Chemistry Department Report, 2011-2012
Submitted by Arlene Courtney

I. EXECUTIVE SUMMARY

The Chemistry Department graduated three majors in 2011-2012 with two students earning the traditional chemistry degree and one student completing the requirements of the forensic chemistry option. Western's chemistry graduates are competitive in the employment market and in admissions to graduate and professional schools. At the time of graduation, one graduating major had been accepted into the graduate chemistry program at Oregon State, a second student was entering officer's training in the U.S. Navy with a first choice area of in the nuclear program and the third student will be pursuing a law degree in the area of environmental law.

As anticipated, the Ch 104-106 sequence continued its large enrollment fueled by the demand of students attending Western in the pre-nursing program. The department offered four large Ch 104 lecture sections during fall term and 11 laboratory sections. This was an increase of one laboratory section providing access to this course for 24 additional students. Since these sections did not accommodate all demand, an off-sequence lecture with two labs was offered beginning winter term cycling through the winter-spring-summer terms, and to further accommodate student demand, the entire Ch 104-106 sequence was offered during summer term. Pre-enrollment data for Fall 2012 at the time of this report shows continued demand for this sequence with all sections, both lecture and lab, 97% filled.

Enrollments in other areas remained strong including upper division courses. Ch 221 continued with complete enrollment during the fall term. Unfortunately, retention in the Ch 221-223 main sequence was low during the 2011-2012 academic year. The enrollment in the trailer Ch 221, 222 was abnormally high with 56 and 52 students, respectively, necessitating the addition of one additional laboratory section each term. Pre-enrollment data for Ch 221 for Fall 2012 shows an increased demand with 98 students in contrast to the normal 72 students section which required the addition of one new laboratory section.

Although few programs in other departments have continued to require organic chemistry (Ch 334-336), enrollments remained relatively constant due to the number of second year chemistry majors and students pursuing chemistry minors and forensic science minors. Pre-enrollment data for Fall 2012 show an increase in student numbers in Ch 334. Biochemistry (Ch 450, 451) continue to remain strong. Other upper division courses showed increased enrollments during 2011-2012 as well. For example, one of our chemistry capstone sequences Ch 461-462 had an enrollment of ten students, the largest number since the introduction of the course while six students were enrolled in Ch 407 and presented capstone seminars. Ch 345 Introduction of Toxicology was offered for the first time during Spring 2011 with a very strong enrollment of 26 students.

The Department offered a new Medicinal Chemistry/Pharmacology option as well as two new minors, Medicinal Chemistry and Pharmacology: Natural Science Track and Medicenal Chemistry and Pharmacology: Health and Community Track for the first time in 2011-2012. Response to this new program was very positive with a number of students enrolling in courses in the program. We anticipate growing enrollments in both the major and minor curricula in upcoming years. AS part of this program, a group of WOU students along with instructor Dr. Patty Flatt, are traveling to China during Summer 2012 to study traditional Chinese medicine.

In terms of program development, the Department gained approval of a new Environmental option. This option provides training in an area of intense regional interest. This option will be offered for the first time in 2012-2013. This program was developed as a response to student interest so we anticipate increasing demand for a number of upper division courses that are required in this program.

Western graduates remain competitive in gaining entrance to graduate programs. We currently have six graduates at various stages in PhD programs throughout the United States and one in medical school in the fall. Our Forensic Option graduates have been very successful in obtaining positions in the Oregon State Police (OSP) forensic labs as well as labs in other states. Open positions are few. In an average hiring situation, students have a less than 1% chance of successfully gaining a position. We currently have seven graduates working in forensic labs across the country.

Smart room technology and computers at individual workstations were available for the full year for the first time in NS 114. This allowed the integration of computer and video technology into the laboratory portions of upper division courses such as quantitative analysis, instrumental analysis and physical chemistry courses. A variety of electronic data sensors purchased at the end of the 2010-2011 academic year allowed introduction of improved experiments in the laboratories of the Ch 100 sequence and Ch 337-338. The acquisition of more of these types of sensors and small computer controlled instruments in 2011-2012 will allow further innovation in the laboratory curriculum during 2012-2013 in Organic Chemistry lab as well as Ch 461 and Ch 462.

