Application for Paid Sabbatical
(Faculty Professional Development Long-Term Leave)

*****Please review guidelines and criteria before completing this application*****

Outline:

Part I - Applicant Information

Part II – Guidelines for Sabbaticals and Applicant Statement

Part III - Leave Information

Part IV - Division Chair Impact Statement

Directions:

Submit your proposal by email as a PDF to fpd@lanecc.edu before the deadline.

Note: Model proposals are available online, and mentors are available on request.

I. Applicant Information:

Name: Margaret Helzer

Department/Division: Social Science

Email address: helzerm@lanecc.edu

Ext.: 5026

FTE: 1.0

Years at Lane under contract: 9 Previous paid sabbatical leave dates (if applicable): ___NA___

# of terms of paid sabbatical leave awarded in the past: # of years since last paid sabbatical: NA

Term(s) requested: Winter 2014

Sabbatical Project Title: Rimrock Draw Rockshelter: Investigations at One of the Oldest Archaeological Sites in North America

Leave Location(s): Dexter / Eugene, Oregon

II. Guidelines for Sabbatical Awards and Applicant Statement:

Important note:
Please remember that sabbatical awardees are required to submit a written report and make an oral presentation.

Written report:
Your written report must be submitted within two months following your return from sabbatical leave. Please submit your report as a Word document or PDF attached via email to the Faculty Professional Development Coordinator. Written reports should include a thorough review of the objectives of the sabbatical along with a detailed discussion of outcomes of the project and how the goals were met during the research/project process as well as an explanation of any significant changes you made to the approved sabbatical plan.

Written reports will be filed with the Sabbatical Committee and the appropriate vice president and will also be published and available to the public on the Faculty Professional Development website.

Oral presentation:
An oral presentation is required. The presentation will be approximately 10-15 minutes with an additional 5 minutes for questions and answers. If you would like to use any AV equipment, please contact the Faculty Professional Development Coordinator in advance. Presentation time is limited, so oral presentations should summarize all sabbatical activities. All college employees will be invited to attend the oral reports, and all reports should exemplify professionalism and clearly demonstrate a worthwhile use of professional development funding.

Optional presentations:
In addition to the required oral and written reports, you may choose to do an extra report. Please contact the Faculty Professional Development Coordinator to arrange any of the following:

_____ Extended report or Academic Colloquium: (45 minutes + 10 minute questions and answer session)

__X___ Department presentation: Presentation of any length to department/division colleagues

Professional Activities Funding:
If you have funds left in your rolling three-year Professional Activities (Short Term Leave) balance, you may apply separately to the Professional Activities committee to cover sabbatical related travel expenses. **Please remember that you must apply for funding for travel in advance.**

I have read the guidelines, and I understand them. If accepted, I agree to complete the sabbatical project as described in my application as well as the written and oral reports. I will contact the Faculty Professional Development Coordinator if I am unable to complete any portion of my proposed plan or if I would like to substitute a different activity for one outlined in my plan, and I understand that I may be asked to submit any proposed changes to the Paid Sabbatical Committee. I understand that I will not be granted a sabbatical in the future if I do not follow these guidelines and complete the oral and written reports. (The committee recognizes that there may be minor changes to the timeline and your proposed plan.)

Applicant signature: Margaret Helzer Date: January 31, 2012

III. Leave Information: Application questions and criteria for selection (30 points)

1. Intent and Plan

I intend to spend Winter Term 2014 conducting analysis and writing a report on botanical samples collected from Rimrock Draw Rockshelter, a Pleistocene-aged (ca. 15,000 year-old) archaeological site located in eastern Oregon. Rimrock Draw Rockshelter could possibly represent the oldest human occupation site in North America. The focus of my research is on the identification and analysis of charred wood, seeds, and other plant remains extracted from fire hearths in the site.

Background

I received a Ph.D. in Anthropology from the University of Oregon in 2001. My dissertation research focused on paleoethnobotany, the study of charred plant remains preserved in archaeological sites. After completing the degree, I worked as a paleoethnobotanist and archaeologist for the Oregon State Museum of Anthropology. When I accepted my current position as instructor of anthropology at Lane Community College, I felt it was important to stay engaged in research because it informs and enhances my role as teacher and mentor. I have maintained strong working relationships with professionals in the discipline and have successfully encouraged LCC students to participate in archaeology projects and research outside the college.

