. Anelise Sabbag</td>
<td>Assistant Professor</td>
<td>Ph.D. Quantitative Methods in Education (Statistics Education Core) University of Minnesota 2016</td>
<td>Statistics education Assessment development Educational measurement Online teaching</td>
</tr>
<tr>
<td>Dr. Jeff Sklar</td>
<td>Professor</td>
<td>Ph.D. Statistics UC Santa Barbara 2003</td>
<td>Survival analysis Educational statistics and measurement Nonparametric regression</td>
</tr>
<tr>
<td>Heather Smith</td>
<td>Lecturer</td>
<td>M.S. Statistics Florida State University 1989</td>
<td>Statistical consulting and collaboration Engineering and industrial statistics Quality management Enology and viticulture research Experimental design and survey</td>
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<td>research design</td>
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</tr>
<tr>
<td>Dr. Dennis Sun**</td>
<td>Associate Professor</td>
<td>Ph.D. Statistics Stanford University 2015</td>
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<tr>
<td></td>
<td></td>
<td>Data science</td>
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<td>Statistical software</td>
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<td></td>
<td>Statistics education</td>
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<tr>
<td></td>
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<td>Audio signal processing</td>
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<tr>
<td>Dr. Allison Theobold</td>
<td>Assistant Professor</td>
<td>Ph.D. Statistics Education Montana State University 2017</td>
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<td></td>
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<td>Data science</td>
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<td>Statistics education</td>
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<tr>
<td>Dr. John Walker</td>
<td>Professor</td>
<td>Ph.D. Statistics Cornell University 1995</td>
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<td></td>
<td>Statistical computing</td>
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<td>Statistics education</td>
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<td></td>
<td></td>
<td>Linear models</td>
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</tr>
</tbody>
</table>

* New hire; expected start date Fall 2022  
** Also affiliated with Cal Poly Department of Computer Science and Google.

b. *Describe facilities that would be used in support of the proposed program.*

Cal Poly has 5.8 million square feet in 149 major buildings to support educational activities. The majority of the courses for this MS program will occur in general purpose classrooms or computer laboratories utilized by the College of Science and Mathematics. All classrooms at Cal Poly are internet (Wi-Fi and Ethernet) ready and utilize Smart Room technology, including electronic projectors or monitors.

The Statistics Department has one studio computer lab, with a capacity of 35 students at individual computer workstations.

See: Supplement 8: Strategic Enrollment Management Letter of Support

c. *Provide evidence that the institution provides adequate access to both electronic and physical library and learning resources.*

Kennedy Library computer resources:  
(http://lib.calpoly.edu/use-tech-and-print/borrow-laptops-ipads-and-more/)

See: Supplement 9: Kennedy Library Letter of Support

d. *Describe available academic technology, equipment, and other specialized materials.*

Faculty and Students have access to the following:
8. Additional Support Resources Required

a. Describe additional faculty or staff support positions needed to implement the proposed program.

Our support needs were initially determined under the assumption of 21 full-time tenured or tenure-track faculty during the academic year prior to the implementation of the MS program. At inception, we anticipated a need for one additional tenured or tenure-track faculty member (bringing the total to 22) for administrative duties, supervision of graduate research, and instruction of newly proposed graduate courses in the curriculum of the program. We also anticipated a need for an additional tenured or tenure-track faculty member in the first three to five years, to allow for growth in the M.S. program as well as the Data Science program.

As of Winter 2022, the Statistics Department consists of 21 full-time tenured or tenure-track faculty members and two newly hired tenure-track faculty members with an anticipated start date of Fall 2022. (See Supplement 6: New Position Approval.)

We do not foresee a need for any additional lecturer or staff positions in relation to the MS program in the short term.

b. Describe the amount of additional lecture and/or laboratory space required to initiate and to sustain the program over the next five years. Indicate any additional special facilities that will be required. If the space is under construction, what is the projected occupancy date? If the space is planned, indicate campus-wide priority of the facility, capital outlay program priority, and projected date of occupancy. Major capital outlay construction projects are those projects whose total cost is $610,000 or more (as adjusted pursuant to Cal. Pub. Cont. Code §§ 10705(a); 10105 and 10108).

Because the MS coursework consists primarily of elevations of existing classes, we do not anticipate a need for additional space immediately at inception.

However, the addition of the MS program - in combination with anticipated growth in the undergraduate degree program and ever-increasing enrollment in statistics service courses
– increases demand for Studio Classroom space. We anticipate a need for an additional Studio classroom within the first 3-5 years of the MS program.

c. Include a report written in consultation with the campus librarian which indicates any necessary library resources not available through the CSU library system. Indicate the commitment of the campus to purchase these additional resources.

No additional library resources are required to implement the program, nor is any such need anticipated during the first few years of the program.

d. Indicate additional academic technology, equipment, or specialized materials that will be (1) needed to implement the program, and (2) needed during the first two years after initiation. Indicate the source of funds and priority to secure these resource needs.

No additional academic technology, equipment or specialized materials are required to implement the program, nor is any such need anticipated during the first few years of the program.

9. Self-Support Programs

N/A
<table>
<thead>
<tr>
<th>ILOs</th>
<th>PLOs</th>
<th>SLOs</th>
<th>Course where SLO is assessed</th>
<th>Assessment activity used to measure each SLO</th>
<th>Assessment tool used to measure outcome success</th>
<th>Assessment schedule – how often SLOs will be assessed</th>
<th>How assessment data will be reported as evidence SLO performance criteria have been met</th>
<th>Designated personnel to collect, analyze, and interpret student learning outcome data for the program</th>
<th>Student learning outcome data dissemination schedule</th>
<th>Closing the loop strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILO 1: Think critically and creatively</td>
<td>PLO 5: Communicate effectively (written and oral) and organize/manage projects in collaborative settings (within and between disciplines)</td>
<td>SLO 2: Practice self-learning skills to maintain currency in statistical and associated computing methodology through reading, discussion, and peer presentations of current practices as reflected in statistical literature</td>
<td>STAT 599</td>
<td>Research Proposal</td>
<td>Rubric designed for each SLO.</td>
<td>Once every two years starting in year two.</td>
<td>Report on minimum percentage of students that meet or exceed standards for each SLO.</td>
<td>The thesis committee will assign and grade assessment using rubric developed for this assignment.</td>
<td>Department’s assessment coordinator will analyze rubric data.</td>
<td>The assessment committee will review the data and identify where improvement is needed.</td>
</tr>
<tr>
<td>ILO 3: Demonstrate expertise in a scholarly discipline and understand that discipline in relation to the larger world of the arts, sciences, and technology</td>
<td>PLO 9: Conduct independent learning and research</td>
<td>ILO 4: Work productively as individuals and in groups</td>
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<tr>
<td>ILO 4: Work productively as individuals and in groups</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>ILO 5: Use their knowledge and skills to make a positive contribution to society</td>
<td>PLO 1: Demonstrate mastery of core statistical theory</td>
<td>SLO 1: Serve the needs of one or more research clients or collaborators by identifying, implementing, and mathematically defending the use of appropriate statistical methodology</td>
<td>STAT 599</td>
<td>Written Thesis</td>
<td>Rubric designed for each SLO.</td>
<td>Once every two years starting in year two.</td>
<td>Report on minimum percentage of students that meet or exceed standards for each SLO.</td>
<td>The thesis committee will assign and grade assessment using rubric developed for this assignment.</td>
<td>Department’s assessment coordinator will analyze rubric data.</td>
<td>The assessment committee will review the data and identify where improvement is needed.</td>
</tr>
<tr>
<td>ILO 6: Make reasoned decisions based on an understanding of</td>
<td>PLO 2: Demonstrate proficiency in statistical methodology and data analysis</td>
<td>SLO 2: Practice self-learning skills to maintain currency in statistical and associated computing methodology through reading, discussion, and peer presentations of current practices as reflected in statistical literature</td>
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<tr>
<td>ILO 7: Use their knowledge and skills to make a positive contribution to society</td>
<td>PLO 3: Select, justify, and apply appropriate inferential and predictive methods</td>
<td>SLO 3: Build and evaluate inferential and predictive models to analyze data with both numeric and categorical responses using statistical programming</td>
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<tr>
<td>ILO 8: Make reasoned decisions based on an understanding of</td>
<td>PLO 4: Responsibly interpret results and output of statistical analyses</td>
<td>SLO 4: Complete a written thesis and oral thesis defense</td>
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<tr>
<td>ILO 9: Use their knowledge and skills to make a positive contribution to society</td>
<td>PLO 5: Communicate effectively (written and oral) and organize/manage projects in collaborative settings (within and between disciplines)</td>
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</table>

