Department of Earth and Physical Sciences
2008-2009 Annual Report

I. Executive Summary succinctly highlighting programming activities/experiences (good/bad) in EPS department.

The Department of Earth and Physical Science consists of two program areas – Earth Science and Physics. The following is a summary of 2008-2009 departmental highlights:

- Earth and Physical Science faculty members actively served as leaders on a number of campus-wide initiatives including the Academic Excellence Showcase planning committee and the Program for Undergraduate Research Experiences (Templeton), NSM Division Chair in the College of LAS (Taylor), and NSM division representatives to the Collective Bargaining team (Schoenfeld and Wade).

- Earth and Physical Science faculty members actively served as professional leaders in their fields. Professional service activities include: president of the Oregon Academy of Science (Myers), participation in NASA Oregon Space Grant Program (Schoenfeld), participation and leadership in state-level geoscience advisory boards (Taylor), and collective faculty membership and participation in professional societies (American Association of Physics Teachers, American Geophysical Union, Association of American Geographers, Botanical Society of America, Friends of the Pleistocene, Geological Society of America, International Organisation of Palaeobotanists, National Association of Geoscience Teachers, National Science Teachers Association, Oregon Academy of Science).

- Earth and Physical Science faculty members continue to be actively engaged in a wide spectrum of peer-reviewed research, publication, and related professional development. (Refer to Appendix 1. Faculty Reports)

- Earth and Physical Science faculty members continue to actively engage high-quality undergraduate teaching, learning, and curriculum development. With 4 tenured faculty and 6 adjunct instructors, the EPS department generated over 8500 student credits hours (SCH) during the 2008-2009 academic year, accounting for 30% of the total production in the Division of Natural Sciences and Mathematics.

- The Earth and Physical Science programs are experiencing modest growth, in parallel with overall university trends. ES100 LACC enrollments and retention are very strong. The program is actively advancing forward with respect to opportunity funding and infrastructure development in NS017 and NS101.

II. Section summarizing enrollment trends in the various programs and note what obstacles or opportunities the program faculty believe the administration should be aware of (i.e., an abbreviated SWOT analysis of enrollment in the program).

The Earth Science student population is quite diverse in terms of skills, interests, and career goals, ranging from Earth Science majors with focused career objectives to Environmental Studies minors and Integrated Science Education majors. The average annual number of majors

and minors in the Earth Science program is 40, with nearly 1500 students tracking through the LACC ES 104-105-106 sequence. Most ES 100 students are in their freshman or sophomore years, and over 60% list their major as "pre-education". Enrollment in upper-division specialty courses ranges from 8-15, with 25 to 45 in more accessible lower and upper division courses (e.g., ES 201-202-203 Principles of Geology, ES 331 Oceanography, and ES 390 Meteorology).

Based on enrollment data from 2004-2009, the Earth Science program supports an average of 25 majors and 15 minors, with a range of 4 to 8 baccalaureate degrees per year. Demographically, our students are predominantly white/Caucasian, 20-24 years of age, with a female-to-male ratio of 1:3. Preliminary analysis of select course data from 1999-2005 (Dr. Taylor upper-division class rosters; n = 176) indicates that approximately 75% of our upper-division students are declared Earth Science majors and minors. The remaining 25% are working on graduate education degrees, free electives, and ancillary minors such as Environmental Studies. Approximately 3% of the declared majors advance on to graduate school in either education or geoscience. Over 20% of the same group obtained employment as K-12 teachers, and approximately 12% found at least temporary employment in the fields of geospatial technology or natural resources management (GIS, forestry, geotechnical, watershed management).

Earth Science enrollments have been increasing over the past 3 academic years (2006-2009). Total student credit hour production increased 15%, ES100 enrollments 11%, and ES200 enrollments 96%. The upper division population is steady, with a consistent range of 7 to 15 students per course. The program is economical and efficient, with the highest annual credit-hour production per faculty-staff member (~400 SCH per faculty-staff) and the lowest salary:SCH ratio in the NSM Division.

III. Section summarizing activities related to program review and assessment.

This past year the Geology faculty completed changes to the Earth Science program curriculum, initiated in the previous year. These curriculum modifications included the following: 1) addition of four new courses and updates to course numbers, titles and/or descriptions for eight existing Earth Science courses; 2) changes to the Earth Science Major, including incorporation of the new courses into the degree plan, addition of three new Mathematics options, revision of the Computer Science requirement, and concomitant credit hour change; and 3) modifications to the Earth Resources, Earth System Science, and Geology Minors to reflect to the course changes. These modifications represent a fine-tuning of Earth Science curriculum, the goal of which is to strengthen and modernize the major to best serve student needs. The changes will go into effect during the 2008-09 and 2009-10 academic years. The Earth Science program is in the process of implementing a comprehensive evaluation plan that includes the following strategies: (1) formative embedded assessment, (2) summative assessment of the degree program, and (3) survey-based tracking of current students and graduates. The evaluation strategies described below will commence during the 2008-09 academic year with formative assessment strategies and continue until 2012 when we plan to conduct our external review of the Earth Science program.

Formative Embedded Assessment: Formative assessment of the Earth Science Program is currently being conducted via a series of Embedded Assessment Strategies. Initiated in Spring 2008, these strategies specifically link student performance on course activities to program

outcomes. A variety of methods and course activities are used for embedded assessment, including inquiry-based lab exercises, field studies, writing assignments (informal short essays and longer-form research papers), active-learning exercises, oral group presentations, and multi-media work samples. These types of embedded assessment strategies will are incrementally being deployed in all Earth Science courses, including the new and modified courses that are part of this curriculum change packet.

Summative Assessment of Degree Program: The capstone course, Senior Seminar (ES 407), will continue to serve as the primary Degree Program Assessment mechanism for Earth Science graduates. The objective of Senior Seminar is for students to conduct in-depth study and research on current topics in the Earth Sciences. By requiring Earth Science students to draw on information from the full range of major courses they have completed during their time as an undergraduate, students must demonstrate proficiency in a broad range of Earth Science content areas. Students are required to complete ES 407 during the final term of their senior year and must satisfactorily complete the capstone course to graduate from the program. Senior Seminar has been successfully incorporated into the campus-wide, Academic Excellence Showcase event sponsored by the Program for Undergraduate Research Experiences and Phi Kappa Phi.

In conjunction with seminar inquiry-based, work-sample method described above, standardized exit exam models are currently being explored by Earth Science faculty members. Several ideas have been pilot tested. One model utilizes an online exit exam based on national standards established by the Educational Testing Service in the 1990's that comprised part of the Advanced Geology Graduate Record Exam. A second model utilizes the education-based PRAXIS exam for teaching candidates with an emphasis in Earth and physical science content. The third summative assessment tool currently under evaluation is the nationally standardized Fundamental Geology Exam that forms part of the Oregon State Board of Geologist Examiners professional licensing process. Select student test groups have engaged each of above summative models over the past 8 years, their collective effectiveness and practicality are currently being evaluated.

Survey-Based Tracking of Current Students and Graduates: The Earth Science program is currently in the process of developing student and alumni tracking mechanisms, along with other programs in the College of Liberal Arts and Sciences. This is a work in progress with an implementation timeline spanning the next two years. Earth Science students and graduates will be tracked through several different mechanisms including the collection of numeric data and the utilization of Alumni Surveys. The types of numeric data that will be collected will include course enrollments, grade distributions, and time to degree completion. This data will be provided by the WOU Office of Institutional Research. Focus groups of current Earth Science students will be formed to determine the degree to which the proposed curriculum changes are accomplishing the intended outcomes. Senior Seminar (ES407) will serve as the gateway for conducting focus group surveys. We currently collect post-baccalaureate data via informal correspondence and networking between graduates and faculty (e.g., emails, phone calls, requests for recommendation). To more comprehensively gauge alumni satisfaction, formal surveys of Earth Science graduates will be conducted to help guide us in continually refining the degree program. Alumni surveying methodologies will be developed in collaboration with the College of LAS and the Office of Institutional Research.

During summer, 2008, Myers spent a great deal of time with colleagues at Cal State University, Monterey Bay, reviewing successful strategies for designing course materials with an eye toward embedded course/curriculum assessments. CSUMB is an institution that is demographically similar, of similar size, and with a mission similar to that of WOU, and hence is an ideal model for designing assessment strategies, since CSUMB has invested considerable effort and resources into assessment. Myers is revising course content, organization, and syllabi with a view toward demonstrable and assessable learning "blocks". To date Myers has revised fall courses, and course syllabi were evaluated by the WOU teaching research assessment office and selected as models for effective syllabus design by Dean Scheck.

IV. Section describing department-wide conversations, programming or initiatives.

Refer to Section III above.

V. Any other issue(s) you wish to bring particular attention to.

The primary challenge facing the Department of Earth and Physical Sciences is the over-dependence on adjunct faculty and lack of tenure-line positions. The Earth Science program is currently in need of at least one tenure-track faculty position. The course load in the department is supported with an anomalously high number of adjunct instructors as compared to other departments in the Division of Natural Science and Mathematics (NSM). The Earth and Physical Science department is exceedingly dependent on adjunct instructors and has had a long-standing need for additional tenure-line hires compared to other departments in the division. While we appreciate the dedicated service of our adjunct instructors, institutional stability, continuity, and future growth are dependent upon the stock of tenure-line faculty. Not only do tenure-track faculty members add to the vitality of individual courses and program curricula, they also represent an institutional investment in advanced levels of service, scholarship, and grant writing that is not typically possible for adjunct instructors.

