CALIFORNIA STATE UNIVERSITY, CHICO
Office of the Provost and Vice President for Academic Affairs
(530) 898-6101 • Campus Zip 110

MEMORANDUM

DATE: February 27, 2017

TO: David Hassenzahl, Dean, College of Natural Sciences

Cc: Rick Ford, Chair, Department of Mathematics and Statistics

FROM: Angela Trethewey, Executive Dean in the Office of the Provost

RE: **Exceptional Service Assigned Time (ESAT) Awards**

In accordance with the current CFA Collective Bargaining Agreement, faculty at Chico State may be granted release time in recognition of exceptional service they have provided to ensure student success.

The Exceptional Service Assigned Time (ESAT) awards grant faculty time for student mentoring, advising, outreach, and similar activities that go beyond the normal expectations of the faculty. Applications for these awards were submitted and reviewed by a committee in accordance with Executive Memorandum 15-001.

The ESAT committee has completed their review of the applications and have recommended the following faculty receive three (3) WTU assigned time for 2017-2018:

- Robin Donatello, Assistant Professor, Department of Mathematics and Statistics

Please consult with the department and/or program chair to ensure that this ESAT award will not interfere with the offering of critical courses or other academic program components.

Please respond with any concerns or to acknowledge your agreement with the award to Lori Fuentes (lfuentes@csuchico.edu) or x6905 by March 13, 2017.
Attached for your records is a copy of the proposal.

Assigned Time for Exceptional Levels of Service to Students

Name: Robin Donatello

Department: Biological Sciences

College: College of Natural Sciences

Narrative

Using data to make decisions is a hallmark of good business practices. Chico State is in the business of educating students, and graduation rates are one the target metric of how well the CSUC business model is performing. We are now tasked with improving these metrics by 2025, while concurrently working towards eliminating the achievement gap. To achieve these extremely important goals, we must identify barriers to student success and devise interventions or procedural and policy changes to reduce or remove these barriers.

One identified barrier to student success are "bottleneck" courses. These are courses that have high demand, and a low rate of success. This not only discourages students but also increase their time to graduation. There has been an increasing number of redesigned and other non-traditional courses being offered campus-wide in an effort to improve the passing rate of these bottleneck courses. Pedagogical alternatives to the standard lecture model have been one of the main changes proposed due to the potential high impact on the student learning experience.

These redesigns are evaluated by the instructor as part of the grant process, but often the comparisons are limited to the overall success in the redesigned course compared to the previous semester's offerings of the same course by that instructor. These evaluations do not provide a robust assessment of the true impact that these changes in pedagogy can have on student success as a whole. This proposal takes a multi-level approach to evaluating these courses by examining

- Longitudinal effects: How does student performance in a specific course translate to future courses within and external to their major?
- Historical effects: How has the variance in course performance changed over time, and how has that been affected by the changing demographics of our campus?
- Demographic effects: Do these courses benefit all students equally or are certain historically underrepresented or underserved student groups not receiving the same benefits?
- "Life" effects: Measures of success such as GPA will be normalized to allow for proper examination of how the student performed in other classes the same semester. A student who does poorly in one course but excels in all others could indicate increased difficulty in that course. That is a different situation than a student who performs poorly in all their courses during the semester, which could imply that the performance in the course under consideration may be less due to the course itself and more due to student "life" factors.

There are a large number of course redesigns and other non-traditional courses being offered campus-wide. This project will not attempt to evaluate each course individually, but instead this project will develop a customizable model and framework to evaluate the multi-level effects of specific courses in a rigorous, yet thoughtful and meaningful manner.

Efforts are currently underway to rigorously evaluate the impact of a course redesign with technology for Chemistry 111, funded as one semester of release time through a Sustaining Success grant from the Chancellor's Office. This acknowledges that the time needed to conduct a thorough and mindful analysis of a single course cannot be done within the constraints of a normal faculty workload.

This current research will serve as a single case study from which to build a more generalizable framework. The framework will be used to evaluate at least one other course, for example courses in Mathematics or Physics that have recently been redesigned.

The actual impact of this work in terms of number of students has the potential to impact thousands of students since the framework can be used to analyze the impact of any specific course, and is not just limited to courses that have been redesigned with technology. It could also be used to analyze Jumbo-hybrid models, U-courses and courses that employ Learning Assistants.

