

Ventura College Sabbatical Leave Proposal

On-site research project: CE program development for forensic science, including course content creation and laboratory manual development

For Fall 2023

Submitted by Cari Lange
Anthropology Department
October 31, 2022

Instructor's Sabbatical Leave Status

Full-time hire date: August 2007

Part-time district hire date: May 2005

Previous Sabbaticals: 1, Spring 2014

Background of Sabbatical Project

When hired in 2007 the intention for my position was both to be responsible for the development of traditional anthropology laboratory curriculum and forensic science curriculum (as part of an interdisciplinary venture with the Criminal Justice Department). While during this time, my primary efforts have been focused on building and enriching Anthropology curriculum and laboratory, I have been able to develop new curriculum and content for four forensic science courses. My involvement with these forensic science courses has also included the oversight of the shared laboratory facility, sourcing and procuring equipment and supplies, development of an "in-house" laboratory manual for Introduction to Forensic Science Lab, meeting with industry experts, and continually working on the refinement and enhancement of these curricula.

It has always been the intention for our CE division to expand the forensic science offerings at VC to make this a full career and/or transfer track program. A major reason why being able to offer this program is desirable for Ventura College is because of the high proportion of women that seek training in forensic science. According to UIS data, less than 30% of the world's researchers in STEM fields are women. In fact, between all STEM fields, only in forensic science programs is there a majority in female graduates. An Associated Press review of accredited forensic science programs in the United States found more than 75% of graduates are women, a number that has been steadily increasing since 2000.

The Introduction to Forensic Science cross-listed lecture course ANTH/CJ V35 was first offered in Fall 2008. The applied laboratory portion was added in Spring 2011. Since that time, we have steadily increased the number of female students in these two courses, and the proportion of female students and success rate is the highest of all the Criminal Justice classes. In the two years prior to our Covid hiatus, the success rate for female students in V35 and V35L was 100%! Our implementation of these courses was so successful, and the statistics so good, that both Moorpark and Oxnard campus have followed suit in offering these courses as cross-listed endeavors with the Anthropology Department.

This year, I have been able to **submit curriculum for seven new courses in forensic sciences and aid in the revision of three Criminal Justice courses to be part of a Forensic Science Degree.** This program

would be the only one at the community college level within the tri-county area, and is expected to attract students from other regions.

While the development these new courses represents a significant step forward, the amount of work that needs to be done to develop the official program, course content, and supporting laboratory manuals is monumental. These tasks are solely mine to undertake as we have no dedicated faculty member for forensic science. My goal is to develop the official degree program for forensic science and once I know what articulations look like for each of the seven new courses, develop a plan for prioritizing course offerings, and begin content development and creation of supporting laboratory activities to allow for a meaningful roll out. The idea is that students could begin taking the courses with the greatest transferability as early as Spring 2024 (these will be my high priority courses), and by the time they complete the full two-year cycle, apply for the Forensic Science degree.

Purpose and Components of Sabbatical Project

Goal 1: Develop the official degree program in Forensic Science.

Component: Based on consultation with industry experts and working with local universities (CSUCI is in the early development stages of a BS degree in Forensic Science), a plan for what courses should be included in our degree and supporting curriculum has already been developed. Therefore, this stage will focus on deepening the working relationship with local universities and writing the official program for local and state approval which must include analysis of employment trends, transferability, etc. Once I know what articulations look like for each of the seven new courses currently in curriculum review, I will develop a plan for prioritizing course offerings to provide the most meaningful roll-out of classes within the scope of the program.

Please see page 5 of this document for a list of classes within the program proposal.

Goal 2: Update our self-written laboratory manual for Introduction to Forensic Science Lab.

Component: To keep up with changing trends, technologies, and safety protocols in the forensic sciences, our lab activities manual for this core course needs an update. As the cornerstone of the program, this course is of top priority. I will be modifying lab exercises to be current and relevant based on the standards from professional organizations and industry standards, to provide more current and relevant experiments that will align with the curriculum for other classes later in the forensic science sequence, incorporate updated safety standards and write procedures that match some of the newer equipment we have procured, and ensure students are developing critical skills such as accurate interpretation of results, report writing, and presentation of findings within the legal system.

Goal 3: Content development and creation of supporting laboratory activities for new courses.

Component: The initial focus will be content and activity development for courses with the highest prioritization within the degree program. The ultimate goal is to create full lesson plans for all seven new courses within the program and put together a group of cohesive activities in a lab manual format

for the courses with a laboratory component. This phase will require extensive literature review, academic study, and consultation with industry experts to strengthen my knowledge in laboratory practices, techniques, and applications in a multitude of areas within forensic science. I will also conduct and preform numerous laboratory experiments in order to choose, trouble shoot, and refine the activities to be included in the final laboratory manuals.