In the fall of 2011, Bureau of Land Management (BLM) archaeologist Scott Thomas and University of Oregon archaeologist Dr. Patrick O'Grady asked me to participate in research at Rimrock Draw Rockshelter, located near the town of Riley, Oregon in Harney County. Test excavations at the site revealed that Rimrock Draw had the potential to be one of the more significant archaeological sites in North America. Projectile points and other stone tools found at the site suggested an ancient human occupation dating back as far as 12,000 – 13,000 years ago. In addition, the deposits were deep (over 8 feet) and undisturbed. If Rimrock Draw were to produce Clovis points (a highly distinctive thrusting spear technology that was wide-spread in North America at 13,000 years ago but only existed for a thousands years or less), it would be the first buried Clovis site ever found in the state of Oregon.

The test excavations at the site also revealed evidence of fire hearths where charred wood and other plant remains were preserved. This is significant because it provides an opportunity to investigate and reconstruct paleo-climatic changes in the region. Vegetation near the site today is characterized by sagebrush steppe with a few scattered juniper trees in the distance. There is a dry lakebed nearby and a dry streambed that runs close to the rockshelter. In ancient times, the lake and the streambed would have

been filled with water and the landscape and vegetation would have been quite different than it appears today. Identifying the charred botanical materials in the deposits will lead to a better understanding of the past environment, as well as the plants people used in the past for food, medicine, and fuel.

In the summer of 2012, the University of Oregon Archaeology Field School continued excavations at Rimrock Draw Rockshelter. At the request of the UO and the BLM, I taught a Paleoethnobotany Field Class in conjunction with the archaeology field school. My students learned how to collect soil samples from the fire hearths, process the samples using soil flotation methods, and identify the charred fragments of wood and seeds by using microscopes set up in our field lab.

Analysis from the 2012 summer field school is ongoing, but has thus far revealed even more exciting results than we originally anticipated. At the bottom of one excavation unit (7-8 feet below the surface), there were stone scraper tools, Pleistocene camel teeth, and volcanic tephra traced to a Mt. St. Helens eruption over 15,000 years ago. The 15,000 year-old date is highly significant. Rimrock Draw Rockshelter may represent a human occupation site older than Clovis (once thought to be the associated with the first Americans) and most certainly will help inform us about the earliest human populations on this continent.

The UO Archaeology Field School and my Paleoethnobotany Field Class will return next summer, 2013, to complete the excavations at Rimrock Draw Rockshelter. The purpose of my sabbatical will be to continue the research and data analysis associated with the 2013 excavations.

Goals:

The primary goal of my sabbatical is to conduct laboratory analysis of charred plant remains collected from Rimrock Draw Rockshelter and to begin writing up the results in preparation for publication in a scholarly, peer-reviewed journal. The significance of the site and the size of the project have led to many hours dedicated to this research. The University of Oregon and the BLM have budgeted for my involvement during the summer teaching and lab analysis. No additional funds are available for further work, so the research I will be engaged in during my sabbatical will not result in additional pay by an outside source.

Specific research objectives associated with paleoethnobotanical analysis at Rimrock Draw Rockshelter include:

- identify and analyze charred plants remains (charcoal, seeds, twigs, and roots) found throughout the deposits in the site for the purpose of reconstructing past climates in the region

- carefully choose charred wood and charcoal samples found in association with significant hearth features or other artifacts in the site for the purpose of establishing dates of occupation via radiocarbon analysis

- identify and analyze charred plants remains (charcoal, seeds, twigs, and roots) found throughout the deposits in the site that would inform us about culturally significant plants used for food, medicine, or fuel

- correlate evidence for culturally significant plants with one of the earliest human occupations in the Americas

Activities and Timeline:

Primary activities for this sabbatical involve laboratory research, analysis, tabulating results, and writing a report in preparation for publication. The research will also involve continual collaboration with University of Oregon researchers, BLM archaeologists, and paleoethnobotany lab assistants. Much of the work will be conducted in my lab at my home in Dexter, but I will also make frequent visits to the University of Oregon archaeology lab.