Appendix A1
<table>
<thead>
<tr>
<th>ILO 1: Think critically and creatively</th>
<th>PLO 1: Demonstrate mastery of core statistical theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILO 2: Communicate effectively</td>
<td>PLO 2: Demonstrate proficiency in statistical methodology and data analysis</td>
</tr>
<tr>
<td>ILO 3: Demonstrate expertise in a scholarly discipline and understand that discipline in relation to the larger world of the arts, sciences, and technology</td>
<td>PLO 3: Select, justify, and apply appropriate inferential and predictive methods</td>
</tr>
<tr>
<td>ILO 4: Work productively as individuals and in groups</td>
<td>PLO 4: Responsibly interpret results and output of statistical analyses</td>
</tr>
<tr>
<td>ILO 6: Make reasoned decisions based on an understanding of ethics, a respect for diversity, and an awareness of issues related to sustainability</td>
<td>PLO 5: Communicate effectively (written and oral) and organize/manage projects in collaborative settings (within and between disciplines)</td>
</tr>
<tr>
<td>ILO 7: Engage in lifelong learning</td>
<td>PLO 8: Collaborate with researchers and clients to solve data oriented problems that arise in other disciplines</td>
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<tr>
<td></td>
<td>PLO 9: Conduct independent learning and research</td>
</tr>
<tr>
<td></td>
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<tr>
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<th>Oral Defense</th>
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<tr>
<td>Report on minimum percentage of students that meet or exceed standards for each SLO.</td>
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<p>| The thesis committee and faculty members in attendance will grade assessment using rubric developed for this assignment. |
| Department’s assessment coordinator will analyze rubric data. |
| Assessment data will be report to Academic Planning and Programs. The University Academic Assessment Council will review the reports and provide feedback. Feedback will be used to improve assessment for the following year. |
| The assessment committee will review the data and identify where improvement is needed. |</p>
<table>
<thead>
<tr>
<th>ILO 7: Engage in lifelong learning</th>
<th>PLO 1: Demonstrate mastery of core statistical theory</th>
<th>Postgraduate survey</th>
<th>Survey</th>
<th>Once every two years starting in year two.</th>
<th>The graduate program coordinator will assign, administer and analyze data from survey.</th>
<th>The assessment committee will review the data and identify where improvement is needed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLO 2: Demonstrate proficiency in statistical methodology and data analysis</td>
<td>SLO 1: Serve the needs of one or more research clients or collaborators by identifying, implementing, and mathematically defending the use of appropriate statistical methodology</td>
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<tr>
<td>PLO 6: Write code for statistical applications in one or more languages</td>
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<tr>
<td>PLO 7: Gather and manage data from a variety of sources</td>
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</table>
M.S. Statistics – Statement of Support

Statistics Department Curriculum Committee

The Statistics Department Curriculum Committee strongly supports the MS in Statistics. The program, as well as each course, has been reviewed and approved by the committee. The degree program offers a comprehensive curriculum with an emphasis in real world applications, including computing and consulting. Students graduating with an M.S. in Statistics from Cal Poly State University, San Luis Obispo will be prepared to contribute immediately upon entering the workforce.

This M.S. in Statistics aligns with the mission of the Statistics Department, complementing our strong B.S. in Statistics. It provides an opportunity for both faculty and undergraduates to engage with a challenging graduate curriculum that will enhance the department, creating more opportunities for collaboration and contribution to the university and beyond. We see the implementation of this degree program as a positive contribution to our department, Cal Poly and the CSU and strongly support the implementation of this degree program.
Approval by College of Science and Math Curriculum Committee

From: Elena Keeling <ekeeling@calpoly.edu>
Sent: Thursday, January 27, 2022 7:29 PM
To: Andrew A. Schaffner <aschaffn@calpoly.edu>; Gregory Shannon Bohr <gbohr@calpoly.edu>
Cc: Kelly N. Bodwin <kbodwin@calpoly.edu>; John H. Walker <jwalker@calpoly.edu>
Subject: Re: CCC and ASCC confirmation of review for MS Statistics

Hello Andrew,

You still have approval from the CSM Curriculum Committee.

Elena Keeling
Biological Sciences Department
Cal Poly, San Luis Obispo
ekeeling@calpoly.edu

Approval by Academic Senate Curriculum Committee

From: Gregory Shannon Bohr <gbohr@calpoly.edu>
Sent: Thursday, January 27, 2022 8:15 PM
To: Andrew A. Schaffner <aschaffn@calpoly.edu>; Elena Keeling <ekeeling@calpoly.edu>
Cc: Kelly N. Bodwin <kbodwin@calpoly.edu>; John H. Walker <jwalker@calpoly.edu>
Subject: RE: CCC and ASCC confirmation of review for MS Statistics

Hi Andrew –

The Academic Senate Curriculum Committee discussed this at our meeting today, and we confirm our support for the MS Statistics proposal.

Would you like a memo to that effect, or is this email sufficient?