Value of Sabbatical Project to VCCCD and Ventura College

Based upon current nationwide trends, demand for courses in forensic science continue to grow, especially among female students. Ventura College's Forensic Science program would be the only one at the community college level within the tri-county area. By strengthening the curriculum in forensic science, Ventura College will potentially attract students from throughout the tri-county area to this truly unique career track educational opportunity. This program is designed to lead to either direct employment within forensic science at the technician level, or direct transfer to a four-year program for a scientist or analyst level position.

Value of Sabbatical Project to Ventura College Students

Program: This program is designed to lead to either direct employment within forensic science at the technician level, or direct transfer to a four-year program for a forensic scientist or analyst level position. According to UNESCO, women in traditional STEM fields publish less, are paid less for their research, and often do not progress as far as men in their careers. However, this is not the case in forensic sciences where women are thriving. This program would establish Ventura College as the premier Forensic Science program in the Tri-county area, and offer students a unique educational and career pathway in a high demand, well paying, and gender equitable field.

Course content creation and Laboratory manual development: Because this is a relatively new program to be offered at the community college level nationwide, there are not fully compatible laboratory manuals, curriculum, or applicable activities on the market for many of the courses we are proposing. By developing our own lesson plans and laboratory activities, we will be circumventing many issues that impact students and negatively affect learning: ineffective use of our existing equipment, outdated core lessons, superfluous or non-applicable activities, piecemealed activities lacking a cohesive theme and voice, lesson explanations written at a level unsuitable for our student population, and steep price point for the majority of current lab manuals in these fields.

Benefits include:

- Fully utilize Ventura College's existing cast collection, materials, and equipment.
- Avoid outdated laboratory or non-applicable procedures and design lessons appropriate for our student population

By creating a dedicated collection of activities, it can be ensured that students will be getting the maximum educational value from the most critical lessons. Lessons and activities can be easily updated when technology changes or we get a new piece of equipment or materials. Perhaps most

importantly, by creating our own laboratory manual we can design lessons and activities at the level appropriate for our student population. Students will be aided by core lessons, fundamental procedures, and pertinent activities that are current and accessible.

- Align Lessons and Activities to the Course Outline of Record and With Local Industry Practices

Many times, employing one of the existing published laboratory manuals necessitates modifying the curriculum to match the workbook's given lab objectives and activities. This can be problematic when attempting to adhere to the Course Outline of Record. This is especially the case in our Introduction to Forensic Science Lab class because our course is designed to be a cross listed life science and Criminal Justice offering. The few existing laboratory manuals for this course are written primarily for an Administration of Justice or Crime Scene Investigator type curriculum. Creating lab manuals specific to the targeted courses at Ventura College will ensure that the curriculum being covered will fully align with the Course Outline of Records. This will further strengthen articulation for these courses, ultimately benefitting our students.

- Present Activities with a Consistent Theme and Procedural Methodology

Consistent procedure is a critical component of any laboratory science, but is especially important in forensic investigations. By producing comprehensive lesson plans and lab manuals for each of the targeted courses, students will benefit from unified and similarly structured lessons. Overall, learning will be enhanced.

- Help Reduce the High Cost of Laboratory Manuals to Students

Value of Sabbatical Project to the Instructor

This project will contribute to my personal educational growth and teaching, aid the other instructors of these courses, but most of all be of great benefit to all students taking these courses for many years to come. My goal is to become a more effective instructor and scholar within the discipline of forensic science. With this opportunity, I can broaden my contribution to VC students, the college, and the community. This project will allow me to focus my attention on an area of academics that I have only modest experience. I believe completion of this project will be invaluable in my own personal growth, will greatly enhance my service to Ventura College, and will benefit the college for decades to come.

I thank the committee for their time and consideration.

Respectfully yours,



Cari Lange
Professor of Anthropology and Criminal Justice

Forensic Studies Courses:

- CJ V01 Introduction to Criminal Justice *
- CJ V04 Legal Aspects of Evidence *+
- CJ V06 Criminal Justice Report Writing and Courtroom Procedures *+
- CJ V19 Anatomy of Murder
- CJ V28 Fundamentals of Criminology
- CJ V35/L Introduction to Forensic Science and lab *
- CJ V36 Forensic Anthropology
- CJ V37 Introduction to Digital Forensics
- CJ V38 **Crime Analytics !**
- CJ V49 Ethics for the Criminal Justice Practitioner *+
- CJ V50 **Career Preparation Workshop *!**
- CJ V51 **Crime Scene Management and Processing !**
- CJ V52 **Forensic Photography and Digital Documentation !**
- CJ V54 **Fingerprint Identification !**
- CJ V56 **Trace and Pattern Evidence !**
- CJ V59 **Capstone Project *!**
 - Students may sub CJ V95 Criminal Justice Internship
- ART V70A Adobe Photoshop I
- BIOL V01/L Principles of Biology and lab *
- CHEM V21/L Introduction to Organic and Biochemistry *
 - Students may sub CHEM V01A/L General Chemistry and Lab
- MATH V04 Elementary Statistics *
 - Students may sub PSY V04 Introductory Statistics for Social and Behavioral Sci

*** Required Courses**

! New Courses

+ Modified Courses