Week 1 (January 6 – 10):
Pick up samples from the UO archaeology lab. Organize/catalog soil and charcoal samples collected from the site during summer excavations. Work with Dr. O'Grady to prioritize the most important samples to analyze. Transport samples to my home lab and begin analysis.

Week 2: (January 13 – 17):
Work with a lab assistant to process soil samples using water flotation. Sort dried samples using a 70x binocular microscope. Identify charred seeds, wood, and other plant remains in the samples.

Week 3: (January 20 – 24):
Continue working with lab assistant to process soil samples using water flotation. Sort dried samples using a 70x binocular microscope. Identify charred seeds, wood, and other plant remains in the samples.

Week 4: (January 27 – 31):
Sort charcoal samples and begin identification of wood species.

Week 5: (February 3 – 7)
Continue analysis of charcoal samples. Choose charcoal and/or seed samples for radiocarbon analysis.

Week 6: (February 10 – 14)
Continue work with lab assistant, tabulate data in a spreadsheet, begin analysis and interpretation of results.

Week 7: (February 17 – 21)
Continue work with lab assistant, tabulate data in a spreadsheet, analyze and interpret results. Share emerging results with BLM and UO archaeologists.

Week 8: (February 24 – 28)
Begin writing up results in preparation for publication.

Week 9: (March 3 – 7)
Continue writing report.

Week 10: (March 10 – 14)
Continue writing report.

Week 11: (March 17 – 21)
Share results and report with BLM and UO archaeologists. Collaborate on an article for a peer-reviewed journal such as the journal *Science*.

Preparation:

Winter 2013:
Analysis of botanical samples collected during the summer of 2012 is ongoing in my lab at home. I am collaborating with a paleoethnobotany doctoral student at the UO, as well as Dr. Patrick O'Grady at the UO and Scott Thomas, BLM archaeologist.

Spring 2013:
-field trip to eastern Oregon to identify culturally important plants in bloom during the spring season.
-field trip to the Grand Rhonde reservation to collaborate with tribal members engaged in work on ethnobotany.

Summer 2013:
I will teach a field class in paleoethnobotany on site at Rimrock Draw Rockshelter. Although the course will be offered through the University of Oregon Summer Program, Lane Community College students will be encouraged to enroll. Students in the paleoethnobotany class will work collaboratively with archaeologists at the site. They will learn how to take samples from hearth features uncovered in the excavations, process soil samples, identify charred plant remains to species level, and analyze the significance of their discoveries. The fieldwork will also enhance my own understanding of the site and aid in my interpretations of the data.

Fall 2013:
After the summer field school, UO archaeologists return to the lab to catalog and analyze artifacts collected in the field. During this time, I will work closely with the researchers and students to discuss emerging results and sort botanical samples for future analysis.

2. Growth – (25 points)

This sabbatical will contribute to my growth as a professional archaeologist/paleoethnobotanist by providing me the opportunity to fully devote my time toward the research and analysis of data from Rimrock Draw Rockshelter. I will develop my skills in identifying charred wood and seeds from ancient archaeology sites in eastern Oregon. I will be able to apply that knowledge toward a reconstruction of past climates in the region. Finally, I will collaborate with other paleoethnobotanists and archaeologists to review the data and we will work together toward a major publication of our research.

All of this work in the professional realm will improve and enhance my role as a faculty member. This sabbatical will allow me to bring back to the classroom real-life examples of how research in archaeology is conducted. I will be able to share aspects of my research with students in my World Archaeology and Cultural Anthropology classes. In essence, I will be better equipped to serve as mentor to my students, and I will be able to direct them to professionals in the field with whom I have worked closely.

3. How is this activity valuable and relevant to your division/department, discipline, program, profession, and/or students? (15 points)

The publication(s) that will result from the research at Rimrock Draw Rockshelter will likely draw national and/or international attention. This type of notoriety will shed positive light on work that is produced by various faculty members at Lane Community College. Furthermore, it will shed light on the already established relationship between the anthropology program at LCC and the University of Oregon Archaeology Field School. In the nine years that I have been teaching anthropology at LCC, I have encouraged my students to get involved in various aspects of anthropology and archaeology. Many LCC students have participated in the UO Archaeology summer field school over the years. Last summer, two of my former archaeology students from LCC were awarded supervisory positions at the UO Archaeology Field School. Others are already pursuing graduate degrees in anthropology and archaeology. When students are exposed to on-going research in the discipline and have access to professionals in the field, they are more likely to pursue new experiences.