II. ENROLLMENT TRENDS

The Chemistry Department has continued to experience growth in the Ch 104-106 sequence. To meet student demand, we added one additional laboratory section for fall term and 24 lecture seats. We also staffed an off-sequence lecture section with two laboratory sections and offered the entire three-term sequence during summer 2011. The enrollment in this course requires two adjunct faculty positions in addition to a partial load of one tenured/tenure-track faculty member. Comparison of enrollments for Fall 2007 with those of Fall 2010 shows the rapid growth that has occurred in this service sequence.

	Total Ch 100 sequence
Fall 2007	132
Fall 2011	265

During the period 2007 to 2011, this sequence for fall term has increased from one Ch 104 lecture section with three labs to four large lecture sections with eleven labs and one fall Ch 106 lecture section not existing in 2007. The total enrollment/pre-enrollment for Ch 104-106 in summer 2011 at the time of this report is 38 students. This enrollment has held relatively constant for a three year period.

Enrollment in Ch 221 was increased from the abnormally low numbers in Fall 2010. The Ch 221 pre-enrollment for Fall 2011 shows a closed enrollment of 98 students with 31 students enrolled in the 2011-12 Ch 223 off-sequence course. This represents the largest enrollment ever in this sequence. We hope that the strong enrollments in this introductory science majors' course will lead to increased future enrollments in upper division offerings.

Upper division courses showed either steady or increased enrollments. Ch 334-336 enrollments have remained steady over a four-year period although the requirement of this course in Biology programs other than pre-professional (medical fields) programs has been removed. We experienced increased enrollments in Ch 312, 313, and 340. Two new courses Ch 361 (Energy in Perspective) and Ch 347 (Biochemistry of CAM) as well as Ch 371 (Environmental Chemistry) which had not been offered in a number of years showed good enrollments with 13 13, and 11 students respectively.

III. SUMMARY OF PROGRAM CURRICULUM CHANGES

Please provide a BULLET summary of program curriculum changes that were initiated this past year. In your summary, provide a brief short title/description of the change, the status of the change (options: proposed, final approval pending, approved, in new catalog), and a list of program outcomes to which the change is linked.

- A new major degree option in Environmental Chemistry was approved (new catalog).
- A new minor in Environmental Science was approved (new catalog).

IV. PROGRAM ASSESSMENT ACTIVITIES AND RESULTS

Provide a BULLET summary of program assessment activities and results from the past year, include evidence that the assessment activities are leading to the improvement of teaching and learning. Include Embedded Assessment Results, Other embedded approaches, and Exit and Proficiency Exams.

The Chemistry Department utilizes both formative and summative methods of assessment to determine how well the program meets our student outcome goals.

Formative Assessment

- Traditional methods including quizzes and exams taking the form of essays, multiple choice, true/false, and problem solving
- In class assessment using clicker technology
- Individual and group oral presentations
    - poster presentations
    - powerpoint presentations
- Significant writing component including
    - laboratory notebooks
    - formal laboratory reports
    - annotated bibliographies
    - abstracts
    - web page development
- Critical thinking skills are tested via the solving of laboratory unknowns and the development of research questions

The style and level of formative assessment varies with the type of course content and the instructor.

Formative Assessment highlights:

- The use of clickers in lectures to give immediate feedback of the level of understanding of a topic being discussed which allows the instructor to adjust the lecture and increase student learning. Clickers were used in each lecture, and student progress tracked in Ch 334-336 and 450, 451. Clickers were employed by three of the four instructors in the Ch 104-106 sequence and one instructor in Ch 221-223.
- The Ch 334-336 sequence was assessed through the administration of the American Chemical Society standardized organic chemistry examination, and the results compared to national norms. Within the OUS system, performances at the 50th percentile or above

are considered to show successful mastery of organic chemistry at the upper division level. The results for the Ch 336 students in Spring 2012 were lower than those earned in previous years with only half of the students in the class scoring at or above this level. One student scored in the 88th percentile while another scored in the 91st percentile.
- Use of embedded GRE and MCAT style questions within the CH 450/451 exam material to gauge the proficiency of these students in the area of biochemistry for entry into professional and graduate school.

