

Academic Years: \_\_\_\_\_ to \_\_\_\_\_

Name: \_\_\_\_\_ Department: \_\_\_\_\_ Date: \_\_\_\_\_

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**PROFESSIONAL GOALS/OBJECTIVES:****A. Teaching/Counseling/Librarianship comments:**

My teaching goal is to provide *all* students with dynamic instruction, clear course expectations, and interesting content that spills beyond the course and changes the way students see and think about the world. But thoughtfully creating coursework and devising new instruction tools is not enough; goals must continually be measured and assessed and content adapted to meet an ever-changing and increasingly diverse student population.

I am currently (Fall 2017) teaching CHEM 431 (the first semester of the two-semester biochemistry sequence) and one of the three CHEM 431 laboratory sections. In spring 2018, I will teach the second semester of this course and laboratory (CHEM 432). I anticipate teaching the same courses for the 2018-2019 AY. I have continued to employ specific strategies from my past teaching experiences and have also incorporated new tools to meet the specific needs of HSU students in the classroom.

Research suggests that even the top students cannot fully retain content after just 20 minutes of a traditional lecture. To this end, I regularly stop lecturing and refer to a daily lecture handout in which students perform problem-solving exercises, group work, and fact checks. I strive to engage my students by interspersing physical demonstrations, analogies, videos, and multimedia content into the lecture component of my courses. Together, I believe these tools help to create a more dynamic, relevant, and memorable learning experience for my students.

Each year, I try to improve my methods, delivery, and course content. I consider assessment to be an invaluable tool for determining what works and what doesn't work in the classroom. In the past, I have had successes and failures; assessment allows me to better understand the impact of the changes I make in the classroom and in the structure of my courses. Each semester or academic year, as appropriate, I plan to analyze the following: a) scores from the American Chemical Society standardized biochemistry examination from year to year, and b) results from student evaluations of teacher effectiveness, specifically questions 2.2-2.4 from the Instructor Rating section of the Instructor and Course Evaluation form. These questions relate to the ability of the instructor to deliver content that reinforces learning, understanding, and retention. Analysis of these assessment tools and critical reflection on the student comments will provide insight into my effectiveness as an instructor and also provide feedback on changes made to instructional delivery, content, and course structure.

One struggle that I have encountered thus far is that it is difficult to cohesively incorporate the above-mentioned tools during a lecture that meets for only 50 minutes at a time. Biochemistry is a complex subject and students will benefit from a class that allows them to fully digest such challenging information. I often find that I am unable to complete the last supplemental activity or worked problem in only 50 minutes. This troubles me because these exercises are designed to reinforce learning and to aid in material retention. I plan to address this issue by either requesting that this course become a two days per week (Tuesday/Thursday) course in 2018-2019 or by restructuring my lectures to make sure I have time for the additional exercises. Student feedback will be helpful in making this decision as well.

**B. Scholarly/Creative Activities comments:**

<sup>1</sup> Myers, Les e. "Keep ng the Garage Door Open: Understand ng and App y ng Concepts of Neurosc ence to Teach ng and Learn ng n the H gher Educat on C assroom." Co orado Mesa Un vers ty Facu ty Profess ona Deve opment Workshop. Co orado Mesa Un vers ty. August 13, 2014.

Several research projects are planned for my laboratory for the 2017-2018 academic year, with one currently underway.

1. *Investigation of the fatty acid composition of soil during the decomposition of human remains.*

The chemical nature of lipids released during the wet decomposition stage has not been studied by others but is being investigated in my research group. We have developed tools to relate phosphorus and lipid concentrations collected from the soil around decomposing human remains and will attempt to correlate those levels to the *post mortem* interval and provide a tool for forensic scientists to determine the time since death. Currently, one undergraduate researcher is spending 6 hours per week on this project.

Feedback on preliminary results will be sought at the American Academy of Forensic Science national meeting in Seattle (February, 2018).

2. *Analysis of the postmortem muscle proteome from human remains.* This proposed research project seeks to investigate the so-called “death proteins” that are expressed after death. The goal is to provide forensic researchers and field investigators with a much-needed tool for quantitatively assessing the *post mortem* interval. To initiate this research project, I shall prepare and submit an external grant proposal, most likely to the National Institute of Justice (NIJ).

3. *Isolating secondary metabolites from terrestrial myxobacteria.* To date, hundreds of chemically interesting and biologically active natural products have been isolated from a prolific class of Gram negative bacteria called the myxobacteria. The environment around HSU is undoubtedly rich in underexplored strains of terrestrial and marine myxobacteria. To further this research project, I am setting up my laboratory to support the safe and sterile isolation and propagation of bacterial cultures. Additionally, my students and I plan to collect a variety of soil and sediment samples from the area surrounding HSU to use for the isolation of productive myxobacteria.

I am also currently writing a review article (with my collaborator Phil Crews, from UC Santa Cruz). The article focuses on rare and novel functional groups in secondary metabolites isolated from marine sponges and sponge-associated microorganisms. This manuscript will be submitted to the peer-reviewed *Journal of Natural Products* (impact factor 3.281) in the near future.

C. Service comments:

I am dedicated to contributing to the HSU community, and student success and faculty development are key components of being a successful faculty member. The areas that I am most interested in providing service are in areas that help to increase student and faculty diversity and supporting underrepresented students in the sciences. As my understanding of how to support these activities at HSU increases, I plan to include such committee-related service in my career at HSU in the near future. I shall contribute to department-level committee service as needed, and will expand my service as appropriate in college-level committees as well.

Service to my field and advancing research is also an important goal for me. Since arriving at HSU, I have reviewed two scientific publications, a research article and a review article, for the *Journal of Natural Products*. I will continue to review publications for this journal as a valuable contribution to my field.

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DATE

*The following have reviewed and had the opportunity to comment upon this PDP:*

\_\_\_\_\_, Chair, Dept. of \_\_\_\_\_

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DATE

\_\_\_\_\_, IUPC Chair

\_\_\_\_\_  
DATE

\_\_\_\_\_, Dean

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