4. Choose one of the College core values or strategic directions and explain how this activity is relevant. (10 points)

Collaboration:

This sabbatical will promote further collaboration between archaeology programs at Lane Community College, the University of Oregon, and the Bureau of Land Management. As a teacher at LCC, I make it a priority to expose my students to the various ways that they can get involved in research at other Oregon universities and agencies. This sabbatical will provide me with more opportunity to establish, develop, and enhance my own relationships with professionals in the field. In so doing, I will be better able to facilitate the incorporation of student involvement in the future. The building of these networks is not limited to professional archaeologists, however. This sabbatical also has the potential to further my collaborations with members of American Indian tribes in Oregon. For instance, David Harrelson and Melisa Chandler, members of The Confederated Tribes of Grand Rhonde, were students in my paleoethnobotany field class at Rimrock Draw last summer. Both are currently employed by the Cultural Resources Department at the Grand Rhonde and both are engaged in work related to ethnobotany. Their knowledge of culturally significant plants complemented my expertise in identifying the charred remains of those plants. We have since maintained and plan to continue a close working relationship.

5. In addition to a written and oral report of your activities, it is expected that you will share your experience with other faculty. What format might that take, and how can the committee assist you? (10 points)

Dissemination of my work at Rimrock Draw Rockshelter has already begun. A short overview of archaeological investigations thus far at the site was published in the Current Archaeological Happenings in Oregon (CAHO), which is attached as an appendix to this sabbatical proposal. In addition, I gave a public presentation about the site on January 18, 2013 at the University of Oregon, sponsored by the Eugene Natural History Society, entitled, "Bones, Stones, Seeds: What Artifacts Tell Us About Life 10,000+ Years Ago."

After I have completed my sabbatical, and have submitted a written and oral report to LCC, I will offer to present a slide show to faculty and students in the Social Science Division. I also expect to present my results at professional archaeology conferences and in written format via a peer-reviewed journal. Overall reaction and acceptance of the research by my colleagues, peers, and students will serve as the ultimate evaluation of the success of my sabbatical.

Overall sabbatical quality (up to 20 points) **Total: 110 points**

Note: In order to award sabbaticals to the greatest number of faculty members, the committee encourages one-term leaves. **If you are asking for more than one term, please justify.**

Provided you have a minimum of 55 points on Part III, up to 25 points will be added to your score on the following basis:

12 points if this would be your first term of sabbatical leave,
6 points if this would be your second term of sabbatical leave, or
3 points if this would be your third term of sabbatical leave

AND one point for each year since hire as a contracted faculty member including this year if you have never taken a sabbatical OR one point for each year since your last sabbatical.

Please calculate your potential additional points below.

Your points	**Guidelines**
12	Enter 12 points if this would be your first term of sabbatical leave, 6 for second, or 3 for third.
9	Enter one point for each year since hire as a contracted faculty member including this year if you have never taken a sabbatical OR one point for each year since your last sabbatical including this year.
21	Total – Add the points.
21	Total with limit – If the total is 25 or less, write your total here. If it is more than 25, enter 25 here. (25 is the maximum.)

Page removed for confidentiality.