Best,
Greg

Dr. Gregory S. Bohr
Associate Professor of Geography, Social Sciences Department
Chair, Academic Senate Curriculum Committee
Cal Poly, San Luis Obispo
(805) 756-1322, Building 47 - 12C
# M.S. Statistics - Approved 400-Level Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Name</th>
<th>Units</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATA 402</td>
<td>Mathematical Foundations of Data Science</td>
<td>3</td>
<td>CSC 466, STAT 334, DATA 301; Concurrent DATA 401, DATA 403</td>
</tr>
<tr>
<td>DATA 403</td>
<td>Data Science Process Laboratory</td>
<td>1</td>
<td>Concurrent DATA 401, DATA 402</td>
</tr>
<tr>
<td>CSC 448</td>
<td>Bioinformatics Algorithms</td>
<td>4</td>
<td>CSC 349</td>
</tr>
<tr>
<td>CSC 466</td>
<td>Knowledge Discovery from Data</td>
<td>4</td>
<td>CSC 349</td>
</tr>
<tr>
<td>CSC 477</td>
<td>Sci and Info Visualization</td>
<td>4</td>
<td>CSC 349</td>
</tr>
<tr>
<td>MATH 406</td>
<td>Linear Algebra III</td>
<td>4</td>
<td>MATH 306</td>
</tr>
<tr>
<td>MATH 412</td>
<td>Introduction to Analysis I</td>
<td>4</td>
<td>MATH 306</td>
</tr>
<tr>
<td>MATH 413</td>
<td>Introduction to Analysis II</td>
<td>4</td>
<td>MATH 412</td>
</tr>
<tr>
<td>MATH 414</td>
<td>Introduction to Analysis III</td>
<td>4</td>
<td>MATH 413</td>
</tr>
<tr>
<td>MATH 451</td>
<td>Numerical Analysis I</td>
<td>4</td>
<td>MATH 242</td>
</tr>
<tr>
<td>MATH 453</td>
<td>Numerical Optimization</td>
<td>4</td>
<td>MATH 306 and MATH 451</td>
</tr>
<tr>
<td>STAT 410</td>
<td>Statistics Education</td>
<td>4</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 415</td>
<td>Bayesian Reasoning and Methods</td>
<td>4</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 416</td>
<td>Stat Analysis of Time Series</td>
<td>4</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 417</td>
<td>Survival Analysis Methods</td>
<td>4</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 419</td>
<td>Applied Multivariate Statistics</td>
<td>4</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 421</td>
<td>Survey Sampling and Method</td>
<td>4</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 440</td>
<td>SAS Certification Prep</td>
<td>2</td>
<td>STAT BS</td>
</tr>
<tr>
<td>STAT 441</td>
<td>SAS Adv Certification Prep</td>
<td>2</td>
<td>STAT 440</td>
</tr>
</tbody>
</table>

## Notes:

As a prerequisite "STAT BS" indicates the prerequisite courses are required as part of the BS in Statistics.

STAT 414 and 418 are deliberately omitted from this list; students considering an M.S. should enroll in STAT 550 in lieu of these courses.
**Survey of current students**

**What would be the main factors in your decision to apply or not?**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>How mathematically rigorous it is</td>
<td>I would definitely apply because I intend on pursuing my masters. I would 100% apply. No questions asked. I want to go somewhere else. Try different things. Meet new people. People keeps talking about 4+1 and get out early to get a job. I just want to challenge myself and enjoy life.</td>
</tr>
<tr>
<td>Completion Time, Faculty</td>
<td>How developed the program is and what is has to offer for a future career</td>
</tr>
<tr>
<td>If the program exists</td>
<td>GPA</td>
</tr>
<tr>
<td>quality of teaching, local work opportunities</td>
<td>Length of masters (preferably &lt;= 12 months), scope of material (more applied than theoretical)</td>
</tr>
<tr>
<td>Whether I got competitive job offers after graduation</td>
<td>I was planning on getting my masters in statistics after graduating so it would be great if it was offered here! cost and whether I need a masters</td>
</tr>
<tr>
<td>Availability</td>
<td>Funding</td>
</tr>
<tr>
<td>I would definitely apply because I intend on pursuing my masters.</td>
<td>Course offerings / cost / field of study</td>
</tr>
<tr>
<td>I would 100% apply. No questions asked.</td>
<td>if it is 4+1 program</td>
</tr>
<tr>
<td>I want to go somewhere else. Try different things. Meet new people.</td>
<td>If it's available by the time I graduate</td>
</tr>
<tr>
<td>People keeps talking about 4+1 and get out early to get a job.</td>
<td>how expensive it is, and if it would increase my chances at getting a good job</td>
</tr>
<tr>
<td>I just want to challenge myself and enjoy life.</td>
<td>I'm not looking to go get a master's degree since I'm focused on passing actuarial exams and working after graduation. If I were not pursuing an actuarial career, I would be getting a graduate degree. I would apply to Cal Poly if I were planning to get a Master's in Statistics.</td>
</tr>
<tr>
<td>It would be great to stay at Cal Poly and work with the same professors in a familiar environment</td>
<td>It would be great to stay at Cal Poly and work with the same professors in a familiar environment</td>
</tr>
<tr>
<td>I don’t know much about other statistics masters programs, so I would want to do research on other programs and apply to others also</td>
<td>Depending on the number of actuary tests I have passed</td>
</tr>
<tr>
<td>Details of the Program</td>
<td>The main factor fir me would be how long it would take, as well as the cost.</td>
</tr>
<tr>
<td>I would be more likely to apply if it was a 4+1 program.</td>
<td>If I actually decide that I want to pursue grad school</td>
</tr>
<tr>
<td>Coursework</td>
<td>The career I have in mind at the moment doesn’t require a master’s degree.</td>
</tr>
<tr>
<td>Actuarial path won’t need masters</td>
<td>I am not completely sure what I want to do yet.</td>
</tr>
<tr>
<td>If I could get a job right out of undergrad or not</td>
<td>If I want to further my education</td>
</tr>
<tr>
<td>I’m looking to apply for a PhD program, and probably not in pure statistics, so it’s kind of irrelevant for me. However, if I were planning on getting a masters in statistics, things I would consider include: is it a 2 year program or 4+1 with the stats major? What’s the curriculum like? Is it flexible (are there different</td>
<td></td>
</tr>
</tbody>
</table>
tracks or electives)? Also I would take into account the rankings of other programs.
Focus of study available
If I can do 4 + 1
I was born and raised in SLO. My family lives here.
Want to get other degree
Seeing if I want to earn a Master's degree in something other than statistics
It might be too late to apply. However I do plan to work for a little bit first so we will see
How much I am getting out of the program for how much I am paying
Cost, how important a masters degree is for stat in terms of employability, length of program
I haven't looked into other masters programs, but if this one is good and I know other people staying at Cal Poly that I like, I'll be interested.

Survey of Alumni

In your opinion, how would an M.S. in Statistics change an applicant's opportunities at your place of work?

An M.S. in (Bio)statistics with a focus on healthcare is required at a minimum for the majority statisticians at the City of Hope.
The amount of departments that they would be applicable would expand, and their starting level would likely be higher.
Having an M.S. in Statistics would give the applicant a much greater chance of being hired above Entry Level status and allow an applicant to be hired into a more technical position.
You can not apply without a Masters at a minimum.
Depending on the job they are applying for it would greatly increase their chances of getting the position. Many of my colleagues have a graduate degree of some kind.
We only have a few jobs that are specifically for statisticians. But it would greatly increase your possibility of getting such a job.
An M.S. in statistics would likely result in higher pay and more responsibility at my place of work.
Where I was before getting my PhD someone without a masters wasn't considered.
Within my company statistics is not necessarily a sought after field, the fact a potential hire has the "MS" title is an advantage merely because it is a higher level of education and knowledge.
It is a requirement to have a MS in statistics or related field
Would greatly increase an applicants chances or being offered the position. At my place of work however, a M.S. in Statistics would not increase an applicants chances any more than an MBA would.
it would increase opportunities
Work in a slightly different department doing slightly different work on the same project.
All positions on my biostatistics team require an M.S. in biostatistics or statistics to be eligible for hire.
Entry level actuarial work is highly competitive in the SF bay area. It may make the candidate stand out if the applicants have the same # of exams.
It is incredibly helpful to have an MS in statistics. It shows intelligence and a willingness to work. It also shows that an applicant thinks like a masters student.
A minimum of MS is required for the statistician title, although we do offer Research Assistant positions to BS of all type (and obviously BS in Statistics candidates have more opportunity for us than a BS in psych, chem, history, english, etc..)
Reduces the number of years of professional experience needed to reach same position as someone with a BS only

It would open more doors to research level jobs and things like experimental design.