Summative Assessment

Summative assessment is accomplished via capstone courses and a national, standardized exit exam. Students are required to complete two capstone offerings Ch 461/462 (a two term, inquiry-based laboratory course) and Ch 407 (presentation of a public literature or research seminar). Ch 461/462 is offered alternate years and was not offered in 2011-2012.

- Senior seminars are presented during the Academic Excellence Showcase and evaluated by a panel of judges using a scoring guide. The panel of judges has been identical for the last several years allowing direct comparison of the seminar ratings. The compilation of judging panel scores showed this year's seminars to be well done both in the quality of the organization, oral presentation and in the area of depth of knowledge of the topic. The mean overall score was 173/200 (range 166-185) compared to a mean of 179/200 (range 170-190) for 2011-2012; 189/200 (range 173 – 198) for 2009-2010 and a mean of 171/200 (range 130-192) for 2008-2009.
- The ETS Field Test for Chemistry was administered to graduating students for the three years prior to 2010-2011. The exam results from 2009-2010 became available during the 2010-2011 reporting period and will be discussed here. There were four students who took the exam in 2009-2010, three graduating in spring 2011 and one student graduating in winter 2011. The mean of this student sampling based on national norms was a 70th percentile with one student scoring in the 90th percentile. This exam is not a perfect fit for assessing WOU chemistry graduates due to the coursework differences existing within the Department's two degree options. These curricular differences are necessary for providing appropriate career preparation in the two options. The ETS exam contains a significant biochemistry component which fits the students in the Forensic degree option (required course) but not those in the traditional program where it is can be taken as elective if desired. The results for 2009-2010 clearly show this as students taking the exam scored in the 10th percentile in the area of biochemistry. This was not an unexpected result as, of the four students in the sample, only one had taken a course in biochemistry. On the other hand for this group of graduates, the institutional mean in the area of inorganic chemistry was the 85th percentile. This was a function of the fact that three of the four students in the testing sample had completed courses in advanced inorganic chemistry, a course not required or even recommended for the Forensic Option. The ETS exam contains a subset of questions assessing critical thinking skills. The mean of Western students in the area of critical thinking was the 70th percentile. We find this to be a positive assessment as teaching students how to evaluate and think critically is the most important skill we can give them for success in their ultimate careers.
- In 2011-2012 for the second year, we administered the American Chemical Society diagnostic examination to assess the skills expected of an ACS certified chemist. Although Western's chemistry program is not ACS certified, this exam appears to be a

better tool for assessing problem-solving skills than the ETS exam we administered previously. This exam requires students to apply chemical concepts from several core chemistry areas to proposed scenarios rather than answer the type of single subject-oriented objective questions found in the ETS assessment tool. This test was in its fourth year of national use in 2011-2012. The examination was administered to the one student were graduating in June 2012 who scored in the 88th percentile (the other two graduating seniors completed this exam requirement in 2010-2011).

V. SWOT ANALYSIS

a. Strengths *(Key words: capabilities, resources, assets, marketing, innovative aspects, value, quality)*

- The Chemistry Department is composed of three tenured, one tenure-track, two full-time adjuncts, one part-time adjunct and two specialty adjuncts from the Oregon State Police crime laboratory. This faculty is capable and versatile with each member able to teach in more than one area within the program and is the department's most valuable resource.
- One strength of the department is the commitment of the faculty to integrate innovative activities and projects into the curriculum.
    - Students work on research projects as part of laboratory coursework
    - Innovative use of technology
        - Project-based content learning through video production, web authoring, computer application design, etc
        - Use of clicker methodology to assess student learning during lecture
        - Hands on use of laboratory instrumentation including the opportunity to set up and learn how to operate instruments from manuals, etc.
- WOU possesses the only program within the OUS system that is uniquely designed to train students in the area of Forensic Chemistry while using OSP professionals to teach the techniques currently used in the working forensic lab.
- The Department will be the only chemistry program within the OUS system offering a unique concentration in pharmacology and medicinal chemistry and environmental chemistry at the undergraduate level.
- The quality of WOU chemistry graduates is demonstrated by competing favorably for employment within the region
- The quality of WOU chemistry graduates is demonstrated by success in graduate programs. We currently have graduates pursuing advanced degrees at Oregon State University, the University of Utah, Oklahoma State University, Colorado State University, the University of Oregon and the John Jay College of Criminal Justice (the foremost graduate program in forensics in the U.S.)