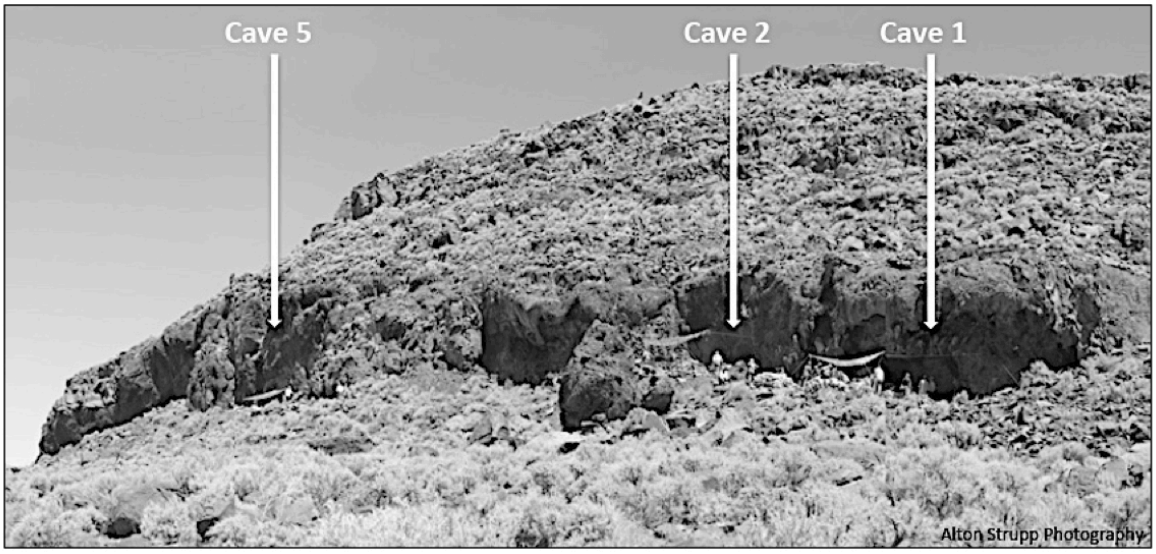
APPENDIX: Recent Publication on Rimrock Draw Rockshelter (CAHO 37, No 2-3, pages 4-7)

CAHO

CURRENT ARCHAEOLOGICAL HAPPENINGS IN OREGON

A Quarterly Newsletter of the Association of Oregon Archaeologists

Volume 37, Number 2-3 Summer-Fall 2012



Paisley Caves, Oregon (Photo by Alton Strupp Photography)

CONTENTS

A Glimpse into the 2012 University of Oregon Archaeology Field School at Rimrock Draw Rockshelter

by Patrick O'Grady, Margaret M. Helzer, and Scott P. Thomas

The 2011 fieldwork at Rimrock Draw Rockshelter (35HA3855) was originally brought to the attention of the CAHO readership by Provost and French (2011), who reported on the BLM-sponsored test excavations at the site in September of that year. During that session, three excavation units produced charcoal, debitage, edge-modified flakes, bifaces and other formed tools. Northern Side-notched points (ca. 7,000 to 4,000 BP), and Western Stemmed points (ca. 12,000-7,000 BP) were the only projectile points recovered within the rockshelter at that time, though a wider variety was collected from the landscape surrounding it. The artifacts were encountered through excavations that reached depths of 190 cm. Subsequent augering indicated that the deposits were considerably deeper. Following the 2011 work, we decided to return to the site with the 2012 University of Oregon (U of O) Archaeology Field School.

We convened in June of 2012 for a six-week school with a crew of 23 archaeology students gathered from across the United States (Figure 1), accompanied by four supervisors. Scott Thomas and Chuck Morlan of the Burns BLM were also on hand, providing support and additional supervision. During the first week, Clovis expert Michael F. Rondeau returned to offer his Paleoindian Lithic Workshop, now in its fifth year. Marge Helzer taught a three-week Paleoethnobotany (PEB) Field School alongside the archaeology field school (Figure 2). Six students attended, the maximum number possible for the available PEB facilities. We also had a strong turnout from the Oregon Archaeological Society, our well-trained and highly valued volunteer group based largely in the Portland-Vancouver area. At the peak of operations, we had 29 students, six teacher/supervisors, eight volunteers, and a variety of visiting researchers at the site . . . the place was buzzing!

The relationship between the paleoethnobotany and archaeology field schools proved to be very beneficial for both groups. The archaeology field crew had the luxury of being able to call "up the hill" to the PEB crew

Figure 1. The 2012 U of O Archaeology Field School, resting after filling the excavation blocks with sandbags.

Figure 2. The 2012 Paleoethnobotanical Field School in front of the lab trailer.

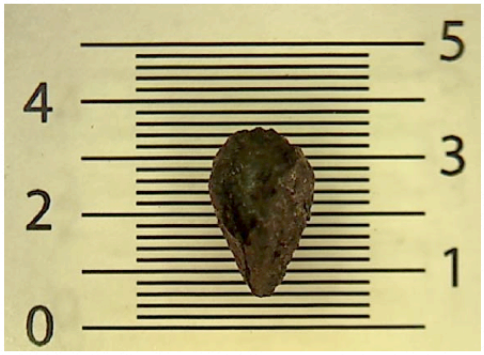


Figure 3. A burned Scirpus (bulrush) seed from Unit 2, Quad D, 215 cm deep.