To address this long-standing need, we have requested annually since 2002 that the administration hire at least one tenure-track faculty member in the Department of Earth and Physical Science, most recently in the Earth Science Self-Study Report and in a call for positions in Fall 2008. We are seeking a Science Education Specialist with an enthusiastic interest in undergraduate science education for non-science majors and pre-Education majors. The successful candidate will teach courses heavily enrolled by K-12 pre-Education majors and LACC students, including all three courses in the introductory Earth System Science sequence (ES 104, ES 105, ES 106) and potentially the Earth and Physical Science Education Methods courses (GS 312 and GS 313). Additional instructional duties will depend on the background of the successful candidate, but may include Meteorology, Honors science, and one or more upper-division Science Education courses in area of expertise. A significant percentage of these courses have been staffed with adjunct instructors over the past 10 years.

In addition, an ongoing challenge is associated with the teaching load required of faculty. The teaching load combined with maximum-capacity class sizes results in little time available for other faculty duties such as scholarly research, program planning / assessment, and professional service.

VI. Appendices for notable faculty engagement in:
   A. Teaching – include out of the ordinary type notations, only, such as faculty-student collaborative scholarship, attendance with students at conferences, service learning components, etc.
   B. Scholarship – professional and/or peer-reviewed
   C. Service – include service to external organizations or student organizations; no need to list faculty senate or department/division-like service
   D. Significant student successes – please add as much detail as possible; e.g., acceptance to graduate school, external award recipients, other student demographic data of note

See annual faculty reports attached below.

Appendix 1. 2008-2009 Annual Faculty Reports

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Due Date: June 16, 2009 *Attach a current copy of your CV and send electronic copies as email attachments to Steve Taylor, taylors@wou.edu*

Name: **Report Date:** 6-1-09

Title/Rank: Full Professor **Years in Rank:10 at WOU**
Initial Hire Date at WOU: 9/99 **Years of Service: 10 at WOU, 1 prior to WOU w/PhD**

I. TEACHING AND CURRICULUM

A. Course Census

(List the courses that you have taught this year and corresponding enrollment data by term.)
Fall:
ES 431/531 – Paleobiology, 10 students
ES 331 – Introduction to Oceanography, 34 students
ES 106 – Earth System Science III – 49 students
ES 106 L – Earth System Science III Lab – 24 students

Winter:
ES 105 – Earth System Science II – 55 students
ES 105L – Earth System Science II – 12 students
ES 453/553 – Geology of the Pacific Northwest – 22 students
3.5 FTE Dean approved faculty service course release

Spring:
ES 104 – Earth System Science I - 58 students
ES 203/203L – Historical Geology – 23 students
ES 392 – Sedimentary Geology – 6 students

B. Course Development and Improvement

(Indicate any courses that were new preparations, significantly revised preparations, and anything significant about your efforts in these courses. Describe new techniques, materials, or technologies that were incorporated into your classroom teaching. Include any field trips or extended learning activities that took place outside of the classroom.)

Multi-day field trips:
ES 431/531 – Fri-Sun, John Day Basin, central Oregon. This field trip examined fossils of the Eocene Clarno and Eocene-Miocene john Day formations with the goal of understanding the geological relationships of fossils in the field and the use of fossils to interpret climatic and environmental conditions.

ES 392 – Fri-Sat, Cape Arago, OR. This field trip examined sedimentary features of the middle Eocene Elkton Formation and Middle Coaledo Member of the Coaledo Formation with the goal of interpreting the depositional environment of the formations. Each student fully researched a the conditions under which a specific sedimentary feature formed, then tested these interpretations with direct observation in the field. These topics were the subject of student presentations and papers.

C. Program Assessment Activities
(Provide a bulleted summary of assessment activities that you have been involved within the past year, e.g. embedded assessments, exit exams, assessment planning, assessment-based curriculum changes, related professional development, etc.)

- During summer, 2008, I spent a great deal of time with colleagues at Cal State University, Monterey Bay, reviewing successful strategies for designing course materials with an eye toward embedded course/curriculum assessments. CSUMB is an institution that is demographically similar, of similar size, and with a mission similar to that of WOU, and hence is an ideal model for designing assessment strategies, since CSUMB has invested considerable effort and resources into assessment. I am revising course content, organization, and syllabi with a view toward demonstrable and assessable learning "blocks". To date I have revised fall courses. In 09-10 I hope to revise winter courses, etc. My fall syllabi were evaluated by the WOU teaching research assessment office, and were selected as models for effective syllabus design by Dean Scheck.

D. Curriculum Changes
(Provide a bulleted summary of curriculum changes that you were involved within the past year.)

- Deletion of the History of the Earth and Biosphere minor at the request of Provost Neely

II. RESEARCH & SCHOLARSHIP

A. Research Projects
(Provide a bulleted summary of research projects you have worked on this year. Indicate any student involvement or collaborations in these projects.)

- Composition and climatic and environmental conditions indicated by the late Miocene Anaverde Flora of San Bernardino County, California. The Anaverde study is a consulting project I am overseeing in collaboration with Earth Science students Matt Buche and Alyssa Pratt, both of whom have received paying internships to conduct the project. The project, now near completion, sheds light on the evolution of truly drought tolerant chaparral-like vegetation in the near coastal intra-montane region of southern California, and has revealed some surprising results.
- Student research: Developing WOU/community earthquake awareness and preparation, with students Matt Buche and Alyssa Pratt
  - Buche, M and Pratt, A.R. 2009. "Building a collaborative government-community earthquake awareness program". Proceedings of the Oregon Academy of Science Annual Meeting, Western Oregon University, Feb. 28, 2009, p.22.

B. Peer-Reviewed Publications

- Accepted, in revision, Cenozoic Paleobotany of the John Day Basin, OR. Geological Society of America Special Field Trip Volume, 2009 Annual Meeting, Portland, OR

C. Presentations and Refereed Abstracts

- OR Academy of Science Annual Meeting, Western OR University, Feb 28, 2009. Myers, J.A., Erwin, D.M., Schorn, H.E., Buche, M., Pratt, A.R.; "The late

Miocene Anaverde flora: Chaparral with Avocadoes?" Proceedings of the OR Academy of Science, p. 19.

D. Grant Writing Activities
(Include proposal title, authors, funding source, amount, and status on funding request.)

E. Professional Certifications, Licenses, Other Specialty Credentials

- Affiliate paleontology researcher, Burke Museum, University of WA.

III. FACULTY SERVICE

A. Student Advising
(Provide a bulleted list of activities related to academic advising, number of advisees, programs in which you advise, etc.)

- EC/E and E/M Education majors in the physical sciences: 17 advisees
- ES majors: 5.

B. WOU Institutional Service
(Provide a bulleted list of department-division-university service duties that you have carried out, e.g., scheduling, recruiting activities, student clubs, search committees, faculty senate, mentoring, etc.)

a. Honors committee
b. Ad Hoc Freshman Experience committee
c. Natural Science Club director

C. Leadership, Professional Service and Community Outreach
(List professional service completed this past year, include consulting activities and leadership roles.)

- President, Oregon Academy of Science, 2008-2009.
- Paleontological consultant, Paleoenvironmental Associates, Altadena, CA
- Paleobotanical consultant on projects involving Miocene paleofloras from the Western Cascades with Mr. Robert Rose, and Eocene-Oligocene floras from the eastern Klamath terranes with William Elliott and Jad Dallura of Southern Oregon University

D. Professional Societies
(List memberships in professional organizations.)

- Botanical Society of America
- International Organisation of Palaeobotanists
- Geological Society of America
- Oregon Academy of Sciences

IV. HONORS AND AWARDS
(Provide a bulleted list of honors and awards that you received in the past academic year.)

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH
(Provide a bulleted list of challenges and barriers to achievement in your role as a faculty member at WOU. Also list any plans for professional growth and/or mitigation of challenges.)

VI. MISCELLANEOUS (Provide a bulleted list of any other items not covered above.)

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Name: William Schoenfeld **Report Date:**

Title/Rank: Associate Prof of Physics **Years in Rank: 5**
Initial Hire Date at WOU: Fall 2002 **Years of Service: 7**

I. TEACHING AND CURRICULUM

A. Course Census

Fall: Physics 211 – General Physics with Calculus (lecture & lab) – 5 Cr – 12 students
Physics 311 – Intro to Modern Physics I (lecture & lab) – 4 Cr – 4 students
Winter: Physics 212 - General Physics with Calculus (lecture & lab) – 5 Cr – 6 students
Physics 312 – Intro to Modern Physics II (lecture & lab) – 4 Cr – 4 students
Spring: Physics 213 - General Physics with Calculus (lecture & lab) – 5 Cr – 3 students
Physics 313 – Intro to Modern Physics III – 3 Cr – 4 students
Physics 470 – High Altitude Ballooning – 2 Cr – 5 students
General Science 606 – SIS – High Altitude Ballooning – 3 Cr – 1 student

B. Course Development and Improvement

Physics 313 – new course, we continued in the textbook further than I had ever gone before.
Physics 470/ General Science 606 – new courses, they were treated as a group research project in which each team member was assigned specific tasks to accomplish.

