

Request for Tenure Track Faculty

Program: Physical Science, Chemistry

Date: 10/16/15

Initiator(s): Tony Sartori, Jon Pedicino, Erik Kramer, David Bazard, with support of Biological Sciences faculty (Christopher Callahan, Jeff Hogue, Karen Reiss, Wendy Riggs, Diqui LaPenta), Del Norte Director (Rory Johnson), and the Director of Health Occupation (Alison Stull)

1. Program(s) Supported by the Discipline:

- a. Pre- and co-requisite to biology courses required for Health Occupation programs:
AS Degree, Registered Nursing
AS Degree, Paramedic/LVN to RN- Career Mobility
AS Degree, North Coast Paramedic
Certificate of Achievement LVN to RN (30 unit option)
- b. Pre- and co-requisite to biology courses required for Life Science transfer students (biology, zoology, botany, wildlife, fisheries, environmental science, etc.)
- c. AA Liberal Arts: Science (required)
- d. AA in Kinesiology for Transfer (prerequisite for Biol 7 requirement)
- e. AS in Geology for Transfer (required)
- e. AA Liberal Arts: Science Exploration (option)
- f. AA Liberal Arts: Agriculture (option)
- h. GE option in every AA Liberal Arts degree program
- i. GE option in every AS degree program
- j. CSU GE option for transfer
- k. IGETC option for transfer

2. Job Description. Separate requests are required for each position sought. Please indicate if this request is site specific and the location(s). The Assistant Professor position in Chemistry is a full-time, tenure-track position primarily located at the Eureka Campus, but with the expectation that one-day per week lab sections may be required at the Del Norte Learning Center. The successful candidate will be able to teach the full range of chemistry courses offered at the college, with an enthusiastic commitment to the diverse learning styles of community college students. Experience teaching preparatory courses for health occupations is desirable. Teaching assignments may include teaching courses through online, Tele-presence, or other distance education modalities, as well as evening and/or weekend teaching assignments. The successful candidate will be expected to carry out various departmental, district-wide, and community-related non-teaching duties such as curriculum development, student learning outcome assessment, program review, and committee work. In addition, the successful candidate

will be expected to interact regularly both with colleagues from within the Division of Mathematics, Science, and Behavioral and Social Sciences, and with colleagues throughout the District. Preferred experience: innovative use of various technologies in the classroom, teaching experience with distance education modalities, and curricular development experience.

3. Please check ONE of the following categories: Faculty Replacement Position, Growth Position or New Program/Discipline. Provide related information. (0-5 Points)

Faculty Replacement Position (check one)

- Stable or growing discipline or program needs replacement for FT faculty who have left within this academic year
- Stable or growing discipline or program needs replacement for FT faculty who have left within 1-2 years
- Stable discipline or program needs replacement for FT faculty who have left within three-four years
- Stable discipline or program can justify replacement for FT faculty who have left within five years or more
- Outside accreditation is at risk without FT hire

Provide justification and documentation. Include when the position became vacant and the incumbent to be replaced.

Full-time chemistry faculty member Paul Farnham retired in 2010, reducing the full-time chemistry faculty to one tenured professor (Tony Sartori). The previous retirement of Miles Mackey (2003) had already reduced the faculty from the previous staffing of three full-time faculty to two. These reductions were accommodated because the District was fortunate to employ a retired Cal Poly San Luis Obispo chemistry professor as an Associate Faculty. The District has also been fortunate to hire one of our former tenured faculty members (Paul Farnham) as an Associate Faculty. Attempts to find other part-time chemistry faculty have been either unsuccessful or the faculty have not been rehired due to their lack of success with courses. Unfortunately, one of our successful Associate Faculty in chemistry retired from his part-time position two years ago, leaving the program understaffed and the number of sections reduced, or not taught (e.g., organic chemistry). Attempts to hire competent part-time faculty in chemistry have continued to be unsuccessful.

Recently, the initiation of chemistry pre- and co-requisites for biology courses required for health occupation courses and the chemistry requirements for both Liberal Arts degrees and Associate Degrees of Transfer (ADTs) has increased the demand for chemistry instruction. Even with our one full-time chemistry faculty member on a high overload each semester (27-30 TLUs), and regular offerings of chemistry during the summer, we are still falling short of the demand from our students.