In our company, having a Masters does not increase your chances of hire much, and is not required to work your way up in the company.

More opportunities to start at a higher position/pay. Easier to get interviews directly out of college with a master's degree

I still like to have an MS or greater when hiring a Data Scientist - I need to have an individual comfortable with going deeper into the theory behind the algorithms & have a better-rounded statistical knowledge + a little more seasoning in discussions with our customers; there are ML engineer roles that require more programming and less theory and for that, a BS is sufficient.

When hiring me they did not seem to put much weight on specific high degrees but rather knowledge and interest

The applicant would have a better opportunity working in the data analytics group of our actuarial practice.

Responsibilities change and a faster path to project forward.

Greatly improve.

It would help you meet the qualifications for data science/statistics related roles.

Applicants with a Masters degree would be more qualifies for the advanced analysis teams rather than the business analysis teams. They would have more opportunity and be able to pick which field they would want to be in.

more analysis-related opportunities, more contributions to reports/manuals/publications

You may be overqualified and salary expectations may not be in line with reality.

We only offer roles as Biostatisticians to Applicants with MS degrees. Anyone with an undergraduates degree is welcome to apply for any of the programming positions.

We don't hire analysts without at least a M.S. in a quantitative discipline. It would greatly increase the applicant's opportunities.

A monumental change. Applicants with only a B.S. are barely considered, an M.S. is pretty much required at this point.

While I've been in academia for the last 5 years, the previous 14 years were in private sector and federal govt. In both cases I think a BS only would be a tough sell for hiring unless the candidate had a lot of practical experience (5+ years of demonstrated high quality work and a healthy toolbox) i would hope they have stronger knowledge in statistics, and their resume would more easily get through to the recruiters

A master's allows opportunities in more sectors the company is involved in

For a data science position a MS would at least get your foot in the door.

Hard to say.

I lead a program for graduate students in statistics, in which I recruit, hire, and train them for full-time employment as research statisticians. When I'm presenting on campus, I make it clear that the ticket for entry into our advanced analytics groups is a Master's.

Today, machine learning and statistics are considered a specialization requiring focused training, so having a MS reduces the friction in the hiring process where you must explain your level of education and expertise in the subject.

Negligible impact

The depth of knowledge and critical thinking, in general, is higher from those with Master's than those with just a Bachelor's. Also, at least in data science, most job reqs require a PhD with a Master's being entry level.
For data engineering or business reporting, a bachelor's and business domain knowledge can go far. Data science and machine learning relies on the ability to stay up to date with recent advancements, only accessible through graduate level research papers and discussions. A lot more computer science is necessary as well.

**Top of the list of applicants**

We hire both levels of education. Masters level applicants are typically much stronger and we want more, but we take a lot of BS applicants to fill in teams of analysts. We have drastically expanded the size of our data team in the last year.

An MS would show that the applicant has a high capability to learn and be taught new concepts. My department focuses on Analytics and Reporting which requires statistical literacy, mainly in the form of providing good and informative data visualizations.

It really depends on the level of the position...

Depends on actual work experience as well. Someone with a BS and more work experience is weighted heavier than someone with an MS but no work experience.

As a high school teacher, I would additionally qualify to teach at a community college.

An elevated starting position, higher starting salary, more autonomy

They would have more opportunities, they would be considered for more technical roles (Data scientist as opposed to just analyst)

All data scientists (other than me) hold at least an M.S., I do not think that applicants with only a Bachelor's degree are considered for data scientist positions at this point.

For the most part, it would not change an applicant's opportunities. Our firm is more interested in progress with actuarial exams than an M.S in Statistics.

I work in a small department within Callaway Golf where only 1 manager is needed. Therefore, at this moment a masters in statistics would not help an applicants considerably.

might be my own personal bias, because i don't think my masters (from UCSB ) did much for me in terms of my ability to do my job incrementally beyond what I got from poly, but for me whether someone has a MS or not wouldn't have much bearing on my likelihood of getting them past the resume status or affect my hiring decision.

**Opportunity for a larger starting income**

In the Bay Area, your prospects change dramatically when you have a Masters degree. Many positions require it, and even if they don't the pay will likely be much higher. I think that if you are going for a highly technical position in SF it's becoming more of a requirement.

**More leverage for higher pay**

We look for applicants who have a wide breadth of education and experience, but a Master's degree in Statistics could only be beneficial. As we strive to be a more data-driven organization I could see this being even more impactful in the future.

It probably wouldn't - this might be a rare case but I am one of two Data Scientists in my company, neither of us has Master's degrees, but I could see how they might be helpful. However this is a startup company, they saw me as an asset not only because of my background in Statistics but also my personality, which is a major factor in a small company. I had applied to larger companies in the past and in those cases, the Master's Degree stands out more and seems more of a requirement. So it definitely would open doors for some folks.

**More time to learn about theory of stats. Under grad seems like such a small slice of the pie**

It would give them a greater chance to be hired. In my company the incentive is that they can immediately be billed out at a higher rate than those without a masters degree. (Therefor they should also get a higher starting salary even with no industry experience.)

Pay grade and types of consultations assigned. Because I have a B.S. in statistics, I'm on a separate

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**SUPPLEMENT 3**
career track than those who have an M.S. (which includes slightly lower pay). Also projects involving large grants, for example, are usually given to statisticians with a graduate degree or more experience. In my work, a masters degree is less about statistical rigor and rather more about the applicants character, work ethic and commitment to the analytical space. In some cases though, a masters could be a deterrent if the applicant lacks job experience which points to the importance of internships or industry experience between an undergrad and master programs.

N/A, I'm not pursuing a career in statistics at the moment. However, I think it would absolutely change opportunities for any statistics-related career. They would have more opportunities and a higher degree of autonomy on analysis

Yes, it would allow for a wider range of positions

Not too much. Maybe a little increase of odds.

Open up avenues to different departments of the company, to more advanced positions.

I hire for entry level positions that do not require any kind of Masters degree. If my company was specifically looking for a statistician or high level data analyst, an applicant with a MS in Statistics would be much more desirable than one without an MS.

No current place of work to comment on. However, in most jobs I have looked at a Master's degree seems to be the equivalent of 2+ years of work experience (i.e. jobs require 2+ years of experience OR a Master's degree).

