# ENGAGEMENT, INNOVATION, AND IMPACT

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# RESTRUCTURING DEGREE ROADMAPS TO IMPROVE TIMELY GRADUATION IN HIGHER EDUCATION

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*DR. XUEMEI SU, MANAGEMENT/HRM*

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**With the aspiration of transforming American higher education and economy, President Obama introduced the American Graduation Initiative in summer 2009 which calls for five million additional graduates by 2020 in order that the United States will have the highest graduation rate among nations in the world.**

According to a study by the Public Policy Institute of California (PPIC), California will have a shortage of 1.1 million college graduates to meet its economic needs by 2030. The projected workforce shortage is expected to have an adverse impact on California's future economic development. In the last decade, considerable institutional resources were spent on boosting the graduation rate and some higher education institutions have even implemented intrusive advising programs to achieve this goal. Nonetheless, the national data paint a grim picture of the four-year graduation rate. The U.S. National Center for Education Statistics reports that the four-year graduation rate for first-time, full-time undergraduate students seeking a baccalaureate degree at four-year degree-granting institutions in the 2009 starting cohort was 34% at public institutions and 53% at nonprofit private

# RESTRUCTURING DEGREE ROADMAPS TO IMPROVE TIMELY GRADUATION IN HIGHER EDUCATION

institutions. The four-year graduation rate at the national level has remained relatively stagnant all the way back to the 2000 starting cohort. Most strikingly, California State University's (CSU) four-year graduation rate is one of the lowest in the nation, an alarming 19%.

Timely graduation requires a student to successfully enroll in and complete a set of required and elective courses, the relationship of which is bound by the courses' prerequisite requirements. However, due to the fact that class capacity is oftentimes limited and wrongly timed, many students find it challenging to get the classes they need.

When we closely examine the enrollment in a full class with a waiting list, we find that some students on the waiting list need that class badly/immediately for graduation on time, while other students who are already enrolled, although also need the class, do not need the class immediately. They can actually wait for one, even two or three semesters without delaying their degree.

After some investigation, we find three culprits for this phenomenon: (1) Students don't have a clear understanding of the path to a degree and choose classes that are easy, fit their schedule, have a nice instructor, or simply because their friends take it. This causes students to end up in a class they don't actually need or don't need immediately while missing the best window to take classes that are critical to their degree progress. (2) On the side of the administration, the decision on the number of sessions/seat offering is based on the seat and session offering of the previous semester and/or one year ago, without paying much attention to admission growth, even less to the shifting of admission changes across different majors in a college. These structural changes in demand, if ignored, can throw capacity planning off much more than the demand change at the aggregate level. The reason is that aggregate level demand change is more incremental and controllable. (3) The current registration priority rule is not effective at differentiating the needs as "no need", "need" and "immediate need".

# RESTRUCTURING DEGREE ROADMAPS TO IMPROVE TIMELY GRADUATION IN HIGHER EDUCATION

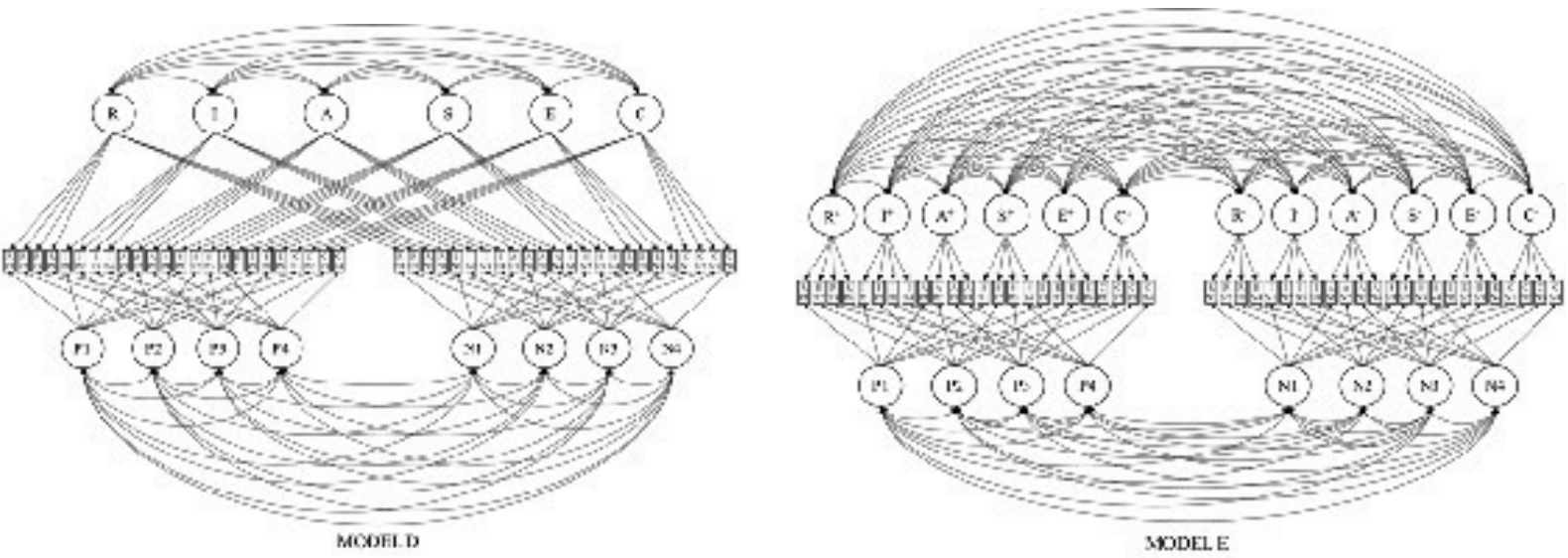
The starting point of solving these problems is to come up with a well-structured degree roadmap for every major and specifies the right courses to take by semester. The degree roadmap will better guide students' course selection and thus increase their chance of earning their degrees within the four-year time window. In our research, we propose a probabilistic model-based method to improve degree roadmap. Given a particular curricular structure, our study applies the line-balancing technique to find the optimized course sequence that can improve the timely graduation rate, while also taking into consideration of the robustness of the roadmap in terms of less susceptible to disruptions.