Growth Position (check one)

- Enrollment data over past two years indicate program is *growing*
- Enrollment data over past two years indicate program is *stable*

- Enrollment data over past two years indicate program is *declining*
- Independent marketing or other data indicate growth potential

Provide justification and documentation.

The chemistry position supports health occupation students. The fill rates in the Registered Nursing and Career Mobility program have been over 90% for the last four years. Evidence of these programs are *growing* are the waiting lists for related health occupation programs. Recently, the Biology program added a chemistry prerequisite for Biol 2 and 7, both required for students to apply to the nursing program. The fill rate for Biol 7 just precipitously dropped owing entirely to students not yet having the chemistry prerequisite. This drop in fill rate is further justification for this chemistry position. In addition, the construction of the new sciences building on the Del Norte campus is a response to the growing demand of the health occupations program. In order for these programs to succeed, they will require chemistry to support the biology course work for the programs. The expectation of this proposed chemistry position is that it will allow the chemistry faculty to support chemistry instruction for the Del Norte students through a combination of telepresence instruction and once-a-week chemistry labs on either the Del Norte or Eureka campuses.

The chemistry position also supports all science transfer students. All life science degrees require between one (fisheries, Chem 2) and three (most biology degrees, Chem 1A, 1B, and 8) semesters of lower division chemistry. The recently established TMC for Biology, upon which we are basing our ADT Biology, requires at least 2 semesters. The fill-rates for the biology courses that require chemistry is already at the 90% or higher level, and demand for chemistry will increase with new major requirements.

New Program/Discipline Position

- Program Initialization process complete
- State curriculum approval complete
- Program has grown significantly without FT faculty
- Independent marketing data suggests viability of new program

Provide justification and documentation.

4. FT/PT Ratio: Indicate which statement/s are confirmed by the data: (0 -5 points)

- Program has no full-time faculty
- FT/PT ratio below 50/50 percent (2012-2013, 2013-2014)

- FT/PT ratio below 60/40 percent (2014-2015)
- FT/PT ratio below 75/25 percent
- FT/PT ratio results in critical lack of effective oversight for associate faculty
- Reliable pool of well-qualified associate faculty is unavailable

(In the case of non-teaching faculty positions, the criteria will be the deviation from norms obtained from like institutions)

Provide justification and documentation.

The chemistry program has fluctuated between having one to three part-time instructors. The FT/PT ratio has varied from: 43.02%/56.98% (2012-2013), to 45.28%/54.72% (2013-2014), to 56.52%/43.48% (2014-2015). However, two part-time instructors from last year were not rehired due to instructional issues, and the one remaining part-time instructor has limited availability. As stated above, our most consistent part-time faculty member stopped teaching two years ago. The routine overload of the one full-time chemistry faculty is further justification that there are not sufficient chemistry faculty in the District to meet the demand for chemistry instruction.

5. Program/Student Outcomes (0 – 5 points)

Provide a narrative justifying need for full-time faculty in order to maintain and/or improve program and student learning outcomes (one-page max), based on the following: (0 – 5 points)

- Demonstrate a clear need for FT faculty in order to maintain program outcomes
- Justification demonstrates a clear need for FT faculty in order to achieve student learning outcomes

Narrative:

Chemistry is a core discipline that is central to many other sciences and to science-based areas of inquiry and science-based professions. The program outcomes for nursing degrees include the need to apply the concepts of the biological sciences (which have a chemistry pre-requisite). The program outcomes for Kinesiology require students to apply the concepts of physiological mechanisms, which require an understanding of chemistry. And, the outcomes for our science degrees (LA- Science, ADT in Geology, Biology ADT - planned) require students to apply the concepts of chemistry. The student outcomes for chemistry courses can only be achieved with competent instructors to help students master outcomes such as,

“Demonstrate knowledge of the qualitative features of chemistry including physical and chemical properties, naming and writing chemical formulas of compounds and evaluating chemical reactions”, and “Analyze the fundamental features of chemistry including measurement, mathematical conversion of measured physical properties such as mass, volume, density, pressure, temperature, solutions, concentrations and dilutions”.