This proposal is aligned with University strategic priorities #1, 3 and 5. This analysis will provide a measure of accountability of resources entrusted to the campus for the support of high quality learning environments and redesign efforts. Not just as a rigorous demonstration of their effectiveness, which could add to the body of literature on high impact practices, but more importantly to identify any key underserved or underrepresented groups that may be differentially impacted (either positively or negatively) by these changes in pedagogy. If we observe that any group benefits from a particular pedagogical change, this could provide evidence that resources were spent wisely and that further efforts in that area are justified.

As an example, English language learners may benefit from a flipped classroom or recorded lectures at a greater rate than traditional lecture based classes due to the ability to pause and replay the video lectures in an attempt to work through the advanced terminology and vocabulary they are being introduced to. If these modifications are found to have a significantly greater impact for these students, this information would be shared with Student Affairs, specifically the professional advisors, to encourage English language learners to sign up for these types of classes that they are likely to benefit from. This information would also benefit Academic Affairs to be aware of this differential impact, to encourage additional faculty to consider redesigning their classes in a similar manner.

Data acquisition and preparation which includes merging data from various sources, careful examination for data errors and transforming the data into an analyzable format is a substantial effort. It is not uncommon for upward of 80% of the effort in any data analysis project to be spent on the data preparation phase. To build a model to address a broad question such as the one posed in this proposal requires continuous periods of dedicated time set aside to only work on this service. Once the model framework is identified, a detailed process report will need to be written so that this analysis approach can be used to fully analyze the impact of other courses.

CURRICULUM VITAE

Robin A. Donatello rdonatello@csuchico.edu

Education

2013	Dr.P.H. Biostatistics	University of California, Los Angles, Los Angeles, CA
2007	M.S. Biostatistics	University of California, Los Angles, Los Angeles, CA
2005	B.S. Biology	California State University, Chico, Chico, CA
2005	B.S. Statistics	California State University, Chico, Chico, CA

Experience

2014-present *Assistant Professor of Statistics*
Department of Mathematics and Statistics, CSU Chico

2012-15 *Database Administrator*
Keeping It Real LAC, Institute for Health Promotion and Disease Prevention Research, University of Southern California - Los Angeles County Department of Public Health, HIV and STD Program Office, Los Angeles CA

Statistical Consulting

2016 *Enloe Medical Center, Chico, CA.* Consulting and analysis for a group of Bariatric surgeons and research nurses on various effects and outcomes surrounding Bariatric surgery including analysis of a mentoring program, effect of a shift in anxiety on long term weight loss, and assessing the efficacy of ginger as a low cost nausea reduction agent.

Driscoll Berries, Red Bluff, CA. Sampling design and analysis of the effects of varying growing conditions on strawberry plants.

2015-present *Keeping It Real Together, Institute for Health Promotion and Disease Prevention Research, University of Southern California - Los Angeles County Department of Public Health, HIV and STD Program Office, Los Angeles CA.* Program evaluation of a federally funded Teen Pregnancy Prevention program.

2013-2015 *UCLA Fielding School of Public Health, Center for Health Advancement, Los Angeles CA.* Create and implement methods to improve the quality of local area estimates in LA County and forecast changes in risk factors and disease rates through 2030 using empirical Bayesian methods and MCMC simulation.

2013 *Absolute Return for Kids, Mozambique, Africa.* Assess the impact of mobile technology on patient retention in HIV care. Study design, enrollment simulation using and power analysis.

2013 *UCLA Luskin School of Public Affairs, Los Angeles, CA.* Assess the correlation between DUI arrestees with prior violent criminal histories and motor vehicle crashes resulting in death or injury. Study design, statistical consultation, and data analysis.

Academic Service

Department Level Committees

2015-16 Curriculum Committee, Member
015-16 Equipment Committee, Chair
2014-15 Statistics Hiring Committee, Member
2014-15 Student Scholarship Committee, Member

College Level Committees

2014-15 College of Natural Science Poster Committee, Member
2104-15 College of Natural Sciences Scholarship Committee, Member