C. Program Assessment Activities

1. **Physics 211/212/213**
   - Students took national diagnostic exams; FMCE (Force-Motion Concept Evaluation), ECCE (Electric Circuits Concept Evaluation)
   - Students participated in multiple mathematical modeling assessment activities using EXCEL spreadsheets

D. Curriculum Changes

- None

II. RESEARCH & SCHOLARSHIP

A. Research Projects

- Work continued on the NASA Climate Change E/PO, new activities were developed, review of children's literacy materials continued.

B. Peer-Reviewed Publications

- none

C. Presentations and Refereed Abstracts

- Two presentations (hour long) were given at the National meeting of NSTA in Portland (October 2008)

A. D. Grant Writing Activities

- Addressing the New Content Standards: Physics Concepts for Elementary Educators, William Schoenfeld, National Space Grant Foundation, $24,000, not selected for funding
- *Global Climate Change Institute for Teachers (GccIFT), Improving the Scientific Literacy of K-8 Teachers in the Pacific Northwest, William Schoenfeld –PI, Adele Schepige co-I, NASA, $150,000, selected for funding, award in progress*

E. Professional Certifications, Licenses, Other Specialty Credentials

III. FACULTY SERVICE

Student Advising

d. Physics minor – 4 students
e. Pre-engineering – 2 students

C. WOU Institutional Service

- NSM Personnel Review Committee, NSM Service Committee, Student Financial Aid Scholarship Committee
- Advertised & interviewed for adjunct faculty in physics
- Participated in SOAR

Leadership, Professional Service and Community Outreach

- Oregon/NASA Space Grant Consortium – affiliate representative, 1 statewide meeting, assigned to two OSGC workgroups
- Reviewed E/PO proposals for NASA
- Presented two climate change workshops for elementary teachers, in addition to WOU colleagues, 2 undergraduates and 1 graduate student participated in workshop.

D. Professional Societies

- NSTA (National Science Teachers Association)
- AAPT (American Association of Physics Teachers)

IV. HONORS AND AWARDS

None?

1. V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH

Curriculum Challenges:

1. WOU is the only school in the OUS system that does not have a 100 level conceptual physics course, it is needed as most high school graduates have never taken any physics.

2. WOU is the only school in both the OUS and Community College system that does not offer a 100 level LACC astronomy course, I believe it would be of interest to many students on campus.

3. The online (lecture & lab) Physics 201/202/203 class at Chemeketa Community College continues to pull many students away from WOU. In years of looking at student transcripts, I have never seen a grade lower than B; higher grades for less work is very difficult to compete with!

Staffing Challenges:

1. A single (permanent) physicist is insufficient to handle even the limited physics offerings required to maintain a physics minor. In the seven years I've been here, 5 different people, with varying levels of physics background, have assisted me (Don Ellingson, Kari Salas, Larin Hennesey, Avery Cotton, KC Walsh). With Modern Physics offered every other year, a permanent solution to this dilemma would be desirable.

Space Challenges:

1. The building is at capacity. This past year having three physics sequences (201/202/203, 211/212/213, 311/312/313) using the same room with the ballooning group (470/606) made for sharing the space cooperative endeavor. This was "do-able" because all the classes had low enrollments. What is enrollment numbers should increase? Where will the NASA funded curriculum development work be performed?

Global Climate Change Education:

Dr. Schepige & I seemed to have had the right ideas at the right time to have been funded in NASA's first stab at climate change education. It is fortunate they we will both be on sabbatical next year, however I think we will have much difficulty trying to even maintain, let alone expand the scope of our endeavors once I return to full responsibility of the physics program.

VI. MISCELLANEOUS (Provide a bulleted list of any other items not covered above.)

Record year for WOU students receiving Space Grant undergraduate scholarships ($6000)& graduate fellowships ($12,000)

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS

I had a meeting six weeks with PR to explain the nature of our NASA award and the work we are doing, nothing has happened thus far!

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Due Date: June 16, 2009 *Attach a current copy of your CV and send electronic copies as email attachments to Steve Taylor, taylors@wou.edu*

Name: Steve Taylor **Report Date:** July 15, 2009

Title/Rank: Associate Professor of Geology **Years in Rank:** 5
Initial Hire Date at WOU: September 15, 1999 **Years of Service:** 10

I. TEACHING AND CURRICULUM

A. Course Census

(List the courses that you have taught this year and corresponding enrollment data by term.)

Term	Course No.	Course Name/Section	Cr. Hr/ FTE	No. Students
Fall 2008	ES322	Geomorphology	4.0	14
Winter 2009	ES202	Physical Geology Lec/Lab	4.3	34
Winter 2009	ES341	Fundamentals of GIS	4.0	19
Winter 2009	ES302	Geotechniques: Quantitative	2.3	7
Spring 2009	ES473/573	Environmental Geology	4.0	15
Summer 2009	ES458-558	River Environments	3.0	9

*** Note: 2008-2009 Taylor was on 0.5 FTE course load release to serve as NSM Division Chair*

B. Course Development and Improvement

(Indicate any courses that were new preparations, significantly revised preparations, and anything significant about your efforts in these courses. Describe new techniques, materials, or technologies that were incorporated into your classroom teaching. Include any field trips or extended learning activities that took place outside of the classroom.)

Course Development

Summer 2008	Continued developing curriculum, field exercises, and web site for ES458/558 River Environments of Oregon.
Fall 2008-	Collaborated with Dr. Templeton on changes to the Earth Science program curriculum. Activities included additions of new courses, realignment of the math requirement, and updating of catalog descriptions.
Fall 2008- Spring 2009	Continued development of multi-media and online resources for a spectrum of Earth Science courses including ES104, ES106, ES202, ES473, ES476, and ES492

Winter 2009 Offered a new introductory course in Geographic Information Systems, ES341 Fundamentals of GIS. This course required development of all new lab exercises and tutorials to accommodate upgrade to ArcGIS9.X software from previous versions of ArcView used in ES491.

Spring 2009 Continued development of capstone assessment tools for Earth Science program and use in ES407 Senior Seminar. Earth Science program exit exam based on GRE-style assessment process.

Spring 2009 Transferred all of pre-existing WebCT course materials (ES202, ES104, ES106, ES407) to the Moodle online course management environment.

Spring 2009 Pilot tested real time audience response systems ("clickers") in ES473 Environmental Geology.

Field Trips

Summer 2008 Trip leader: "Hydrology and Geomorphology of the Middle Deschutes and Lower Columbia Rivers". Field trip in conjunction with ES458/558 River Environments.

Fall 2008 Organized the first annual NSM Division Fieldtrip entitled "Environmental Studies in the Luckiamute Watershed, Polk County, Oregon".

Spring 2009 Trip leader: "Student Night at the Association of Engineering and Environmental Geologists Pacific Northwest Region; Portland State University". Field trip in conjunction with ES473/573 Environmental Geology

Spring 2009 Trip leader: "Hydrogeology and Aquifer Storage Recovery System at Dallas, Oregon". Field trip in conjunction with ES473/573 Environmental Geology

Spring 2009 Trip leader: "Solid Waste Management and Hydrogeology at the Coffin Butte Landfill, Benton County, Oregon". Field trip in conjunction with ES473/573 Environmental Geology.

C. Program Assessment Activities

(Provide a bulleted summary of assessment activities that you have been involved within the past year, e.g. embedded assessments, exit exams, assessment planning, assessment-based curriculum changes, related professional development, etc.)

Fall 2008 Updated ES program demographic and alumni data.

Fall 2008-Spring 2009 Continued embedded assessment activities in ES322, ES341, ES302 and ES473. Instruments included laboratory portfolios ("work samples"), embedded exam questions directly linked to the ES program mission, and research-based student poster presentations.

Spring 2009 Participated as EPS department representative in the Spring LAS program assessment retreat.

D. Curriculum Changes

(Provide a bulleted summary of curriculum changes that you were involved within the past year.)

Fall 2008 Worked with Dr. Templeton to finalize Earth Science program curriculum changes that were initiated in Spring 2008. The program changes included minor modifications, restructuring the mathematics options, and adding several new elective courses to the rotation. Taylor and Templeton worked closely with Provost Neely on carefully assessing the need for ES program changes, and to provide a model to present to the NWCCU accrediting body.

II. RESEARCH & SCHOLARSHIP

A. Research Projects

(Provide a bulleted summary of research projects you have worked on this year. Indicate any student involvement or collaborations in these projects.)

Fall 2008-Spring 2009 Continued Research Project (work in progress): "Geomorphic and Anthropogenic Influences on the Distribution of Invasive Plant Species in the Luckiamute Watershed, Polk and Benton Counties, Oregon", in collaboration with Dr. Dutton and two undergraduate students. This year's work focused on land change analysis using historical air photos.

Fall 2008-Spring 2009 Ongoing compilation of research literature and reference library related to watershed analysis, regional geomorphology, hillslope / fluvial processes.