b. Opportunities *(Key words: market developments, industry trends, nice markets, innovation, partnerships)*

- The opportunity to attract students in pre-nursing by packaging current forensic course offerings as well as a new course offerings in toxicology/pharmacology into a 12-hour upper division block that could be used in the nursing program to prepare students for the rapidly developing area of Forensic Nursing.
- Have the opportunity to upgrade our offerings in the areas of biochemistry, toxicology, medicinal chemistry and pharmacology to prepare students for graduate work in these areas.
- Have the opportunity to attract students into the Chemistry Department with the newly approved Environmental Chemistry Option.
- Continue our interaction with the OSP crime lab by integrating lab experts into our curriculum and maintaining student intern positions within the laboratory. After working with OSP professionals, our students fare well in acquiring forensic employment within the system in an area that has a limited employment market.
- With new computer acquisitions, we have the opportunity to further expand our use of technology in the classroom and laboratory.
- Construction of the new DeVolder Family Science Center will provide the Chemistry Department with totally updated facilities and opportunities for continued program growth.

c. Challenges *(Key words: market demand, sustainability, obstacles, weaknesses)*

- Finite resources for maintenance of the Department's instrument holdings, upgrading of instruments to state-of-the-art models and acquisition of expensive forensic instrumentation and basic chemical instrumentation such as a nuclear magnetic resonance spectrometer. Such instrumentation frequently costs in excess of $100,000 for the initial purchase and brings with it ongoing operational costs. Construction of the new DeVolder Family Science Center will help catalyze funding for equipment upgrades and provide new space for housing instrumentation.
- There is a limited market demand for forensic specialists. This challenge is met within the curriculum by providing our Forensic Option majors with the skills needed to be marketable as bench chemists.
- To accommodate any further growth of the Ch 104-106 sequence to meet the demand of the pre-nursing program without making sacrifices in other programmatic areas.
- Weakness in the area of Quality Assurance/Quality Control training within our curriculum. This is an area that would increase the desirability of our students to potential employers.
- Construction of the new DeVolder Family Science Center will require much additional work outside already packed faculty/staff schedules to make the new facility functional. It is anticipated that there will be growing pains associated with the development of and the move to the new instructional space.

d. Vulnerabilities (*Key words: gaps in capabilities, financials, cash flow, supply chain, disadvantages)*

- Reliance on adjunct personnel to meet the demands of pre-nursing program students in the Ch 104-106 sequence. This reliance places us in jeopardy due to the volatile nature of such teaching positions. For example, we lost one excellent adjunct instructor when a more lucrative industrial position became available during the 2009-2010 academic year. It also has become necessary to hire a third part time adjunct to cover Ch 100 classes for Fall 2012.
- Added pressures to increase enrollments in upper division electives. Cancelling courses that are offered in an alternate-year mode is damaging to students in programs such as the Environmental Studies minor, and removes the ability of students to explore some of the non-core areas of chemistry. Students have commented that they do not want to register for some upper division electives due to the fear of those courses being cancelled due to low enrollment numbers.

VI. PROGRAM PLANNING AND INITIATIVES

Please provide a BULLET summary of any program plans or development initiatives that are in the works.

- We have administered the ACS exam for organic chemistry at the end of the three-term sequence to assess the learning of WOU students relative to national norms for more than six years.