It may help achieve a higher position potentially but the company I work for is small so I'm not sure how much of a difference a master's degree would make.

One would likely be able to move up and around departments more.

Hard to say, for actuaries it wouldn't make much of a difference, but for data science/analytics roles it could benefit them

If they did not have actual work experience in analytics at a company, then a person with an M.S. in Stats would be better than a B.S. in Stats, but 2-3 years working in stats/data/analytics will win over an M.S. in Stats and no work experience.

We would be able to allow someone to do work fairly independently of us, not a lot of supervision would be necessary.
Academic Senate Curriculum Committee  
California Polytechnic State University

Dear Academic Senate Curriculum Committee,

This is a letter to indicate support for the Masters of Science in Statistics program that has been proposed by the Statistics Department in the College of Science and Mathematics at California Polytechnic State University.

This program is seen as a strong extension of our undergraduate Statistics program, as well as a complement to our cross disciplinary studies minor (CDSM) in Data Science, which is a joint program between our Statistics Department and the Computer Science Department in the College of Engineering. The proposed program is applied in nature and follows our university’s philosophy of learn-by-doing. It was explicitly designed to foster the growth of our existing undergraduate and graduate programs by providing new professional pathways in this highly sought out field and faculty expertise to enhance our existing degree programs.

The MS in Statistics program has been well mapped out, the rational is solid, the proposal is strong with good documentation of the need and marketability of the program. The quality of the program is undergirded by the faculty of our Statistics Department, who are well known and respected nationally, having made significant contributions to their scholarly disciplines and having deep engagement in classroom instruction. Moreover, Hanover Research conducted a thorough market analysis reporting that this program is in high demand by both students and industry.

Taken together, we are very supportive of this MS degree program and have allotted the resources to make it a success. Indeed, we successfully recruited this year a new faculty member that will contribute to the program and as we move beyond the budget challenges presented by COVID-19 pandemic the MS in Statistics is among our college’s highest prioritized programs for adding additional faculty. We believe we can make that happen and we feel strongly that this program will benefit the entire University, by attracting new students and making them more employable. We are happy to follow up for any questions or clarifications needed.

Thank you,

Dean Wendt  
Dean, College of Science and Mathematics  
California Polytechnic State University

Kellie Green Hall  
Associate Dean  
College of Science and Mathematics
M.S. Statistics – Degree Flowcharts

Pre-requisite map of remedial courses, 400-level required courses, 500-level required courses, and new 500-level Electives:

Example Paths to Degree

2-year with maximum 12 credit remediation

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Stat 425</td>
<td>• Stat 426</td>
<td>• Stat 427</td>
</tr>
<tr>
<td></td>
<td>• Stat 331</td>
<td>• Stat 323</td>
<td>• Stat 466</td>
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<td></td>
<td>• Stat 334</td>
<td>• Stat 550</td>
<td>• 500-level elective</td>
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<table>
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<tr>
<th>Year 2</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td></td>
<td>• Stat 566</td>
<td>• Stat 590</td>
<td>• Stat 590</td>
</tr>
<tr>
<td></td>
<td>• Stat 551</td>
<td>500-level elective</td>
<td>• Stat 599</td>
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<tr>
<td></td>
<td>• Stat 590</td>
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</table>
2-year without remediation

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>Year 1</td>
<td>Stat 425, Stat 551</td>
<td>Stat 426, Stat 550</td>
<td>Stat 427, Stat 466, 500-level elective</td>
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<tr>
<td>Year 2</td>
<td>Stat 566, 500-level elective, Stat 590</td>
<td>Stat 590, Stat 599</td>
<td>Stat 590, Stat 599</td>
</tr>
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</table>

Blended program

Taken during B.S., as part of 180-credit degree requirement:

Stat 425, Stat 426, Stat 427, Stat 466

Taken during B.S., not counted towards 180-credit degree requirement:

6 electives (of which two must be 500-level)

Taken during M.S. graduate standing:

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<thead>
<tr>
<th>Year 1</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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**REQUISITION INFORMATION**

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<td>SL - Faculty Tenure Track</td>
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<tr>
<td>Job Code/Employee Classification:*</td>
<td>Instr Fac AY</td>
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<td>Job Code:</td>
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<td>Academic Affairs-Provost</td>
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<td>College/Program:*</td>
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<td>CSM-Statistics - 115300</td>
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**OPEN POSITIONS**

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</table>

**REQUISITION DETAILS**

<table>
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<tr>
<th>Reason:*</th>
<th>New Position</th>
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**SUPPLEMENT 6**
Justification for Recruitment:

The Statistics Department would like to recruit for one or more tenure-track faculty members to begin in Fall 2021 to support the development of our proposed MS program as well as campus-wide data science efforts. Expectations for both positions include high-quality teaching of courses in Statistics (major, service, and support courses) and engagement in continuing scholarly work and professional development.

These positions are necessary for three reasons. First, we need additional faculty experience and expertise to assist with the delivery of the Cross-Disciplinary Minor in Data Science; and, if approved by the Academic Senate next Fall, the Cross-Disciplinary Minor in Bioinformatics. Our department is collaborating closely with Computer Science on both of these programs. We have three faculty members extensively contributing to these programs: Kelly Bodwin, Hunter Glanz, and Dennis Sun; however, with the growth of interest in our DATA and computing courses (and our major in general) we are having difficulty meeting demand with only these three faculty delivering the computing portions of our curriculum.

Second, we have proposed an M.S. program in statistics that is ready for final campus approval and Chancellor’s office review. Our ability to deliver the proposed curriculum is contingent on a commitment to hire an additional needed tenure-line faculty member.

Third, we continue to offer more and more sections of Statistics courses to more and more students. Many of these students are in service and support courses, but we’ve also seen a marked increase in the number of students taking upper-level courses for Statistics majors and minors in the past few years (see tables below). In particular, the number Statistics majors, and the number of students taking our 300-level courses for Statistics majors and minors, has more than tripled in the past eight years. Our ability to meet demand with qualified part-time faculty is extremely difficult, largely due to our somewhat remote location and high cost of living on the Central Coast. Another tenure-track faculty member is essential to help with meeting student demand for courses.

To see the following tables, please refer to the document attached on the "Documents" tab.

Table 1: Student Credit Units (SCUs) taught by Statistics in Fall with faculty headcounts and tenure density. Note listed year is Dashboard AY, so 2012 refers to Summer 2011 – Spring 2012. (hc = headcount)

Over this period (2012-2021) five TT faculty separated from the department prior to going up for tenure. One faculty separated due to being denied tenure.

Table 2: Enrollments in courses that heavily support our minors in statistics and data science: STAT 325/305 (Introduction to Probability and Simulation), STAT 313 (Applied Experimental Design and Regression Models) STAT 323 (Experimental Design and Analysis), 324/334 (Applied Regression Analysis), STAT 330 (Statistical Computing with SAS), STAT 331 (Statistical Computing with R), and STAT 419 (Multivariate Analysis). Note listed year is Dashboard AY, so 2012 refers to Summer 2011 – Spring 2012.

* Due to budget concerns, we reduced planned offerings of several courses that support our minor this year.

Table 3: Number of STAT majors. Note listed year is Dashboard AY, so 2012 refers to Summer 2011 – Spring 2012.