Fall 2008 Summer 2009 Continued collaborative relationship with the Andrews Experimental Forest, Pacific Northwest Research Station (U.S. Forest Service). Working title of this research project is "The Influence of Geomorphic and Anthropogenic Processes on Decadal-Scale Sediment Yield in the Western Cascades, Oregon: An Updated Compilation of Experimental Watershed Data at H.J. Andrews Experimental Forest". This work forms part of a sabbatical-related Research Opportunity Award (ROA) funded by the National Science Foundation in Summer 2007.

B. Peer-Reviewed Publications

Summer 2009 Manuscript submission to Journal of Maps: "Surficial map criteria for sandstone landscapes of the Central Appalachians: An example from the Little River basin, Augusta County, Virginia, USA", with Dr. Steve Kite, co-author, West Virginia University.

C. Presentations and Refereed Abstracts

Winter 2009 Co-authored research presentation at the Oregon150 commemorative event at WOU, with Dr. Dutton. Presentation was entitled "Invasive Plant Species in Oregon's Past, Present, and Future: A Case Study in the Luckiamute River Basin, Polk County"

Spring 2009 Abstract published and paper presented paper at the National Meeting of the Association of American Geographers, Las Vegas, NV: "Invasive Plant Distribution in the Luckiamute River Basin, Central Oregon Coast Range: Preliminary Analysis of Geomorphic and Land-Use Variables", in collaboration with Dr. Dutton. Paper comprised part of a topical theme session entitled "Human Impacts on Watershed Processes".

Spring 2009 Prepared and presented map display of rapid bio-assessment results to members of the Luckiamute Watershed Council, Monmouth, Oregon.

D. Grant Writing Activities
(Include proposal title, authors, funding source, amount, and status on funding request.)

Fall 2008 Submitted mini-grant proposal to WOU Foundation entitled "Travel Support for Natural Science and Mathematics Seminar Series"

Winter 2009 Re-submitted research proposal entitled: "Geomorphic Analysis of Late Quaternary Cinder Cones at Newberry Volcano, Central Oregon: Landform Evolution and Eruptive History in a Back-Arc Setting". Submitted to the Cole Research Award Fund at the Geological Society of America, Denver, CO ($14,000, unfunded).

Spring 2009 Co-PI and administrative signatory on proposal entitled: "Application of Spatial Statistics to Latent Print Identifications: Towards Improved Forensic Science Methodologies", with Emma Dutton, Oregon State Police; Bryan Dutton, WOU Biology, and Pat Aldrich, WOU Biology. Submitted to the National Institutes of Justics, Washington, D.C. (~$1.1 M, review pending).

E. Professional Certifications, Licenses, Other Specialty Credentials

Maintained active registration as a Professional Geologist in the State of Oregon (Registration Number G1968), State Board of Geologist Examiners, Salem, Oregon.

III. FACULTY SERVICE

A. Student Advising
(Provide a bulleted list of activities related to academic advising, number of advisees, programs in which you advise, etc.)

Continued as faculty advisor in Environmental Studies and Earth Science programs (10 ES students, 2 Environmental Studies students)

D. WOU Institutional Service
(Provide a bulleted list of department-division-university service duties that you have carried out, e.g., scheduling, recruiting activities, student clubs, search committees, faculty senate, mentoring, etc.)

(1) Member of NSM Personnel Review Committee at WOU
(2) Chair of NSM Technology Planning Committee at WOU
(3) Member of the NSM Building Infrastructure Planning Committee at WOU
(4) Member of the NSM Seminar Committee

(5) Continued as ESRI GIS licensing liaison for WOU. Part of this work includes ongoing implementation of a central GIS server for use by both the colleges of Education and LAS.

(6) Served as one of the Earth and Physical Science faculty representatives at Preview Days and SOAR at WOU.

(7) Informally worked on career placement for Earth Science-related graduates from WOU (maintain a job board and placement contacts for students in government and industry); developed a comprehensive advising and career guide for Earth Science majors.

(8) Continued soliciting funds and campus-wide services to further develop the Geo-Data Processing Lab in NS218A. The Geolab has received greater use the past year by Earth Science students and faculty for research and teaching activities.

(9) Served as ad-hoc administrator of the WOU Earth Science program web site and related public relations activities.

(10) Served as session chair and active faculty participant in the 2008 WOU Academic Showcase (comprising part of the new "PURE" initiative, Program for Undergraduate Research Experiences). The session was entitled "Earth Science in Context: Land Use and Watershed Function in the Willamette Basin". The work involved 16 undergraduate students actively engaged in seminar-style research and science poster presentations.

(11) Co-represented WOU at the Fall 2008 working session on Professional Science Masters programs, sponsored by the Oregon University System, Salem, Oregon.

C. Leadership, Professional Service and Community Outreach
(List professional service completed this past year, include consulting activities and leadership roles.)

(1) Division Chair of Natural Sciences and Mathematics, Western Oregon University. The wide array of duties in this position include: budget management (~$200,000 supplies and services), personnel supervision (~40 faculty and staff), class scheduling, liaison with upper administration, student grievances, signatory duties on division paperwork, strategic planning, tenure and promotion work, building management.

(2) Served as Earth Science Advisor for K-12 Science Standards Review Panel, Oregon Department of Education, Salem, Oregon.

(3) Continued serving as faculty advisor and university liaison to the Oregon Geographic Information Council, Salem Oregon. The function of the organization is to set standards for acquisition of Geographic Information Systems data in the state of Oregon.

(4) Continued duties as a board member and chair of the Oregon State Board of Geologist Examiners (OSBGE), Salem Oregon. The function of the organization is to set licensing standards for professional geologists in the state of Oregon.

(5) Serving as member of the national exam committee and council of examiners, Association of State Boards of Geology, Columbia, South Carolina. The function of the organization is to establish national testing standards for professional geology registration throughout the U.S.

(6) Continued serving as faculty advisor and university liaison to the State Geologic Map Advisory Committee, Oregon Dept. of Geology and Mineral Industries, Portland, Oregon. The function of the committee is to provide guidance and set priorities for state and federal geologic mapping initiatives in Oregon.

(7) Continued serving as university liaison for the Luckiamute Watershed Council, Monmouth, Oregon. Supervised GIS project focusing on the 2008 Rapid Bio-Assessment, included supervision of student intern.

(8) Served as participating scientist and faculty mentor in the Summer 2008 and 2009 Ecosystem Informatics Institute at Oregon State University and HJ Andrews Experimental Forest. The six-week program involves 15 graduate and undergraduate students from institutions around the country. I worked in collaboration with Desiree Tullos and Julia Jones (OSU) to lead a river geology/rafting trip on the Deschutes River.

(9) Peer Reviews: (a) conducted peer review for a manuscript entitled "Cinder cone degradation as a function of age for the Quaternary Potrillo Volcanic Field, Rio Grande Rift, New Mexico", in a Special Paper on the Rio Grande Rift by the Geological Society of America; (b) conducted peer review for a river restoration proposal for the Bureau of Land Management, Publics Lands Institute, Las Vegas, NV; (c) conducted a book proposal review for Enironmental Systems Research Institute entitled "GIS Tutorial in Earth Science and Geology"; (d) conducted manuscript review for Journal Geomorphology, paper entitled "Size of cinder cones: the case of Tenerife (Canary Islands, Spain)"

(10) Conceived, organized, and proposed field trip to coincide with the October 2009 Annual Meeting of the Geological Society of America, Portland, Oregon. Pending field trip is entitled "Northwest River Rendezvous: Geomorphology, Whitewater Rafting, and Fly Fishing in the Lower Deschutes Basin" and includes participants from the following organizations: Bureau of Land Management, Deschutes River Conservancy, the Upper Deschutes Watershed Council, Portland General Electric, and Wasco County Soil and Water Conservation District.

D. Professional Societies
(List memberships in professional organizations.)

Maintained active membership in the following professional organizations: Geological Society of America, American Geophysical Union, Association of American Geographers, Friends of the Pleistocene.

IV. HONORS AND AWARDS
(Provide a bulleted list of honors and awards that you received in the past academic year.)

Nothing this year, just a bunch of plain old work.

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH
(Provide a bulleted list of challenges and barriers to achievement in your role as a faculty member at WOU. Also list any plans for professional growth and/or mitigation of challenges.)

(1) The anomalously high adjunct/tenure line faculty ratio (60%) in the Dept. of Earth and Physical Science is a major barrier to program development. Our perennial request for an Earth / Physical Science Education Specialist was denied by admin. Given that our department has only 4 tenured faculty members out of a total of 10 faculty, we are chronically hindered by lack of horsepower to contribute to departmental service tasks and development/assessment activities. As a result, only a couple faculty members are able and motivated to take on the service/reporting chores for the department. It's tiring and demoralizing to watch other better-staffed departments in the division advance, while we are hindered by a lack of tenure-line work horses who are committed to the long term mission of the institution.

(2) There is a chronic lack of time for scholarship outside of teaching and service. My research moves along at a slow pace, with the use of student assistants, but finding the time and space to publish manuscripts is very limiting to professional advancement. This is a chronic problem at WOU.

(3) Increasing administrative demands for assessment reports: faculty workload is increasing with persistent calls for assessment data by upper administration, however there has been little to no investment in FTE, professional development, or faculty support services to help manage the growing expectations for administrative reporting.

(4) Teaching load reduction associated with Division Chair duties has resulted in removing me from the ES100 teaching rotation. ES100 is one of our most important program activities and benefits from the diverse participation of all faculty. My reduction in ES100 service load is a deficiency and weakens our program position during the interim while serving as NSM Chair.