University Level Committees

2014-16 Graduation Initiative Team, Member

Interdisciplinary and Outreach

2015 Co-founder of the CSUC Data Science Community of Interest

Publications & Conference Presentations

1. **Robin A. Donatello**, Christine J. De Rosa, Bret D. Moulton, Emily Q. Chung, Rachel Viola, Louise Ann Rohrbach & Abdelmonem A. Afifi (2016): Patterns of Sexual Experience Among Urban Latino and African American Ninth Grade Students, *The Journal of Sex Research*, DOI: 10.1080/00224499.2016.1164800
2. **Donatello, RA**, What's the Big Deal about Big Data? The rising importance of training new Data Scientists. Invited oral presentation at the California Mathematics Council Community Colleges 2015 Fall Conference, Dec 11-12th, 2015, Monterey, CA.
3. **Jeffries, RA**, Gray K, An examination of the factors affecting the efficacy of the Jumbo-Hybrid model for Introductory Statistics courses. Poster presentation at the Joint Statistical Meetings, August 3-9th, 2015, Seattle, WA. Abstract#316143
4. Gorbach, Pamina M. MHS, DrPH, Pines, Heather MPH, Javanbakht, Marjan MPH, PhD Weiss, Robert E. PhD, **Jeffries, Robin DrPH**, Cranston, Ross D. MD, FRCP, Fuchs, Edward J. PA-C, MBA, Hezerah, Marjan PhD, Brown, Stephen MD, Voskanian, Alen MD†; Anton, Peter MD. (2014). Order of Orifices: Sequence of Condom Use and Ejaculation by Orifice During Anal Intercourse Among Women: Implications for HIV Transmission. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 67, 4, 424-429. DOI: 10.1097/QAI.0000000000000314
5. Wallace IF, Jensen JA, **Jeffries RA**, LaChausse R, Measuring the Mission: Using Performance Measures to Assess Local and National Progress. Workshop presentation at the Fourth Annual Teen Pregnancy Prevention Grantee Conference. Presenter. June 3-6th 2014, Washington DC
6. Dittus P, DeRosa C, **Jeffries RA**, Afifi A, Cumberland WG, Chung E, Kerndt PK, Ethier K, (2014) The Project Connect health systems intervention: Linking sexually experienced youth to sexual and reproductive healthcare. *Journal of Adolescent Health* 55, 4, 528-534. DOI: 10.1016/j.jadohealth.2014.04.005
7. DeRosa C, **Jeffries RA**, Afifi A, Cumberland WG, Chung E, Kerndt PK, Ethier K, Martinez E, Loya R, Dittus P, (2012). Improving the Implementation of a Condom Availability Program in Urban High Schools. *Journal of Adolescent Health*, 51, 5, 572-579.

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December 15, 2016

TO: Selection Committee

FROM: Jeffrey Bell
Department of Biological Sciences

SUBJECT: Support Letter for Donatello "Exceptional Levels of Service to Students" Proposal

I am writing in support of Dr. Robin Donatello's proposal for an Exceptional Levels of Service to Students grant to develop an innovative and robust system for evaluating long-term effects on student success of various instructional innovations. While the CSU and CSU Chico have been actively supporting various innovative approaches to teaching in attempts to improve student success, this funding is usually too limited to support much analysis of the success of the innovations and course redesigns, especially over the long term. As a consequence, the instructor designing and implementing the change carries out most of the evaluations of these efforts, an obvious conflict of interest, and the assessments only look at what happened in that course during that semester. Having an outsider who understands data and statistics evaluate the long term effects of these changes will be very helpful to both the faculty teaching these courses and to the committees evaluating future proposals for improving our courses.

Dr. Donatello is uniquely qualified to carry out this assessment project. She was hired as part of the "Data Science" cohort a few years back and teaches statistics for the Math department. She is also on the Graduation Initiative committee and has been working on analyzing retention data for the committee. Thus, she has experience with difficult to extract data from PeopleSoft and has the data analytics and statistical background needed to analyze this data. This proposal aims to use her skills to develop assessments of how the course changes effect student

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performance in subsequent courses, whether the changes have differential effects on different student groups, and whether the rest of a students college experience effects what they get out of a course. Doing this just for CHEM 111 would be worthwhile, and having a model for how to do this will be extremely useful to the University as we continue to innovate our instructional approaches. I'm confident that Dr. Donatello will be able to develop a model for how we can assess long-term effects of instruction if given the release time to do so.

I highly recommend that Dr. Donatello "Exceptional Levels of Service to Students" Proposal. Please feel free to call if you have further questions.

Yours Sincerely

Jeffrey R. Bell

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December 14, 2016

To: The Exceptional Service Assigned Time Committee

Purpose: Letter of Acknowledgement of proposal.

This letter affirms that we are aware of Robin Donatello's proposal for release time during the 2017-18 AY to analyze the longitudinal effects of course redesign with technology, and that she is not receiving release time for the same general activity.

Rick Ford, Chair of Mathematics and Statistics

David Hassenzahl, Dean of the College of Natural Sciences