During COVID, in 2020-21, we had 138 students with declared minors in statistics, 13 in Actuarial Science, and 46 in the Cross-Disciplinary Studies minor in Data Science. These number are similar to counts from 201-20 where we had 140 students minoring in Statistics, 25 minorin in Actuarial Science Preparation, and 53 in the Cross-Disciplinary Studies minor in Data Science. We had In contrast, in 2016 we had 54 students minoring in Statistics and only 3 minorin in Actuarial Science. Our Data Science program was only just introduced and had no official students at that time. We continue to expect that the number of students interested in pursuing undergraduate majors in Statistics will continue to increase in coming years, based on the rapidly increasing numbers taking AP Statistics and very favorable employment prospects.

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<td>Job Status:*</td>
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<td>Hours Per Week:</td>
<td>--</td>
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<tr>
<td>FLSA Status:</td>
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Job Summary/Basic Function:
The Statistics Department in the College of Science and Mathematics at California Polytechnic State University, San Luis Obispo, is seeking a full-time, academic year, tenure-track position, with appointment beginning September 12, 2022. Appointment at the Assistant Professor rank is anticipated; higher ranks will be considered. Rank and salary are commensurate with qualifications and experience.

Primary responsibilities will include teaching undergraduate statistics classes to non-statistics majors as well as teaching introductory and upper-level statistics and data science classes for statistics majors and minors. If a proposed master’s program in statistics is approved, responsibilities may also include teaching master’s level statistics courses and supervising graduate students.

It is expected that the successful applicant is committed to quality undergraduate and master’s level teaching, continued scholarly activity, and service to the University. Candidates with an interest in and ability to pursue scholarly projects with students at both the bachelor’s and master’s level are preferred. Applicants with data science and computing experience are especially encouraged to apply.

Minimum Qualifications:
--

Required Qualifications:
• Ph.D. in Statistics or closely related discipline.
• Demonstrated experience and commitment to student-centered learning and teaching, as well as the ability to collaboratively work in multidisciplinary settings.
• Demonstrated proficiency in written and oral use of the English language.

Preferred Qualifications:
• Experience with data science and computing.
• Experience in working with diverse populations and fostering a collaborative, supportive and inclusive environment.

Special Conditions:
The person holding this position is considered a ‘mandated reporter’ under the California Child Abuse and Neglect Reporting Act and is required to comply with the requirements set forth in CSU Executive Order 1083 as a condition of employment.

Following a conditional offer of employment, a background check (including a criminal records check) must be completed satisfactorily before any candidate may start work with Cal Poly, San Luis Obispo. Failure to satisfactorily complete the background check may result in the withdrawal of the offer of employment. Note: Cal Poly cannot deny an applicant a position solely or in part due to a criminal conviction history until it has performed an individualized assessment and linked the relevant conviction history with specific job duties in the position being sought.

Please note: Current employees who are offered positions on campus will be required to undergo a background check for any position where a background check is required by law or that Cal Poly has designated as sensitive. Sensitive positions are those requiring heightened scrutiny of individuals holding the position based on potential for harm to children, concerns for the safety and security of people, animals, or property, or heightened risk of financial loss to Cal Poly or individuals in the university community.

For health and well-being, Cal Poly is a smoke & tobacco-free campus. The university is committed to promoting a healthy environment for all members of our community.

License / Certifications:
--

Supervises Employees:*
☐ Yes ☐ No

Mandated Reporter:*
Limited - The person holding this position is considered a limited mandated reporter under the California Child Abuse and Neglect Reporting Act and is required to comply with the requirements set forth in CSU Executive Order 1083, revised July 21, 2017.

Conflict of Interest:*
None

NCAA:
☐ Yes ☐ No

BUDGET DETAILS

Benefit Eligible?:
☐ Yes ☐ No

Anticipated Hiring Range:
--

Budget/Chart field/Account string:
SL001-115300

Pay Plan:
AY

Pay Plan Months Off:
--

POSTING DETAILS

Posting Type:*
Open recruitment
Job Summary

The Statistics Department in the College of Science and Mathematics at California Polytechnic State University, San Luis Obispo, is seeking a full-time, academic year, tenure-track position, with appointment beginning September 12, 2022. Appointment at the Assistant Professor rank is anticipated; higher ranks will be considered. Rank and salary are commensurate with qualifications and experience.

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It is expected that the successful applicant is committed to quality undergraduate and master’s level teaching, continued scholarly activity, and service to the University. Candidates with an interest in and ability to pursue scholarly projects with students at both the bachelor’s and master’s level are preferred. Applicants with data science and computing experience are especially encouraged to apply.

At California Polytechnic State University, San Luis Obispo, we believe that cultivating an environment that embraces and promotes diversity is fundamental to the success of our students, our employees and our community. Bringing people together from different backgrounds, experiences and value systems fosters the innovative and creative thinking that exemplifies Cal Poly’s values of free inquiry, cultural and intellectual diversity, mutual respect, civic engagement, and social and environmental responsibility. Cal Poly’s commitment to diversity informs our efforts in recruitment, hiring and retention. California Polytechnic State University is an affirmative action/equal opportunity employer.

Required Qualifications

- Ph.D. in Statistics or closely related discipline.
- Demonstrated experience and commitment to student-centered learning and teaching, as well as the ability to collaboratively work in multidisciplinary settings.
- Demonstrated proficiency in written and oral use of the English language.

Preferred Qualifications

- Experience with data science and computing.
- Experience in working with diverse populations and fostering a collaborative, supportive and inclusive environment.

Special Conditions

The person holding this position is considered a 'mandated reporter' under the California Child Abuse and Neglect Reporting Act and is required to comply with the requirements set forth in CSU Executive Order 1083 as a condition of employment.

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For health and well-being, Cal Poly is a smoke & tobacco-free campus. The university is committed to promoting a healthy environment for all members of our community.

About the Department

The foremost mission of the Statistics Department at Cal Poly is high-quality teaching. The Statistics Department offers a B.S. in Statistics and also minor programs in statistics, data science, and actuarial preparation. An M.S. in Statistics is under review and may begin enrolling students as soon as September 2023. The department also provides support courses for most majors at Cal Poly, as well as some graduate programs, and contributes many courses to the general education program. In support of campus scholarship activities, the department also runs a statistical consulting service. The department faculty is comprised of 20 tenured/tenure-track faculty and 10 lecturers.
About the University

Founded in 1901, Cal Poly is one of only five comprehensive polytechnic universities in the nation, with approximately 22,000 undergraduates, 120 postbaccalaureate, and 900 graduate students. U.S. News and World Report has ranked Cal Poly #1 among public master's universities in the western United States for 28 consecutive years. A primarily undergraduate university, Cal Poly offers academically focused students 66 baccalaureate degrees and 27 master's degrees. Operating on the quarter calendar system, Cal Poly takes pride in its "Learn-by-Doing" approach to teaching and learning, which has characterized Cal Poly since its founding. One of the 23 campuses of the California State University system, Cal Poly has a statewide mandate as a polytechnic university. Cal Poly is one of the largest land-holding universities in the nation and uses all of its land holdings in active support of its educational programs. Cal Poly is located in historic San Luis Obispo, a city of 47,000, 12 miles from the Pacific Ocean and midway between San Francisco and Los Angeles on California's scenic Central Coast. With excellent public education resources, recreational facilities and an expanding dedication to the arts, the area is known for its scenic landscapes and extraordinarily temperate climate.