VI. MISCELLANEOUS (Provide a bulleted list of any other items not covered above.)

(1) Conducted outreach meeting with WOU Admissions to raise awareness for the Earth Science / Geology program at WOU.
(2) Maintained an employment / internship bulletin board for Earth Science students.
(3) Participated in the year-end Natural Science and Mathematics Awards Ceremonies.
(4) Participated in WOU commencement ceremonies.

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS
(From your above summary, list the highlights of your faculty scholarship, student scholarship and service-related activities that you would like to see prominently promoted on the university web site, in news media, campus brochures, newsletters, and other public-relations materials. Provide a short blurb for each item with any recommendations on how you would like news of your work disseminated.)

The best promotional nugget for the near future is my pending GSA field trip entitled “Northwest River Rendezvous: Geomorphology, Whitewater Rafting, and Fly Fishing in the Lower Deschutes Basin”

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Name: Dr. Jeffrey Templeton **Report Date:** June 16, 2009

Title/Rank: Associate Professor of Geology **Years in Rank:** 6 years
Initial Hire Date at WOU: January 1995 **Years of Service:** 14+ years

I. TEACHING AND CURRICULUM

A. Course Census

List the courses that you have taught this year and corresponding enrollment data by term.

Fall Term 2008: ENROLLMENT
- ES 201W – Principles of Geology lecture .....42 students
- ES 201L – Principles of Geology labs (2 sections) .....22+20 students
- ES 301 – GeoTechniques: Petrographic Microscopy .....10 students
- 0.083 FTE reassignment for EPS Department Chair
- 0.25 FTE reassignment for PURE Coordinator Position

Winter Term 2009:
- ES 105 – Earth System Science II lecture .....59 students
- ES 450 – Introduction to Petrology .....10 students
- 0.083 FTE reassignment for EPS Department Chair
- 0.25 FTE reassignment for PURE Coordinator Position
- One-course Faculty Development Grant Reassignment

Spring Term 2009:
- ES 354 – Volcanoes and Earthquakes .....21 students
- ES 407 – Senior Seminar .....9 students
- 0.083 FTE reassignment for EPS Department Chair
- 0.25 FTE reassignment for PURE Coordinator Position

Summer Term 2009:
- ES 104 – Earth System Science I lecture.....22 students
- ES 104L – Earth System Science I lab .....22 students

B. Course Development and Improvement

Indicate any courses that were new preparations, significantly revised preparations, and anything significant about your efforts in these courses. Describe new techniques, materials, or technologies that were incorporated into your classroom teaching. Include any field trips or extended learning activities that took place outside of the classroom.

- ES 201, taught in Fall 2008, was a writing intensive course.

- ES 354 (Volcanoes and Earthquakes) was a new preparation and taught for the first time in Spring term. This course focused on earthquake phenomena and volcanic processes, with an emphasis on their impact to people, infrastructure, and natural resources in Oregon and the western United States. I designed a complete set of new lecture materials for this course. For each lecture topic, I developed classroom presentations in which text and graphics were woven together using PowerPoint to create active and animated slide shows. I also developed in-class activities, active learning strategies, and laboratory exercises that are designed to engage students in the learning process.

- I taught Earth Science 407 (Senior Seminar) for the third time this past academic year. This course is the capstone experience for graduating Earth Science majors. The class typically focuses on a pertinent Earth Science topic, which this year was "Potential for a Large Mega-Thrust Earthquake along the Cascadia Subduction Zone in the Pacific Northwest". Each student in the class became "experts" on a related sub-topic by reading scientific literature, leading group discussions, and giving formal presentations modeled after professional meetings to the campus community. Oral presentations were conducted as part of the Academic Excellence Showcase event held on May 28, 2009.

- I continued to refine the curriculum for the Introduction to Petrology course (ES 450) this past year. During winter term, I updated the "Thin Section Problem Solving" assignments, which are a series of active-learning strategies that require students to use petrography to solve geologic problems.

- During winter term, I continued to refine my lecture materials for Earth System Science II (ES 105) and to align the course content with the textbook adopted last year.

C. Program Assessment Activities

Provide a bulleted summary of assessment activities that you have been involved within the past year, e.g. embedded assessments, exit exams, assessment planning, assessment-based curriculum changes, related professional development, etc.

- Completed WOU Curriculum Log Program Assessment in Fall term 2008.
- Completed Academic Alignment Mapping Exercise in Fall term 2008.
- In Fall term 2008, held two meetings with Dean of the College of LAS and the Provost to discuss Assessment Plan for the proposed Earth Science Curriculum Changes.
- In collaboration with Dr. Steve Taylor, we prepared a detailed and extensive Assessment Plan for the proposed Earth Science Curriculum Changes. This document included: (1) an expanded response to "Question C" on the WOU Curriculum Log (Degree Program Change), "*How and when will the effectiveness of these changes be determined?*"; (2) Earth Science Embedded Assessment Template; (3) Spring 2008 Embedded Assessment Action Reports; (4) Examples of ES 407 Senior Seminar Capstone Projects; and (5) Sample of Student-Tracking Data.
- Attended Learning Outcomes & Assessment meeting on May 29, 2009.
- In Spring term 2009, developed and conducted two Embedded Assessment strategies for ES 407, Senior Seminar. These strategies are specifically aligned with the learning outcomes for the Earth Science Major.

D. Curriculum Changes

Provide a bulleted summary of curriculum changes that you were involved within the past year.

- The Earth Science program finalized a series curriculum changes this past academic year. In fall term, Dr. Steve Taylor and I prepared a detailed assessment plan for the proposed Earth Science Curriculum Changes that was submitted to the Dean of the College of LAS and the Provost (see above). These changes went through the full campus review process and were approved in December 2008. The catalog for 2009-2010 will incorporate these curriculum changes, which included the following: 1) addition of three new courses and updates to course numbers, titles and/or descriptions for eight existing Earth Science courses; 2) changes to the Earth Science Major, including incorporation of the new courses into the degree plan, addition of three new Mathematics options, revision of the Computer Science requirement, and concomitant credit hour change; and 3) modifications to the Earth Resources, Earth System Science, and Geology Minors to reflect to the course changes. These modifications represent a fine-tuning of Earth Science curriculum, the goal of which is to strengthen and modernize the major to best serve student needs.

II. RESEARCH & SCHOLARSHIP

A. Research Projects

Provide a bulleted summary of research projects you have worked on this year. Indicate any student involvement or collaborations in these projects.

- I continued to work on two research initiatives at Newberry Volcano near Bend, Oregon. Key outcomes from the past academic year are summarized in the following paragraphs.
  1. The objective of the first project is to constrain the petrogenetic evolution of the Newberry magma system using the Pleistocene ash-flow tuff deposits. This past year I analyzed 19 samples for a full-suite of major- and trace-elements via XRF and ICP-MS at the Washington State University GeoAnalytical Laboratory. In addition, I prepared billets for thin sections and continued conducting detailed petrography on the ash-flow tuff deposits at Newberry. The geochemical data and thin section studies will form the basis for an abstract to be submitted in August for a presentation at the Geological Society of America National meeting in October 2009. One of my goals for sabbatical this next year is to prepare a manuscript on the petrology of the Pleistocene ash-flow tuffs at Newberry.

  2. The second research project is focusing on the numerous cinder cones that punctuate the landscape at Newberry Volcano. This project has entailed the development of a digital geologic map and spatial database for the volcano. I am collaborating with Dr. Steve Taylor on this project, and we have actively involved students in collecting digital map data using GIS software and analyses. We are planning to prepare a manuscript on this project during the upcoming summer.

- This past academic year I continued disseminating the results of a curriculum improvement project that was funded through the National Science Foundation. I published an abstract and gave a presentation at the Oregon Academy of Science meeting held on the WOU campus in late February. For this project, I have developed a pedagogical model that integrates geologic problem solving with petrographic microscopy and digital image analysis in two courses in the Earth Science major at WOU. A key objective in the next year is to submit the curriculum development materials to the SERC website and to prepare a manuscript for the *Journal of Geoscience Education*.

- I collaborated with several colleagues (Rob Winningham, Bryan Dutton, and Steve Scheck) in preparing and submitting a manuscript for publication in the Council on Undergraduate Research Quarterly Fall 2009 issue, focusing on "How to Talk with Administrators about Undergraduate Research". We submitted an article prospectus in January and learned that our article idea was accepted in late February. Our manuscript, entitled "A Grassroots Faculty-Driven Initiative to Institutionalize Undergraduate Research: The Ins and Outs of Cultivating Administrative Support", was submitted in April, has been reviewed, and was recently accepted for publication.
- Another goal of my upcoming sabbatical is to complete and submit a manuscript entitled "Petrologic Constraints on the Evolution of a Continental Silicic Magma Chamber: Mickey Pass Tuff, West-Central Nevada". Collaborating with Dr. Anita Grunder from Oregon State University.
- I began working with an undergraduate student (Brittnie Andrew) on a research project that focuses on a mafic dike system exposed in northwestern Arizona. A collection of samples that are well constrained by detailed field mapping are ideal for an undergraduate research project using petrographic microscopy and digital image analysis to study textural and phenocryst relationships within the dike.