  Planning: Review a series of assessment exams available for measuring learning relative to national norms for other courses in our program. We will evaluate how closely those exams align to the course content taught in the 10-week quarter system as many exams are geared for the 15-week semester system. The ACS assessment exams are available for the following course offerings:
  - General Chemistry (for Ch 221-223 sequence) – exams available for measuring learning on a conceptual level, traditional (algorithmic) style or a pairing of the two approaches. Exams are available for evaluating on a term-by-term basis or for use at the end of the full year sequence.
  - General, Organic, Biochemistry (for Ch 104-106 sequence) – exams available for use at the end of the full year sequence or as the subsets of general, organic and biochemistry. National norms are only available for the full year exam.
  - Biochemistry – an exam available for a one semester course that might be an appropriate instrument to assess our two term course sequence.
  - Analytical Chemistry
  - Instrumental Analysis
  - Physical Chemistry – exams available to evaluate topical portions of physical chemistry content as well as a comprehensive exam. There is no exam that fits the abbreviated Ch 340 course in the Forensic and Medicinal Chemistry Options.

- We will continue to monitor the performance of students for several years using the American Chemical Society diagnostic exam as an exit exam for assessing the skills needed for our graduates to be successful chemists.

Planning:

- Administer this exam for a 5-year period and evaluate the results as they relate to our programs (2011-2012 was the second year of use).
- Investigate possibilities of making a student exam score part of that student's permanent university record to encouraging students to prepare for taking the exam like they prepare for taking the GRE, MCAT etc.

- Investigate possible ways to assess skills of students seeking entrance to the 100 and 200 sequences.

  Planning:

  - Review commercially available diagnostic exams such as
    - The California Chemistry Diagnostic Test for Undergraduate Placement (diagnostic placement exam created by faculty from the University of California)
    - The Toledo Exam (an exam in three parts assessing math competency, general chemistry knowledge and specific primarily descriptive chemistry knowledge)
  - Investigate the creation of a WOU specific exam
  - Introduce a one-term "prep-chemistry" course for students who do not have skills for success in the Ch 200 sequence which would prepare these student to begin the sequence in the winter term trailer course.

- Evaluate the Forensic Chemistry Option curriculum to ensure that the coursework provided at WOU follows the American Academy of Forensic Sciences (AAFS) guidelines.

  Planning:

  - Investigate the possibility for obtaining accreditation of our program from the AAFS.

VII. OTHER ITEMS

Student Successes:

Chemistry graduates in graduate or professional programs

Cory Perkins (Oklahoma State University, Chemistry PhD)
Alvin Gatimu (Oregon State University, Material Science PhD)
Dale Purcell (John Jay College of Criminal Justice, Forensic Science PhD)
Jennifer Blaser (Colorado State University, Chemistry PhD)
Tyrone Morato (Oregon State University, Chemistry-Material Science MS)
Christina Demke (University of Utah, completed Chemistry MS)
Dallas Swanson (Oregon Health Sciences – medical school)
Troy Vaden (Oregon State University, Chemistry PhD)

Notable Scholarship Activities:

- Patrica Flatt, T. Mahmud, et. Al. had a paper entitled “Evolutionary Divergence of Sedoheptulose 7-Phosphate Cyclases Leads to Several Distinct Cyclic Products” accepted for publication in the Journal of the American Chemical Society.
- Patricia Flatt made a Poster Presentation entitled, "Isolation of Halogenated Metabolites from *Frankia alni*" at American Society of Pharmacognosy Annual Meeting, 2011.
- Patricia Flatt attended a traditional Chinese medicine workshop at the International Red Cross TCM Hospital in Huaihua, China during Summer 2011.

VIII. PUBLIC RELATIONS ITEMS FOR PROGRAM PROMOTION

List any notable faculty, student, or program accomplishments that you would like to showcase in public relations outreach.

- A new degree option in Environmental Chemistry added to the Chemistry major. This program will prepare students to work in an area of great regional interest.

APPENDIX 1. FACULTY AND STUDENT ACCOMPLISHMENTS

Provide bullet line items related to individual faculty and student achievements.

