**Medicinal Chemistry and Pharmacology Option and New Minors**

**Program Overview:**

The Chemistry Department is proposing the addition of a Medicinal Chemistry and Pharmacology Emphasis Program to our curriculum. The purpose of developing this emphasis track is to diversify course offerings and provide access to specialized fields of study related to healthcare. Job growth centered around the healthcare industry is estimated to generate 3.2 million new jobs between 2008 and 2018, or 22% of all anticipated new jobs (US Bureau of Labor Statistics, 2010). This is largely in response to the nations rising elderly population. Thus, WOU has an obligation to provide educational tracks to ensure that WOU graduates will be competitive within this job market.

Student polling within the Natural Science Division, the Health Sciences, Pre-nursing, and Psychology indicates that there is strong interest in the major emphasis program with approximately 35% of BI 211 students and 35% of CH221 students expressing high interest in pursuing this major degree option if it is offered next fall (i.e. up to 44 students may enroll in the program in the fall of 2011). If student growth rates continue at the 18 to 20% annual increases seen between 2008 and 2010 within the Natural Science Division, the emphasis program would be predicted to recruit 70-100 majors over the next 5 years. Similarly, polling data evaluating interest for the Medicinal Chemistry and Pharmacology Minor Option (Health and Community Track), showed high interest among Health Science Majors (42%), Psychology Majors (23%), and Pre-nursing students (38%) for potential enrollment of up to 92 students in the program in the fall of 2011.

With very little overhead (no new hires; no additional office or lab space required; and only an increase in 7 credit hours of new coursework) we can facilitate the development of this pre-professional program. Five new proposals have been submitted to the Curriculum Committee to facilitate the development of this program, as described below.

**Medicinal Chemistry and Pharmacology Curriculum Proposals**

1. **Program Change –** **Chemistry Major: Medicinal Chemistry and Pharmacology Option** The focus of this program is to apply chemistry to the study of biologically and clinically active substances. It is multi-discliplinary degree plan designed for students interested in applying for Pharmacy School, Medical School, Dental School, or Graduate School. Chemistry Majors within this option will complete core requirements in Chemistry, Biology, and the Physical Sciences for application to advanced professional programs. This major option must be taken concurrently with the Medicinal Chemistry and Pharmacology Minor (Natural Science Track) option described below. Emphasis coursework in this area will focus on biological and pharmacological interactions of drugs and natural substances, drug design, structure-activity relationships, enzymes and receptors, drug development, and toxicology.
2. **New Minor –** **Medicinal Chemistry and Pharmacology Minor (Natural Science Track)** This minor track is being developed concurrently with a program change within the Chemistry Department, designed to add an emphasis track option for Chemistry Majors. Students selecting this track will major in Chemistry and receive a minor in Medicinal Chemistry and Pharmacology: Natural Science Track. The new degree program is being designed as a chemistry-focused pre-professional degree option for students interested in continuing their education in Medical School, Pharmacy School, Dental School, or other professional degree, as well as for students interested in graduate school.
3. **New Minor** **– Medicinal Chemistry and Pharmacology Minor (Health and Community Track)** This minor track is being developed as a healthcare-related minor option for non-chemistry major programs on campus, including Gerontology, Community Health Education, Health Sciences, Exercise Science, and Psychology.
4. **New Course** **–** **CH322 Medicinal Chemistry and Pharmacology (4 Credit Hours)**
5. **New Course –CH347 Biochemistry of Complementary and Alternative Medicines (3 Credit Hours)**