In addition, the course outcomes of chemistry-based biology courses require that students are prepared to understand the underlying chemistry of outcomes such as,

“Identify and describe biological molecules and cell structures, and explain their functions”, and “Describe the molecular and cellular mechanisms that underlie organ and organ system function and homeostasis.”

Consequently, the need for quality and available chemistry instruction reaches across many different disciplinary areas of the District. It is a requirement for the LA Science degree, the Geology ADT and is listed in the ADT for Biology, which is in the process of being developed.

The link between biology and chemistry makes it an essential preparatory course for other disciplines requiring chemistry-based biology courses such as microbiology, and human physiology. Five of the District's health-related degrees and certificates require biology classes that have chemistry co- or pre-requisites. If the District is committed to providing degrees and certificates in these areas, chemistry instruction must be accessible to our students.

Our current status of chemistry instruction allows for only a few sections of Introduction to Chemistry (Chem 2) to be taught each semester, and has resulted in students delaying their goals of obtaining degrees. In addition, we are required to limit the number of section of General Chemistry (Chem 1A/1B) because of the teaching load represented by multiple sections of both Chem 2 and Chem 1A/1B. Both Chem 2 and 1A are 5-unit courses that require 2 hours and 50 minutes of lecture and 6 hours of lab each week, for each section. Two sections of either of these courses accounts for 21 TLUs of instruction, leaving very little room for teaching additional sections to meet the needs of our students.

More broadly, this request for a full-time, tenure-track faculty in chemistry is essential for the District in order to achieve two of our three Institutional Learning Outcomes:

ILO #1 Academic and Career Technical Objectives: Students will successfully acquire program outcomes and complete degrees and/or certificates.

ILO #2 Personal and Professional Development: Students will reach their career, transfer, or personal goals.

This outcome indicates if a student's individual goals are being met.

Our current level of staffing in chemistry does not allow for our students to complete the chemistry requirements in a timely fashion, which limits the ability of our students to achieve their educational goals.

REDWOODS COMMUNITY COLLEGE DISTRICT

RUBRIC FOR PRIORITIZING FULL-TIME FACULTY POSITIONS

<p>Faculty Replacement Position</p> <ul style="list-style-type: none"> • Stable or growing discipline or program needs replacement for FT faculty who have left within this academic year • Stable or growing discipline or program needs replacement for FT faculty who have left within 1-2 years • Stable discipline or program needs replacement for FT faculty who have left within three-four years • Stable discipline or program can justify replacement for FT faculty who have left within five years or more • Outside accreditation is at risk without FT hire 	Points (0-5):
OR	
<p>Growth Position</p> <ul style="list-style-type: none"> • Enrollment data over past two years indicate program is <i>growing</i> • Enrollment data over past two years indicate program is <i>stable</i> • Enrollment data over past two years indicate program is <i>declining</i> • Independent marketing or other data indicate growth potential 	
OR	
<p>New Program/Discipline Position</p> <ul style="list-style-type: none"> • Program Initialization process complete • State curriculum approval complete • New program has shown significant growth without FT faculty • Independent marketing data suggest viability of new program 	
<p>FT/PT Ratio</p> <ul style="list-style-type: none"> • Program has no full-time faculty • FT/PT ration below 50/50 percent • FT/PT ratio below 60/40 percent • FT/PT ratio below 75/25 percent • FT/PT ratio results in critical lack of effective oversight for associate faculty • Reliable pool of well-qualified associate faculty is unavailable <p>(In the case of non teaching faculty positions, the criteria will be the deviation from norms obtained from like institutions)</p>	Points (0-5):
<p>Program/Student Outcomes</p> <ul style="list-style-type: none"> • Narrative justification demonstrates clear need for FT faculty in order to maintain program outcomes • Narrative justification demonstrates clear need for FT faculty in order to achieve student learning outcomes 	Points (0-5):
<p>Other (Shared Interest)</p> <ul style="list-style-type: none"> • Shared interest determined by the Faculty Prioritization Committee. Scoring rubric will be mutually agreed and will be based on the nature of the shared interest. 	Points (0-5):
TOTAL	