How to Apply

Interested candidates must attach (1) a cover letter, (2) resume/curriculum vitae, (3) diversity statement, (4) teaching philosophy statement, (5) research statement, and (6) a copy of unofficial graduate transcripts. Please be prepared to provide three professional references with names and email addresses when completing the online faculty application. Review of applications will begin October 13, 2021 and will continue until the position is filled.

SEARCH DETAILS

Search Committee Chair: Karen McGaughey  
Email address: kmcgaugh@calpoly.edu

Search Committee Members:  
Recipient  
SL-CSM-Statistics - 115300:  
Kelly Bodwin  
Matthew Carlton  
Ulric Lund  
Karen McGaughey  
Andrew Schaffner  
Jeffrey Sklar

SELECTION CRITERIA

1 There are no items to show

USERS AND APPROVALS

Administrative Support: Kimberly Barton  
Email address: kabarton@calpoly.edu

Compliance Panel Facilitator: --  
No user selected.

Additional viewers:  
Recipient  
No Additional viewers selected.

Hiring Administrator:* Cassie Stevenson  
Email address: csteve03@calpoly.edu

Approval process:* SL - Faculty Tenure Track Archived 2021
<table>
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<tr>
<th>Position</th>
<th>Approving Authority</th>
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<tbody>
<tr>
<td>1. Department Head/Chair:</td>
<td>Andrew Schaffner Approved Aug 30, 2021</td>
</tr>
<tr>
<td>2. College Personnel Manager:</td>
<td>Sharon Arnold Approved Aug 31, 2021</td>
</tr>
<tr>
<td>3. College Budget Manager:</td>
<td>Derek Gragson Approved Aug 31, 2021</td>
</tr>
<tr>
<td>4. Dean:</td>
<td>Dean Wendt Approved Aug 31, 2021</td>
</tr>
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<td>5. OUDI:</td>
<td>Denise Isom Approved Aug 31, 2021</td>
</tr>
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<td>6. Provost Budget Review:</td>
<td>Edward Rainbolt Approved Sep 13, 2021</td>
</tr>
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<td>7. Provost:</td>
<td>Cynthia Jackson-Elmoore Approved Sep 13, 2021</td>
</tr>
<tr>
<td>8. Academic Personnel Representative:</td>
<td>Jennifer Myers Approved Sep 13, 2021</td>
</tr>
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</table>

**HR/Faculty Affairs Representative:** Jennifer Myers

*Email address: jmyers@calpoly.edu*
From: John Hausaman <jhausaman@wscuc.org>
Date: Thursday, January 23, 2020 at 11:51 AM
To: Bruno Giberti <bgiberti@calpoly.edu>
Subject: Substantive Change Screening Determination: No further review of program needed

Dear ALO:

Thank you for submitting the Substantive Change Screening form. Following a review of the information submitted, it has been determined that no substantive change review will be necessary for the proposed program.

Program Implementation Notification Required
You are required to confirm implementation of the program in order for the program or location to be listed on theWSCUC website for purposes of financial aid eligibility verification by the U.S. Department of Education.

Login to the Accreditation Management Portal and the Master of Science in Statistics as Active within 30 days of implementation. Failure to report implementation may result in the suspension of financial aid eligibility for enrolled students.

CONFIDENTIAL COMMUNICATIONS: This email and any files transmitted with it are intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking any action in reliance upon this information by persons or entities other than the intended recipient is strictly prohibited. If you received this message in error, please contact the sender at the WASC Senior College and University Commission immediately and delete the material.

SUPPLEMENT 7
MEMORANDUM

3/3/22

TO: Andrew Shaffner, Chair, Statistics department
FROM: Joe Borzellino, Director of Enrollment Planning and Management
SUBJECT: Physical Space assessment of MS Statistics proposal

The following is a brief physical space assessment for the proposed MS in Statistics. The review is based on the submitted proposal in addition to email correspondence with the team in Statistics responsible for the proposal.

Office Space:

1. CSM has indicated that they have private faculty office space for the two new tenure-track positions they have hired.
2. Graduate Students will not need office space as they will not be serving as TAs. They will share existing collaboration/research space already assigned to CSM.

Classroom/Lab Space:

1. Proposers have indicated that in addition to their existing studio lab in 38-123, CSM is providing a new shared space 180-272 to accommodate the increase in sections offered to support the MS program.
2. Proposers indicate that they expect 2-4 additional sections per year of elective statistics courses may need to be offered in university classrooms depending on student choice. Undergraduates enrolling in these sections as electives will bring some efficiency.

Summary: Given that CSM has committed to providing most of the instructional space needed to support this proposal, there is minimal impact on university space resources. Statistics has indicated, however, that should demand for their data science curriculum grow they will have a need for an additional studio lab space. Such a space has not been identified by CSM, and until such a space is identified, management of any such increased demand may be necessary to limit adverse impacts on the MS program and existing university space resources.
To: Andrew Schaffner, Professor, Statistics Department Chair  
Date: March 1, 2022  
From: Jeanine Scaramozzino, College of Science and Mathematics Librarian  
Subject: Library Resources Supporting Proposed MA in Statistics

___

SUMMARY

The library’s existing collections and selection practices will support the proposed MS in Statistics. The curriculum proposal states that required admission to the program and degree course requirements are currently being offered within the university in Statistics, Mathematics, and Computer Software Engineering. The licensed campus GIS and data software and library licensed data sources, reference, and infrastructure support can accommodate the needs of this program. The library’s current collections budget and resources will support existing courses and may accommodate new quarter and semester Statistics courses; however, given the current budget climate is it unlikely that the library will be able to increase or enhance licensing of additional information resources for this program.

DESCRIPTION OF COLLECTIONS SUPPORTING DEGREE

Books and Journals
Collection development practices favor online materials to increase accessibility of information. In addition, Cal Poly students may borrow ebook chapters and journal articles through Interlibrary Loan Services. Physical books may be borrowed through CSU+ and books not available through CSU+ may be ordered through Interlibrary Services. The primary core and supporting Library of Congress Subject Headings include: HA – Statistics, HD – Include Business Consulting, Q – Science (General), QA – Mathematics, QA75.5-76.95 –Computer Science. 

The library has a core collection of ebooks (16,765 titles), print books (1,107 titles), e-journals (686 titles), and print journals (9 titles) in subjects that support a Master’s of Science in Statistics specifically preparing students in careers in statistics and data analysis.