I. FACULTY AND STAFF ROSTER

Dr. Arlene Courtney, Professor and Department Chair
Dr. Pete Poston, Professor
Dr. Rahim Kazerouni, Associate Professor
Dr. Patricia Flatt, Assistant Professor
Dr. Raymond Dandeneau, Adjunct
D. Spence Russell, Adjunct
Thomas Barnes, Adjunct & Head of OSP Portland Forensic Laboratory
Sara Short, Adjunct & Scientist at OSP Portland Forensic Laboratory
Sharon Clinton, Chemistry Laboratory Preparator

II. FACULTY HIGHLIGHTS

a. Teaching

- Patricia Flatt and Ray Dandeneau made substantial revisions to the Ch 104-106 curriculum altering the course content to better serve the needs of pre-nursing students. This included the introduction of new laboratory experiments, introduction of student help sessions and use of clickers in the classroom to assess student learning. Professors Flatt, Daneneau and Russell integrated the use of a Pearson Higher Education web-tutorial package called Mastering Chemistry during the winter and spring terms for Ch105 and Ch106 which provides a class-based web site allowing instructors to assign, grade, and assess homework assignments associated directly with the course textbook. The assessment tool for this web-server readily compares WOU class averages on a question-by-question basis with the national averages of other colleges using the system. It also provides a breakdown of the questions on the basis of their difficulty, how much time the average student requires to answer each question, the number of hints each student needed to use in completing the tutorial, and how many attempts a student required to get the correct answer to a problem. This resource allows assessment of the scores for the class as a whole thus allowing the instructors to isolate areas where groups of students are having similar problems.

- Patricia Flatt developed and offered Ch 345 Introduction of Toxicology for the first time. She experimented with providing online lectures.

- Arlene Courtney and Philip Wade continued their collaboration in the use of project-based learning in GS 203H (the LACC science course for honors students which is taught jointly through the Departments of Earth and Physical Science and Chemistry). The course was taught using non-traditional methods utilizing no course textbook. The course material was presented in a multimedia-rich format via a Moodle framework and through a

number of instructor-designed (Courtney) multi-media, web-based learning modules. The course was technology-rich including use of social bookmarking, a wiki for collaborative student project development, photo sharing sites, and use of audio and video production software. Pairs of students created video documentaries of approximately 10-minute duration. The nine completed documentaries were aired in a public forum during the Academic Excellence Showcase. This course, extensive use was made of knowledge surveys. The data collected from these surveys is being incorporated into a research publication on use of video production for teaching science. A poster presentation was given based on this study at the American Geophysical Union's 2010 national meeting held in December 2010. A paper is in preparation for peer-reviewed publication.

b. Scholarship

Arlene Courtney

- Co-authored one poster presentation
    - Wade, P. ; Courtney, A. R. "Learning About Energy Resources Through Student Created Video Documentaries in the University Classroom" (#ED31B-0632). Presented at the American Geophysical Union Meeting, San Francisco, December 15, 2010.

Patricia Flatt

- Co-authored one peer-reviewed publication
    - Andrianasolo, E., **Flatt, P.M.,** McPhail, K.L., Simmons T. L., and Gerwick, W.H. **(2011)** Pivotal Connections: Tracing Support by the Natural Products Branch to Drug Discovery from Marine Organisms. In Bruce Ponman's and James Miller's Ed: *Realizing Natures Potential: Proceedings of the William L Brown Symposium Honoring Dr. Gordon Cragg.* Missouri Botanical Garden Press, St. Louis, MO.

- Presented one research paper
    - Flatt, P. "Identification and Functional Analysis of the Pyralomicin Biosynthetic Gene Cluster." Presented at the 69th Annual Meeting of the Oregon Academy of Science, Concordia University, Portland, OR. February 27, 2010.

- Received funding of two grant applications
    - Flatt, P.M. (Co-PI) (Awarded 06/01/2011) Collaborative Grant Proposal Submitted with Steve Taylor (PI) and Paul Measeles (PI) at Oregon Department of Agriculture. 'Surface Water Quality Monitoring in the Mid-Willamette Valley.' Submitted to Oregon Watershed Enhancement Board (OWEB). $17,500.
    - Flatt, P.M. (Awarded 01/01/2011) Faculty Development Grant awarded by WOU. Deciphering Secondary Metabolic Pathways in Microorganisms. $3,000.