B. Peer-Reviewed Publications

Winningham, Robert G., **Templeton, Jeffrey H.**, Dutton, Bryan E., and Scheck, Stephen H., 2009, A grassroots faculty-driven initiative to institutionalize undergraduate research: The ins and outs of cultivating administrative support: Council on Undergraduate Research Quarterly, *in press*.

C. Presentations and Refereed Abstracts

I published the following abstract and presented the results of an NSF-funded geoscience education research project at the Oregon Academy of Science meeting on February 28, 2009.

Templeton, Jeffrey H., 2009, Thin section problem solving assignments: An inquiry-based, active-learning strategy for undergraduate Earth Science students: Proceedings of the Oregon Academy of Science, v. LXVIII, p. 54-55.

D. Grant Writing Activities

Include proposal title, authors, funding source, amount, and status on funding request.

III. FACULTY SERVICE

A. Student Advising

Provide a bulleted list of activities related to academic advising, number of advisees, programs in which you advise, etc.

- Adviser for Earth Science majors (16 advisees).
- Adviser for Earth Resources Earth System Science, and Geology minors (5 minor advisees).
- Adviser for Graduate Students in Master of Science in Education program (2 advisees).

E. WOU Institutional Service

Provide a bulleted list of department-division-university service duties that you have carried out, e.g., scheduling, recruiting activities, student clubs, search committees, faculty senate, mentoring, etc.

Departmental/Program service duties

- Continued serving as **Chair of the Earth and Physical Science Department**. In May 2009, was re-elected for a third three-year term.
- Responsible for all scheduling, staffing, and related tasks for the Earth System Science sequence (ES 104, 105, and 106) lecture and lab courses, lower- and upper-division Earth Science courses, and Physics lecture and lab courses.
- Worked with colleagues to successfully search for and hire a new Earth System Science lab preparator.
- Managed the departmental budget, which was over $41,000 this year.
- Ordered equipment and materials for Earth System Science and Geology courses.

Divisional service duties

- Member of the **Division of Natural Science and Mathematics Budget Committee** and **Building Committee**.
- Worked with department heads of Biology, Chemistry, and Math to distribute Division Travel funds.
- Represented the Earth Science program at two **Academic Fair/Preview Days** (October 18, 2008 and November 8, 2008). Prepared display for prospective students.
- **SOAR** (tbd date during summer 2009). Will assist incoming students in the Earth and Physical Science Department with scheduling.

University-wide service

- Served as the **Chair of the Academic Excellence Showcase Planning Committee**. I had full responsibility for planning and organizing the campus-wide Academic Excellence Showcase held on May 28, 2009. Over 350 students presented their scholarly work at this highly successful event.
- Continued serving as the **Coordinator of the Program for Undergraduate Research Experiences** (PURE) at WOU for the 2008-09 academic year. Organized meetings of the PURE Executive Committee and related activities. In September 2008, met with new Provost and Dean of LAS to discuss PURE initiative and presented information about PURE and the Showcase to incoming faculty at New Faculty Orientation. Also, spearheaded the preparation of organizational documents, including bylaws and mission statement.
- Actively participated as a member of the **Faculty Senate Ad Hoc Committee on LACC/General Education Review**. Played a key role on the **Sub-Committee** that developed a Mission Statement and Learning Outcomes for the LACC and General Education at WOU.
- Other notable campus-wide service activities included the following:
  - Attended commencement (June 13, 2009).

C. Leadership, Professional Service and Community Outreach

List professional service completed this past year, include consulting activities and leadership roles.

- Continued to serve as the WOU **Campus Representative** for the Geological Society of America.
- Reviewed Oregon NASA Space Grant Consortium Undergraduate Scholarship Applications, April 2009.

D. Professional Societies

List memberships in professional organizations.

- **Member**, Geological Society of America (GSA); American Geophysical Union (AGU); National Association of Geoscience Teachers (NAGT).

IV. HONORS AND AWARDS

Provide a bulleted list of honors and awards that you received in the past academic year.

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH

Provide a bulleted list of challenges and barriers to achievement in your role as a faculty member at WOU. Also list any plans for professional growth and/or mitigation of challenges.

Challenges and Barriers:

- The Earth and Physical Science department needs at least one additional tenure-track faculty position.
- The repeated call for program assessment documentation, without any concomitant decrease in other areas of our workload (e.g., teaching load), dilutes my effectiveness as a teacher and a scholar.

Plans for Professional Growth:

- I will be on sabbatical for Winter and Spring terms during the 2009-10 academic year. This sabbatical will allow me to achieve several of my long-standing research and scholarship objectives. The overall purpose of this sabbatical is to conduct geologic research leading to the completion of two long-term projects and to make head-way on a third project. The specific goals are: (1) to prepare and submit a manuscript focusing on the geochemistry and petrology of the reversely zoned Mickey Pass Tuff, western Nevada; and (2) to continue a research project focusing on the petrology and volcanology of Pleistocene ash-flow tuffs exposed at Newberry Volcano in central Oregon, culminating in the preparation and submission of a manuscript. In addition, I will conduct petrographic studies and digital image analyses of samples from a mafic dike system in NW Arizona.

VI. MISCELLANEOUS

Provide a bulleted list of any other items not covered above.

- I worked extensively with the Physical Plant (Tony Kment, Donna Litchfield, and Ron Richardson) on developing the plans for remodeling NS 017, which will take place this summer. Also assisted in developing plans for NS 101.

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS

From your above summary, list the highlights of your faculty scholarship, student scholarship and service-related activities that you would like to see prominently promoted on the university web site, in news media, campus brochures, newsletters, and other public-relations materials. Provide a short blurb for each item with any recommendations on how you would like news of your work disseminated.

- The volcanology and petrology research initiatives at Newberry Volcano might be interesting from a Public Relations and Promotional standpoint.
- The new curriculum / pedagogical model for teaching petrology that I have developed might be interesting.
- The high degree of participation by NSM Division in Academic Excellence Showcase, in particular the Earth Science program, should also be noted.

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Name: Donald E. Ellingson **Report Date: 15 Jun 2009**

Title/Rank: Adjunct Instructor **Years in Rank: 11 years**

Initial Hire Date at WOU: Jan 1998 **Years of Service: 11 years**
plus 2 years as a GTA in the late 1980s

I. TEACHING AND CURRICULUM

A. Course Census

(List the courses that you have taught this year and corresponding enrollment data by term.)

Fall 2008 -- 251 students
ES 104 Earth System Science I, two lectures, 123 students -- 6 classroom hrs/wk
ES 104L Earth System Science I Lab, five labs, 120 students -- 10 classroom hrs/wk
ES 104X Peer Led Instruction, 8 students -- 1 hr/wk

Winter 2009 -- 133 students
GS 351 Astronomy, 16 students -- 3 classroom hrs/wk
GS 202H Honors Natural Science, 12 students -- 3 classroom hrs/wk
GS 202L Honors Lab, 12 students -- 2 classroom hrs/wk
ES 105L Earth System Science II Lab, four labs, 91 students -- 8 classroom hrs/wk
ES 105X Peer Led Instruction, 2 students -- 1 hr/wk

Spring 2009 -- 240 students
ES 390 Meteorology, 21 students -- 3 classroom hrs/wk
ES 106 Earth System Science III, two lectures, 119 students -- 6 classroom hrs/wk
ES 106L Earth System Science III Lab, four labs, 93 students -- 8 classroom hrs/wk
ES 106X Peer Led Instruction, 7 students -- 1 hr/wk

B. Course Development and Improvement

(Indicate any courses that were new preparations, significantly revised preparations, and anything significant about your efforts in these courses. Describe new techniques, materials, or technologies that were incorporated into your classroom teaching. Include any field trips or extended learning activities that took place outside of the classroom.)

GS 351 (Astronomy), ES 390 (Meteorology), and GS 202H (Honors Science) were significantly revised. The significance:

Astronomy is a rapidly changing field and I focused more on space exploration -- a tremendous amount of new data is flowing from many places in the solar system.

Over the last few years my Meteorology course has transitioned from a course mostly about weather and weather forecasting to a course largely about climate and climate change. A guest speaker (Bill Bradbury, former Oregon Secretary of State) added emphasis on the significance of global warming.

This was my fifth year teaching Honors Science, and I completely revised the course. I used different textbooks, prepared items for eReserves, and edited all the labs. The course featured brief weekly student presentations supported by one visual -- it was fun and the Final Exam

results were the best ever. (As a point of interest, I've never met whoever it is that manages the Honors Program.)

In all of my classes I've detected a growing need for brushing up on math and reading. I've incorporated more of both in my ES 10X labs -- "do the math" -- "read the instructions, they tell you how to do the job."

C. Program Assessment Activities
(Provide a bulleted summary of assessment activities that you have been involved within the past year, e.g. embedded assessments, exit exams, assessment planning, assessment-based curriculum changes, related professional development, etc.)

My assessment program is basically what I learned in the USAF's Air Training Command -- state your objectives -- teach the objectives and other interesting, relevant things -- test student learning of objectives, preferably with a multiple-choice test which is, well, objective -- analyze test results and adjust as necessary. The big tests are the mid-term and final, but weekly quizzes help students learn (or learn what they are supposed to learn), and help the instructor adjust quickly.