The optimized degree roadmap points out a clearly charted course of action for students. Through intrusive advising based upon the optimized degree roadmap, the institution can effectively guide the timing of students' demand for specific course seats.

The institution can also better forecast time-phased demand and better plan structural capacity, making seats available for the right students, at the right time. While the long-term capacity issues can only be solved by faculty hires and facility addition, an optimized degree roadmap design directly guides structural demand and facilitates structural capacity planning without adding an additional cost.

Another major contribution of our research is to quantitatively assess the timely graduation rate using the probabilistic model and Monte Carlo simulation. Given a degree roadmap, the estimated probability of successful course enrollment, and the actual course successful completion rate, we can simulate the expected 4-year, 5-year, and 6-year graduation rates, respectively. The simulation results further prove that the optimization of roadmap design can significantly improve the timely graduation rate. In addition, we run a sensitivity analysis of the timely graduation rate in response to various initiatives and policy options. The sensitivity analysis identified the most effective actionable options for administration. Our findings would stimulate a mindful conversation between state legislators, administrators, academic advisors, and students to confront the essential timely graduation challenge at higher education.

# PREDICTOR OF JOB HAPPINESS




*Model D versus Model E. Testing whether your passions one or two processes. Model E here is a better description of how people engage in their career pursuits. Figure by Phan and Rounds, 2018, Journal of Vocational Behavior, 106, pp. 27.*

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*DR. JONATHAN PHAN*

**Is Knowing What You Dislike a Better Predictor of Job Happiness?**

*Finding out what people dislike and helping them avoid these dislikes might be more important for their job satisfaction.*

My research focuses on examining how you set up your surveys can lead to very different results and often times reveal novel phenomena. For example, many students have received at some point the advice, “find a job that you love and you will never have to work a day in your life.”

Contrary to this popular wisdom, decades of research have demonstrated that interest pursuit only weakly predicts job satisfaction, if at all.

# PREDICTOR OF JOB HAPPINESS

*This paper won the best student research methods paper at the 2019 Academy of Management Conference.*

Instead, what an employee *dislikes* doing maybe a better predictor of whether they will be satisfied at work. Drawing from semantic differential techniques, I replaced bipolar response formats with unipolar affective formats (e.g., asking how much you would feel interested, anxious, bored, etc. in doing a work activity).

I show across two studies and over 700 people, that there are two processes inherent in pursing your work interests: (a) the work people are drawn to, and (b) what they are averse to—both of which need to be captured to understand the link between interest (i.e., passion), fit, and satisfaction.

Notably, interest misfit (e.g., doing work you find boring) completely dominates any satisfaction gained from doing what you love (interest fit). These findings challenge the prevailing use of interests, which focuses only on what people like doing.

In another project, I use item response tree modeling over five studies to show that people who use the middle point on scale tells us a lot more about them than just their actual selected response. Namely, they display a trait that my collaborators and I call Middle-point Endorsement Habitude (MEH).

A person high in MEH is the sort of person that does not care about and is generally lacking in effort when doing most things. We show that this MEH trait is as stable as other known personality traits, and predicts life outcomes, such as how satisfied they will be, how likely they are to slack off at work, or even how much weight they will put on—even after a gap of  three years.

What is useful about this method is that it can be obtained from any survey a person has previously taken, making it very easy to researchers and organizations to obtain and apply this research. This paper won the best student research methods paper at the 2019 Academy of Management Conference.

Images courtesy of Jonathan Phan

Assistant Professor Jonathan Phan Human Resources Management College of Business

# CALSHRM 2019 STUDENT CASE COMPETITION


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*DR. JEFF BENTLEY, MANAGEMENT/HRM*

CSULB sent two teams this year to the CalSHRM Student Case Competition. CalSHRM is the California division of the Society for Human Resource Management, the leading professional association for HRM. The CalSHRM Case Competition asks student teams to draw on their HRM coursework and practical experiences to analyze a real-life HRM business scenario, spend two weeks identifying underlying causes and developing a solution, then present and defend that solution in front of a panel of HRM Professionals at the competition itself.

# CALSHRM 2019 STUDENT CASE COMPETITION


This year's team members included Tiffany Ushijima, Bernie Lopez, and Christian Hoffman as the "Supreme Team", and Alexis Ayala, Katherine Pierce, and Arianna Arriola as the "Dream Team".

The two teams met weekly from the end of September through the end of October with Dr. Jeff Bentley, an Assistant Professor in the Department of Management and Human Resource Management, to complete a series of practice cases in preparation for the competition.

This year's Human Resource Management (HRM) Case Competition was hosted at CSU Bakersfield on November 8 and 9.

Fourteen undergraduate teams from nine different Universities in the CSU system participated in the event in total, including teams from SDSU, SJSU, CSUB, and others.

In addition to defending their case analysis and receiving developmental feedback from experienced HR practitioners, a series of presentation were held throughout the competition from speakers including Jon Decoteau (former HR Executive with Coca-Cola, Motorola, and others), Dr. John Stark (Associate Professor at CSUB), Dan Klingenberger, Esq. (Employment Attorney, spoke regarding new CA legislation), and Laura Hill (Professional Recruiter).

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