Scholarly Databases and Additional Electronic Resources
The library offers the following databases and resource packages to support the program. With additional content resources listed in the topical research guides listed below. Articles that are not available directly from the library may be ordered by students, staff and faculty through Interlibrary Loan Services. Cal Poly and the Chancellors Office provision electronic resources that enable text and data mining (TDM) projects. Researchers may contact the library concerning eligible databases and any publisher requirements for TDM projects.
Topical Research Guides:

- Mathematics & Statistics: https://guides.lib.calpoly.edu/math
- Computer Science: https://guides.lib.calpoly.edu/csc
- Science Resources: https://guides.lib.calpoly.edu/cosam
- Data Sources & Repositories: https://guides.lib.calpoly.edu/datasources
- Government Information and Resources: https://guides.lib.calpoly.edu/governmentinformation

First Line Resources for Math and Statistics:

- **Web of Science (All Databases)**
  Web of Science All Databases (1864-present) provides the most comprehensive results from +10 databases that primarily cover the sciences plus social sciences and humanities. Databases include the following and more: Science Citation Index (1955-present); Social Sciences Citation Index (1956-present; Emerging Sources Citation Index (2015-present); and Arts & Humanities Citation Index (2004-present).
- **MathSciNet via EBSCOhost**
  MathSciNet is a searchable database of reviews, abstracts and bibliographic information for mathematical sciences literature, including journals, conference proceedings, and books.
- **arXiv.org**
  arXiv is a curated research-sharing platform hosting nearly two million scholarly articles in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance, statistics, electrical engineering and systems science, and economics. arXiv offers researchers a broad range of services: article submission, compilation, production, retrieval, search and discovery, web distribution for human readers, and API access for machines, together with content curation and preservation. This source provides in-progress research, preliminary data, etc. that has NOT been peer-reviewed. This platform allows for other researchers to comment and ask questions about the research before it is ready for formal publication.

First Line Resources for Data/Data Sets:

- **Statista**
  Statista is a statistics portal which provides direct access to quantitative data on media, business, finance, politics, and a wide variety of other areas of interest or markets. The database features unlimited downloads, source citations and direct use or export of results in PowerPoint, Excel PDF and Graphic (PNG) formats.
- **RAND California**
  RAND California provides information, research reports and statistics on the California economy and public policy issues, as well as access to selected policy reports, statistics, and information at the national and international scale.
- **Dataset Search via Google**
  Dataset Search is a search engine for datasets. Using a simple keyword search, users can discover datasets hosted in thousands of repositories across the Web.
- **Data.gov**
  The home of the US government's open data. A comprehensive index of datasets from the US government, including other state, local, and international
agencies. Includes tools and resources to conduct research, develop web and mobile applications, design data visualizations, and more.

First Line Resources for Computer Software Engineering:

- **Engineering Village (Compendex)**
  Compendex is a comprehensive bibliographic database of scientific and technical engineering research, covering all engineering disciplines. It includes millions of bibliographic citations and abstracts from thousands of engineering journals and conference proceedings.

- **IEEE/IET Electronic Library (IEL)**
  The IEEE/IET Electronic Library provides access to full-text documents from publications in electrical engineering, computer science, telecommunications, electronics and related disciplines, including journals, ebooks, standards, and conference proceedings from the Institute of Electrical and Electronics Engineers (IEEE), the Institution of Engineering and Technology (IET), John Wiley & Sons, and MIT Press.

- **O'Reilly Online Learning**
  Formerly known as Safari Books, O'Reilly Online Learning provides access to professional books on topics including UX design, leadership, project management, teams, agile development, analytics, and core programming. In addition to ebooks, learning paths, case studies, and video courses are available.

**cc:** Tim Strawn, Executive Director, Collection Strategies, Access & Systems
Katherine O’Clair, Associate Dean for Academic Services
Adriana Popsecu, Dean, Library Services
Sarah Lester, CENG Librarian
RESOLUTION ON AB 928 AND COMMON GE PATHWAY

Impact on Existing Policy: None

WHEREAS, Assembly Bill 928 (AB 928), the “Student Transfer Achievement Reform Act of 2021: Associate Degree for Transfer Intersegmental Implementation Committee,” was signed into legislation in October 2021; and

WHEREAS, AB 928 requires a common lower-division General Education (GE) transfer pathway that will meet transfer requirements into both the California State University (CSU) and University of California (UC) systems; and

WHEREAS, AB 928 requires the establishment of the “Intersegmental Committee of Academic Senates” (ICAS) to develop the common GE pathway for transfer students by May 31, 2023, which is expected to impact IGETC; and

WHEREAS, The Standards, Policies & Procedures for Intersegmental General Education Transfer Curriculum says “...some individual colleges or majors within a UC campus may not accept or recommend Intersegmental General Education Transfer Curriculum (IGETC) to fulfill all of their general education requirements” (UC guidance by campus/college/program); and

WHEREAS, It is likely the ICAS will recommend dropping two lower-division courses from CSU GE policy because the IGETC path for the UC requires only 11 lower-division GE courses for transfer students, unlike its stipulation of 12 courses for the CSU (note that CSU GE Breadth, which requires 13 courses, is different from IGETC in its addition of GE Area E); and
WHEREAS, AB 928 states that the UC Regents have a choice whether to adopt a
resolution regarding a singular lower division GE pathway, while the CSU
does not have a choice; and

WHEREAS, The CSU has announced that, following the development of the common
GE transfer pathway, the CSU will revise its GE breadth requirements by
summer 2024 to comply with the common GE transfer pathway; and

WHEREAS, The Academic Senate appreciates that the CSU must comply with AB 928
for transfer students but notes that the CSU does make exceptions for
transfer students using coded memoranda; and

WHEREAS, CSU Coded Memorandum ASA-2018-06 ("Systemwide Credit for External
Examinations") directs campuses how to award GE credit for AP
(Advanced Placement), IB (International Baccalaureate), and CLEP
(College-Level Examination Program) exams to GE-certified transfer
students; and

WHEREAS, The same Coded Memorandum states “Note that each CSU campus
determines how it will apply external examinations toward credit in the
major. For students not already certified in General Education (GE)
and/or American Institutions, the campus also determines how to apply
credit from such exams toward the local degree requirements”; and

WHEREAS, This Coded Memorandum clearly establishes a precedent for CSU
campuses to maintain the CSU GE curriculum for fulltime freshmen
admits, while also prescribing allowances for transfer students’ seamless
articulation of GE credits; and

WHEREAS, Cal Poly also currently waives CSU Area E for IGETC-certified transfer
students by using an additional GE course; and

WHEREAS, The Academic Senate is committed to improving transfer pathways for
transfer students both through GE and by rethinking, where possible,
major-required lower-division courses not generally available at
community colleges; therefore, be it

RESOLVED: That the Academic Senate urge the Office of the Chancellor to satisfy AB
928 compliance requirements via a 12-course IGETC pathway or,
alternatively, via coded memorandum that exempts prospective transfer
students from taking all 12 IGETC lower-division courses and, instead,
deems them to be transfer ready with only 11 lower-division courses; and
be it further
RESOLVED: That this resolution be forwarded to the Office of the Chancellor, all CSU Academic Senate Chairs, and the Academic Senate Statewide Executive Committee.

Proposed by: General Education Governance Board
Date: March 18, 2022

1 (1) Describe how this resolution impacts existing policy on educational matters that affect the faculty. Examples include curricula, academic personnel policies, and academic standards.
(2) Indicate if this resolution supersedes or rescinds current resolutions.
(3) If there is no impact on existing policy, please indicate NONE.