D. Curriculum Changes
(Provide a bulleted summary of curriculum changes that you were involved within the past year.)

Every year I say to someone that we need a good physics 101 course. Galileo and Newton were physicists!

Also we need a climatology course -- teach meteorology (weather) as we did before the focus on global warming, and then really dig into global warming in a follow-on climatology course.

II. RESEARCH & SCHOLARSHIP

A. Research Projects
(Provide a bulleted summary of research projects you have worked on this year. Indicate any student involvement or collaborations in these projects.)

I analyzed data collected from my students last year about how they learn best in ES 10X labs. Tentative conclusion: They learn best from discussions in their work group, and least from the computers in the lab room. The Instructor and simple (cheap) training aids ranked somewhere in between.

This year I collected data about study habits. I haven't analyzed it yet, but a quick scan reveals that student study habits really vary (e.g. "How much did you learn from reading?" Responses range from 0 % to 95 %.)

C. Presentations and Refereed Abstracts
I made a presentation on Global Warming during Global Warning Awareness Week last winter.

E. Professional Certifications, Licenses, Other Specialty Credentials

I'm a certified USAF Air Training Command Instructor and have an Oregon Certificate (expired) to teach math, physics, chemistry, integrated science, and social science, all at the 5-12 level.

I'm a certified weather forecaster for airfields in Japan, Texas, Thailand, England, and Germany.

I have been the Commander of three military units (weather offices) in England and Germany.

I have been a member of the NATO Military Committee for Weather Plans and Operations.

III. FACULTY SERVICE

A. Student Advising

(Provide a bulleted list of activities related to academic advising, number of advisees, programs in which you advise, etc.)

I do a lot of advising, but I'm not an academic advisor.

F. WOU Institutional Service

(Provide a bulleted list of department-division-university service duties that you have carried out, e.g., scheduling, recruiting activities, student clubs, search committees, faculty senate, mentoring, etc.)

I was the faculty advisor to the Astronomy Club.

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH

(Provide a bulleted list of challenges and barriers to achievement in your role as a faculty member at WOU. Also list any plans for professional growth and/or mitigation of challenges.)

As an adjunct I have no opportunity for professional growth at Western Oregon University. I mitigate this situation by studying things I want to study and things that I think will be helpful to society if I understand (and teach) them better.

My teaching load is such that I constantly have to decide on which things to try to do well, and which students to try and reach . . . there's no way to do everything as well as I would like to. (Compare the teaching load of science adjuncts to the workload of others -- you'll see.)

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS

(From your above summary, list the highlights of your faculty scholarship, student scholarship and service-related activities that you would like to see prominently promoted on the university web site, in news media, campus brochures, newsletters, and other public-relations materials. Provide a short blurb for each item with any recommendations on how you would like news of your work disseminated.)

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Due Date: June 16, 2009 *Attach a current copy of your CV and send electronic copies as email attachments to Steve Taylor, taylors@wou.edu*

Name: Jeremiah Oxford **Report Date: 6/15/2009**

Title/Rank: Adjunct Instructor **Years in Rank:1.5**

Initial Hire Date at WOU: 1/2008 **Years of Service: 1.5**

I. TEACHING AND CURRICULUM

A. Course Census
(List the courses that you have taught this year and corresponding enrollment data by term.)

ES 104: Fall Term: 60 students enrolled
ES 104 Lab: Fall Term: 66 students enrolled

ES 105: Winter Term: 96 students enrolled
ES 105 Lab: Winter Term: 131 students enrolled

Es 106: Spring Term: 106 students enrolled
Es 106 Lab: Spring Term: 131 students enrolled

B. Course Development and Improvement
(Indicate any courses that were new preparations, significantly revised preparations, and anything significant about your efforts in these courses. Describe new techniques, materials, or technologies that were incorporated into your classroom teaching. Include any field trips or extended learning activities that took place outside of the classroom.)

As a new instructor, much of my time and effort went into building my lectures and lesson plans. I spent extra time in the office writing tests, activities, and other assignments. I employed my art skills in drawing diagrams for class activities and shared my visual aids with other Earth Science faculty. My course curriculum was primarily built from past syllabi provided by the department chair. I found the most benefit in regularly communicating with and seeking advice from the other Earth Science instructors who were more experienced. I kept in regular communication with colleagues in order to keep my curriculum consistent with theirs. I took the liberty of doing some experimentation in what would be effective activities in class. Much of my lectures centered on PowerPoint presentations in combination with frequent use of the document camera for drawing illustrations or solving math-based problems. In addition, I enjoyed using my own geological specimens as visual aids. Overall, I look forward to improving on my course materials now that I have gained experience from this first full year of teaching.

C. Program Assessment Activities
(Provide a bulleted summary of assessment activities that you have been involved within the past year, e.g. embedded assessments, exit exams, assessment planning, assessment-based curriculum changes, related professional development, etc.)

D. Curriculum Changes
(Provide a bulleted summary of curriculum changes that you were involved within the past year.)

II. RESEARCH & SCHOLARSHIP

A. Research Projects
(Provide a bulleted summary of research projects you have worked on this year. Indicate any student involvement or collaborations in these projects.)

B. Peer-Reviewed Publications

C. Presentations and Refereed Abstracts

D. Grant Writing Activities
(Include proposal title, authors, funding source, amount, and status on funding request.)

E. Professional Certifications, Licenses, Other Specialty Credentials

III. FACULTY SERVICE

A. Student Advising
(Provide a bulleted list of activities related to academic advising, number of advisees, programs in which you advise, etc.)

G. WOU Institutional Service
(Provide a bulleted list of department-division-university service duties that you have carried out, e.g., scheduling, recruiting activities, student clubs, search committees, faculty senate, mentoring, etc.)

- Academic advisor for the Japanese Pop Culture Club

C. Leadership, Professional Service and Community Outreach
(List professional service completed this past year, include consulting activities and leadership roles.)

D. Professional Societies
(List memberships in professional organizations.)

- Membership in the Geological Society of America.
- Membership in the American Geophysical Union.

IV. HONORS AND AWARDS
(Provide a bulleted list of honors and awards that you received in the past academic year.)

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH
(Provide a bulleted list of challenges and barriers to achievement in your role as a faculty member at WOU. Also list any plans for professional growth and/or mitigation of challenges.)

- The greatest challenge was developing effective and efficient ways of grading labs while simultaneously developing my lectures and activities.
- Next year, I am thinking of placing more weight on lab exams in terms of the percentage of the total lab points. I felt that too much time went into meticulous grading of the general lab activities since I had based approximately 90% of the lab score on the regular lab activities.
- I often relied on resources outside of the text book to find additional useful visual aids for instruction or activities.
- I plan to draw more of my own illustrations in order to improve on existing visual aids for Earth science instruction.

VI. MISCELLANEOUS (Provide a bulleted list of any other items not covered above.)

- One of the greatest rewards in teaching Earth Science was to inspire other students and to hear that some have developed a new appreciation for the surrounding natural world and its processes.
- In addition, there were a few students who inquired about working on a minor in Earth Science and a few who chose to work on a major in the Earth Sciences after taking the class.

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS
(From your above summary, list the highlights of your faculty scholarship, student scholarship and service-related activities that you would like to see prominently promoted on the university web site, in news media, campus brochures, newsletters, and other public-relations materials. Provide a short blurb for each item with any recommendations on how you would like news of your work disseminated.)

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Due Date: June 16, 2009 *Attach a current copy of your CV and send electronic copies as email attachments to Steve Taylor, taylors@wou.edu*

Name: Philip Wade **Report Date:** June 16, 2009

Title/Rank: NTT Instructor **Years in Rank:** 12
Initial Hire Date at WOU: 9-16-1998 **Years of Service:** 12

I. TEACHING AND CURRICULUM

A. Course Census

Summer 2008

ES 406 (enrollment – 1) 3-credit special studies on Climate Change Educational Resources

GS 313W (enrollment – 12)

ES 106 (enrollment – 13) New instructional technique included use of American Geological Institute "EarthInquiry" computer Modules as assignments-(good response from students)

ES 106L (enrollment – 13)

ES 105 (enrollment – 25) revised preparation for 3-week course (2nd time Dept offered this course in summer). New Textbook (4th edition Hewitt) and revision of labs led to substantial preparation time.

ES 105L (enrollment – 25)

Fall 2008

GS 313W (enrollment – 24) Writing intensive course. Major revisions to align with recently released Oregon Dept. of Education "Draft 1" Core Standards additions/changes.

GS 312- (enrollment – 22)

Major revisions to align with recently released Oregon Dept. of Education "Draft 1" Core Standards additions/changes.

ES 106L (enrollment – 23)

ES 104L (enrollment – 23)

CH 104L (enrollment – 26) New prep for chemistry lab course.

Winter 2009

GS 313W (enrollment – 24) Writing intensive course. Introduced a new 2-week Google Earth Project. Major revisions to align with recently released Oregon Dept. of Education "Draft 2" Core Standards additions/changes.

GS 312- (enrollment – 22)

Major revisions to align with recently released Oregon Dept. of Education "Draft 2" Core Standards additions/changes.

ES 104 (enrollment – 64) New instructional technique included use of American Geological Institute "EarthInquiry" computer Modules as assignments-(good response from students).

