1. Purpose of the Sabbatical:

The purpose of this sabbatical proposal is to participate in academic study as a full-time student at California State University, Channel Island, a regionally-accredited institute of higher learning.

I am planning to maintain full-time status over two semesters by choosing a schedule among the following courses:

Linear Algebra (3-units)

Differential Equations and Dynamical Systems (3-units)

Quantitative Analysis (3-units)

Chemistry of the Kitchen (3-units)

Physical Chemistry II (3-units)

Biochemistry I (3-units)

2. Rational:

This sabbatical project will allow me to engage in professional growth and enhance my abilities to help students learn and progress towards their educational goals. Mathematics today is not just about how to find the correct answer to a given problem. Mathematics today is about how to connect mathematics to various, related and non-related disciplines. Although chemistry is not my primary discipline, by integrating unique aspects of chemistry into mathematics, it will enhance student understanding and engage in their development between STEM fields. For example, many Chemistry courses at Oxnard College (Chem R104, Chem R110, Chem R112, Chem R120, Chem R122, Chem R130, Chem R132, and Chem R189) have a prerequisite of mathematics; showing the vital importance and connection between Mathematics and Science. Linear Algebra and Differential Equations are another example of courses offered at Oxnard College that provide an additional linkage between Mathematics and Science. Further, students majoring in mathematics, engineering, physical sciences, economics, and other STEM and non-STEM fields often take Linear Algebra and Differential Equations to transfer to a four-year institution. My focus on chemistry will strongly support chemistry students, but these classes are required for physics, biology, and computer science majors among others. With a stronger chemistry and mathematics background, I will be

better able to prepare students for the expectations and requirements in transferring to a university setting.

a. **Professional Development:**

This proposal addresses an "academic study or professional research at a regionally-accredited institution of higher education" (Article 8.6.C). My study is an opportunity to improve and expand my knowledge of the relationship between mathematics and other STEM fields such as chemistry, physics, and engineering.

My current plan complies with the agreement (Article 3.3.B). "The unit credit(s) completed are related to the faculty member's assignment; or are obtained pursuant to a plan of study that has received prior approval by the Chancellor or his/her designee; or are unrelated to the faculty member's assignment, but have received prior approval by the Chancellor's or his/her designee." Further, "the unit credits completed are upper division or graduate level."

b. **Benefits to Students:**

My plans are to be able to integrate and present timely relevant real-world examples from the information that I will obtained from my studies into my future courses. Currently, my real-world experience is limited in scope, by completing this project I hope to offer and meet the needs of a wider range of STEM students here at Oxnard College. For students who will enroll in my classes, I anticipate to be better equipped in understanding, expectations, and requirements of the interplay between STEM fields.

c. **Benefits to College:**

I anticipate upon my Fall 2020 return, to use and create an ongoing repository of relevant examples and other information for dissemination among my colleagues or other peers. With the College emphasis on increasing the number of students in STEM fields including chemistry, physics, and engineering, the goal of my project includes better relations with STEM students and their Disciplines.

3. Past Contribution to the VCCCD:

a. Department/Discipline:

- Department Chair of Mathematics (Fall 2016-Spring 2018)

  Duties and Responsibilities:

  - Recruit, select, and orientate new faculty to the Mathematics Department
  - Development the Mathematics Department's instructional and non-instructional schedule
  - Develop and revise curriculum, including course outlines and course and catalog descriptions
  - Evaluate faculty within the department
  - Conduct department meetings and prepare and distribute notes of the meetings
  - Facilitate and participate with students, faculty, and other entities on campus
  - Maintain and improve to facilities, equipment, and supplies
  - Represent the department within the college and community
  - Engage in the process for program review and student learning outcomes
  - Facilitate faculty for substitutes for both classroom and the Math Lab
  - Supervise student workers in the math lab

- Professor of Mathematics (Fall 2006-Present)

  Duties and Responsibilities:

  - Fulfil all legal requirements of the District for employment and performance of duties
  - Offer suggestions of improvement to instruction and initiate curriculum development
  - Participate in the evaluation of faculty peers
  - Recommendations of textbook and other relevant materials
  - Submit required reports on time
  - Maintain regular office hours

- Attend assigned committees, subject-field, division, and general faculty related meetings
- Conduct assigned courses in accordance to the established course outline of record

b. College:

- Professional Development Committee (Co-Chair and Member)
- Curriculum Committee (Member)
- Academic Senate (Senator)
- Planning and Budget Council (Member)
- Program Effectiveness & Planning Committee (Member)
- Part-Time Hiring Committee (Co-Chair and Member)
- Full-Time Hiring Committee (Co-Chair and Member)
- Department Chairs/Accreditation Committee (Member)

c. District:

- Participation in discussion of District-wide evaluation of minimum qualification within Mathematics

d. Community:

- Fellow:
    - Project ALAS (Aligning Learning and Academic Success)
    - Project Acabado-STEM
    - Project PROMESAS
- Associations:
    - American Mathematics Association of Two-Year Colleges (AMATYC)
    - California Mathematics Council (CMC)
    - California Mathematics Council Community College-South (CMC³-South)

- Conferences/Forum:
    - AMATYC Annual Conferences (November 2009, 2010, 2013, 2015, 2017, and 2018)
    - Quality of Education for Minorities (QEM)-Hispanic Serving Institute (HSI) Outreach Forum (2009)
    - California Mathematics Council (CMC) Annual Conference (November 2006, 2007, and 2008)
    - California Mathematics Council Community College-South (CMC^3-South) Annual Spring Conference (March 2007 and 2008)
- Workshops:
    - Academy of Inquire Based Learning (July 2018)
    - Knewton Knerd Camp (July 2018)
    - Mathematical Association of America PREP Workshop (June 2008 and 2012)
    - ALEKS Implementation and Best Practices (2017 and 2018)

4. **Length of Service and Past Sabbatical Awards:**

I have served at Oxnard College since Fall 2006. This would be my first sabbatical awarded.