- Submitted one non-funded grant application

    - Flatt, P.M. (Submitted 08/02/2010). 'Deciphering Secondary Metabolic Pathways in Microorganisms'. Submitted to NSF – Chemistry of Life Processes (CLP) Program. $121,621.

- Attended one workshop

    - Advanced Forensic Polarizing Light Microscopy Workshop sponsored by the McCrone Research Institute in Chicago to develop skills in polarized light microscopy and the master application of these techniques to the analysis of forensic evidence.

- Journal reviewer for the *Journal of Natural Products.*

Pete Poston

- Published one co-authored peer-reviewed paper

    - Poston, P.E.; Harris, J.M. "Stable, Dispersible Surface-Enhanced Raman Scattering Substrate Capable of Detecting Molecules Bound to Silica-Immobilized Ligands". **Applied Spectroscopy.** 2010, 64, 1238-1243.

c. Service

All tenured and tenure track members of the department participate in recruitment activities such as Preview Days and SOAR.

Other Individual Committee Responsibilities:

- Arlene Courtney
    - Department Head - Chemistry
    - Faculty Development Committee
    - Academic Infrastructure Committee
    - Natural Science and Mathematics Division PRC
    - LACC Review Committee
    - Committee for new Natural Science building planning

- Patricia Flatt
    - Student Conduct Committee
    - Student Technology Committee
    - Faculty Development Committee

- Rahim Kazerouni
    - WOU Student Grievance Committee
    - NSM Curriculum Committee

- Pete Poston
    - Faculty Senate

- NSM Building Committee
- NSM Professional Concerns Committee
- Chair Adjunct Search Committee

III. STUDENT ACHIEVEMENTS

- Tyrone Morato accepted to University of Oregon graduate school
- Dallas Swanson accepted to OHSU Medical School
- Capstone Student Seminars (Arlene Courtney Mentor) – 6 total
  - Randolph Miller: Superconductors: The Chemist's Perspective
  - Trevor Gates: Chemical Agents: "The Poor Man's Atomic Bomb"
  - Tyrone Morato: Organic Solar Cells: The Promise of Environmentally and Economically Conscious Renewable Energy
  - Samantha Cunningham: Properties of Blood in Forensics
  - Reyna Javar: The Secret Life of Energy: Laws of Conservation at the Nanoscale Level
  - Chris Rule: Acetaminophen: How Polymorphic Structures Affect Its Development and Metabolism
- Ch 420 Academic Excellence Showcase Poster Presentations (Patricia Flatt Sponsor) – 5 total
  - Kevin Swearingen: Terrorism – The Case of the Unibomber
  - Nyssa Hicks: Blood Detection at Crime Scenes
  - Jessica Curry: Processing of Forensic Evidence
  - Trevor Gates: Forensic Science and Terrorism
  - Samantha Cunningham : Properties of Blood in Forensics
- Honors Student Video Documentaries Screened at the Academic Excellence Showcase (Arlene Courtney/Philip Wade Sponsors) – 8 total
  - Tayleranne Gillespie and Ariel Setniker – "Cheaper, Safer and Bountiful: The Future of Nuclear Energy"
  - Kelsey Gray and Lisa Rogers – "Thinking Outside the Petroleum Box: Tar Sands and Oil Shales"
  - Mike Stevenson and Rosie Brown – "Solar Energy: A Resource for All?"
  - Olevia Bittick and Chloe Hansen – "People Movers: The Future of Transportation"
  - Heidi Wilson and Bailey Hough –"What's in Your Tank?"
  - Chris Tasner and David Becker – "Exploring Efficient Geothermal Processes and Large-Scale Applications"
  - Kayla Ward and Katy Elliott – "Nuclear Fission in a Modern World"
  - Aaron Dull and Erica Wills – "Sustainability for Our Future: The Science Behind Building a Greener College Campus"

APPENDIX 2. LAS Embedded Assessment Action Reports

Attach individual LAS Dean course embedded assessment logs, as available.

Attached as separate files.