Spring 2009

GS 313W (enrollment – 24) Writing intensive course. Major revisions to align with recently released Oregon Dept. of Education "Final Draft" Core Standards additions/changes.

GS 312- (enrollment – 21)

Major revisions to align with recently released Oregon Dept. of Education "Final Draft" Core Standards additions/changes.

ES 106L (enrollment – 23)

GS 203H-and GS 203HL (enrollment – 17) (co-taught with Arlene Courtney)

(Honors Science –Alternative Energy) "Essentially" New Course with substantial preparation. Developed GS 203H Blog for course. Used on-line assignments (e.g. Blog) and in-class labs. Major prep time for class Video Project that was presented at AES, 2009. Class participated in WOU Academic Excellence Showcase. Students required to use network available research tools such as Flicker, Diigo, and RSS feeds. Scheduled field trip to the 4th annual Northwest Solar Exposition held in Portland at convention center was cancelled due to SWINE FLU closure.

Field Trips

GS 203H Scheduled field trip to the 4th annual Northwest Solar Exposition held in Portland at convention center was cancelled due to SWINE FLU closure.

B. Course Development and Improvement

GS 313W and GS312

- Revisions to curriculum in response to Oregon Dept. of Education Core Science Standards Revisions.
- GS 313W -Added new Google Earth 2-week activity to instruct students in use of GE as a teaching tool in K-8 classrooms.

GS 203H-and GS 203HL

- New Course with substantial preparation. Developed GS 203H Blog for course. Used on-line assignments (e.g. Blog) and in-class labs.
- Introduced students to network available research tools such as Flicker, Diigo, and RSS feeds.
- Major prep time for class Video Project that was presented at AES, 2009.
- Class developed ~90 minute DVD consisting of 9 student projects
- Class participated in WOU Academic Excellence Showcase.
- Scheduled field trip to the 4th annual Northwest Solar Exposition held in Portland at convention center was cancelled due to SWINE FLU closure.

C. Program Assessment Activities

- Embedded assessment for **GS 312 and GS 313W** consisting of Thematic Unit Project, 2-Teaching lesson developed and taught, and required students to conduct an "authentic" science project based on ODE Inquiry Science Work-Sample. Used 2 exams as content assessment vehicles.

- Embedded assessment for **GS 203H** included Blog discussion questions, in-class laboratory activities, video project presented at AES, 2009 and exams as content assessment vehicles. Students required to use internet research tool (Diigo) as to share information.
- Pre and Post survey instruments used to assess students' progress and learning in course.

D. Curriculum Changes

GS 313W

- Added new Google Earth 2-week activity to instruct students in use of GE as a teaching tool in K-8 classrooms.

GS 203H

- New Course with substantial preparation. Developed **GS 203H** Blog for course. Used on-line assignments (e.g. Blog) and in-class labs.
- Introduced students to network available research tools such as Flicker, Diigo, and RSS feeds.
- Major prep time for class Video Project that was presented at AES, 2009.
- Class developed ~90 minute DVD consisting of 9 student projects
- Class participated in WOU Academic Excellence Showcase.

II. RESEARCH & SCHOLARSHIP

A. Research Projects

- GccIFT: Global Climate Change Institute for Teachers Workshops: (June 2008 and August 2008) (~38 K-6 teacher participants). Participated in developing workshop curriculum and conducting workshops.
- Google Earth in the K8 Classroom: Conducted research in GS 313W course with graduate student Tanja Aas (MSE).

B. Peer-Reviewed Publications

- None

C. Presentations and Refereed Abstracts

- **The Story of Global Climate Change**. 1-hour workshop presented at National Science Teachers Association, Portland Meeting, October 2008. Presenter(s): Laurence Padman (Earth & Space Research: Corvallis, OR); Adele C. Schepige (Western Oregon University: Monmouth, OR); Deanie Anderson (Western Oregon University: Monmouth, OR); Susan Dauer (Western Oregon University: Monmouth, OR); William Schoenfeld (Western Oregon University: Monmouth, OR); Philip D. Wade (Western Oregon University: Monmouth, OR)

- **Is Earth Catching a Fever? Illustrating and Assessing the Data.** 1-hour workshop presented at National Science Teachers Association, Portland Meeting, October 2008. Presenter(s): Philip D. Wade (Western Oregon University: Monmouth, OR); William Schoenfeld (Western Oregon University: Monmouth, OR); Adele C. Schepige (Western Oregon University: Monmouth, OR); Deanie Anderson (Western Oregon University: Monmouth, OR); Laurence Padman (Earth & Space Research: Corvallis, OR)

D. Grant Writing Activities

- **Global Climate Change Institute for Teachers (GccIFT): Improving the Scientific Literacy of K-8 Teachers in the Pacific Northwest.** PI's are Schoenfeld and Schepia e.t al. Funding from NASA for 2009-20011

E. Professional Certifications, Licenses, Other Specialty Credentials

III. FACULTY SERVICE

A. Student Advising

- College of Education student evaluations for admittance into K8 licensure program.

H. WOU Institutional Service

- Committee member Tanja Aas Master of Science in Education; Google Earth in the Elementary Classroom, Defended May 2009.
- Member 2009 WOUFT Collective Bargaining Team representing Non Tenure Track faculty.

C. Leadership, Professional Service and Community Outreach

- Continued volunteer work at Hoover Elementary School for Science Outreach (~4 hours/week)

D. Professional Societies

- National science Teachers Association
- Geological Society of America

IV. HONORS AND AWARDS

- None

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH

VI. MISCELLANEOUS (Provide a bulleted list of any other items not covered above.)

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS

Natural Science & Mathematics 2008-2009
Annual Faculty Activity Report

Due Date: June 16, 2009 *Attach a current copy of your CV and send electronic copies as email attachments to Steve Taylor, taylors@wou.edu*

Name: Kenneth Walsh **Report Date: 06/16/09**

Title/Rank: Instructor **Years in Rank: 1st**
Initial Hire Date at WOU: September 2008 **Years of Service: 1st**

I. TEACHING AND CURRICULUM

A. Course Census

Fall, PH 201 (30 students)
Winter, PH 202 (27 students)
Spring, PH 203 (19 students)

B. Course Development and Improvement

(Indicate any courses that were new preparations, significantly revised preparations, and anything significant about your efforts in these courses. Describe new techniques, materials, or technologies that were incorporated into your classroom teaching. Include any field trips or extended learning activities that took place outside of the classroom.)

Since this is my first time teaching this course, all of the preparations were new. This course consisted of a combination of PER (Physics Education Research) approved techniques. Traditional lecture, with periodic "quick quizzing" to assess content retainment, provided a good base for active engagement and group discussions. During lecture, physical demonstrations were used to provide evidence of physical laws. Lab time was spent performing experimental labs in combination with answering questions from theoretical, applet based, demonstrations. Students worked in groups of 3 to 5 during recitation and lab. Time in recitation was spent going through worksheets that utilize a variety of PER techniques created by Lillian McDermott at University of Washington. Conceptual concepts were emphasized heavily, requiring continual and careful interaction with the students. Occasionally, groups would solve different story problems and present their solutions to the class.

C. Program Assessment Activities

Non-Graded:

- Lecture based "quick quizzes."
- In-class worksheets had many checkpoints requiring subject mastery.
- Labs culminated with questions that required thorough understanding of the experiment and correct connections with theories.

Graded: (per term)

- Weekly homework exercises (20%)
- Two midterm exams (each 20%)
- One final exam (30%)
- Lab/Recitation performance (10%, Pass/Fail)

D. Curriculum Changes

- Expanded the curriculum of the PH2XX year sequence to include 23 chapters of Knight/Jones/Field, *College Physics*, 1st. edition.
    - Subjects added included: optics, modern physics and thermo-dynamic heat engines.
- Laboratory additions included: Wimshurst machine, Van-de Graaff generator, Faraday flashlight, 50,000V hand held Tesla coil, "Real Image" illusion demonstration and many other laboratory devices, all to be used for expansion of the lab based, hands-on curriculum.

II. RESEARCH & SCHOLARSHIP

A. Research Projects

- First principle calculations of impurities in metals with graduate adviser Dr. Henri Jansen, OSU.

B. Peer-Reviewed Publications

N/A

C. Presentations and Refereed Abstracts

- Invited speaker for WOU, Natural Science Division Seminar Series, April 29th, 2009.

D. Grant Writing Activities

N/A

E. Professional Certifications, Licenses, Other Specialty Credentials

N/A

III. FACULTY SERVICE

A. Student Advising

N/A

I. WOU Institutional Service

N/A

C. Leadership, Professional Service and Community Outreach

N/A

D. Professional Societies

N/A

IV. HONORS AND AWARDS

N/A

V. CHALLENGES AND PLANS FOR PROFESSIONAL GROWTH

- Completion of my research thesis will open a large amount of time that will be focused towards teaching.
- I will prepare papers for publication that are based on my PhD thesis.

VI. MISCELLANEOUS

VII. PUBLIC RELATIONS AND PROMOTIONAL HIGHLIGHTS

I serve the Western Oregon University community best through my innovative teaching practices. A student's scholarship in physics requires analytical thinking skills, visualization as well as heavy application of math. I bring to WOU an instructor that practices proven PER (Physics Education Research) methods to aid students best in their complicated journey to master physics.