Figure 4. A large piece of tooth enamel collected in Unit 2 Quad C at a depth of 273 cm.

when an intriguing stain or hearth feature was encountered. They would troop down to the site to collect samples and discuss their context with the archaeology crew. Returning to the lab trailer, the PEB crew would conduct sediment flotation on the spot to extract botanical remains, and the archaeologists would have preliminary information regarding the contents of the samples in one to two days. The interdisciplinary nature of this interaction is in keeping with a tradition first established for the field school by Luther Cressman and carried on through the years by Mel Aikens and Dennis Jenkins. We regularly offer geoarchaeology field instruction as a part of our interdisciplinary focus, but the PEB program was new. The course will be offered again in 2013. The most significant finds from the 2012 botanical work were burned fragments of chenopods, wada, willow, and bulrush (Figure 3). All are edible or utilitarian genera and the latter two offer a view of the riparian environmental conditions at the time of site occupation. Wada is a lakeside plant species that may have been brought to the site for consumption. The burned bulrush seeds are being submitted for radiocarbon dating.

The archaeologists excavated 12 new units during the field school: 11 that were 1x2 m in size, and a 2x2. Unit 2, a 2x2 started in September of 2011 that reached a depth of 190 cm, was reopened with the expectation that we would reach bottom during the six-week field school. That did not prove to be the case. The new units were established at the east, central, and west portions of the rockshelter to enhance our understanding of deposits across the site. Along with the excavation, extensive pedestrian surveys were made of the ground surface surrounding the rockshelter to learn about the distribution and composition of lithic scatters.

The results were encouraging. The surface surveys yielded more stemmed points. Two distinct artifact concentrations were identified that produced two fluted bifaces, one concave base point, 14 overshot flakes, two unfinished bifaces with overshot scars, a spurred tool, and other artifacts consistent with fluted point technology (Rondeau, personal communication). We noted lithics suggestive of fluted technology in previous surveys, but the concentrations found this summer indicate a more substantial presence than we realized.

The rockshelter excavations revealed a three-part stratigraphic series consisting of eolian sediments underlain by a dense series of silty clay layers, which, in turn, are underlain by an orange sandy clay layer extending to bedrock. The ca. 170 cm-thick eolian deposit has a high degree of mixing, but our work also indicated that there is a consistent 1000 year-old component a meter below the surface across the site with the ca. 1300 year-old Newberry pumice underneath (Foit 2012), and another 4000 year-old component near the bottom. Below that is the second stratum; a series of clays, silts, sands, and occasional lenses of tephra that, thus far, contain nothing more

recent than stemmed points in the 7,000 to 12,000 year range. One Haskett point was found in the deepest sediments of this stratum. Two hearth features were also found, which produced the burned willow twigs and bulrush seeds mentioned above. Eight tephra samples from this layer have been submitted to Washington State University for analysis.

Within Unit 2, there are concentrations of roof fall in two separate, deep layers, offering indications of structural changes through time that may have capped and protected deeper deposits. The deepest and most massive of these ancient collapses prevented our progress beyond ca. 250 cm this summer. We decided to return for two additional weeks of work in September, supported by funding provided through Scott Thomas of the Burns BLM and Stan McDonald, the lead archaeologist for the BLM in Oregon. Terry Paddock, a volunteer of long standing at Paisley Caves and former Paisley field school student, arrived in advance of the team to split and remove boulders prior to the September excavations. He exposed the third sediment package, the orange sand/clay layer that was sparsely populated with cultural material. This layer extended to ca. 330 cm before terminating on weathering bedrock. Within the deposit were a few pieces of debitage and one thick cortex flake of chalcedony modified into a tool. The translucent, caramel-colored flake is convex and rectangular, with a single, worn edge with pronounced serrations from rough flaking that were smooth and uniform in height from use, suggesting that cutting was the primary activity for this artifact. The tool was found 285 cm below datum (275 cm deep).

Multiple large tooth enamel fragments were found above the chalcedony artifact, including one concentration at 273 cm and a single piece at 260 cm. Dr. Edward Davis, manager of the U of O Museum of Natural & Cultural History Condon paleontological collection, assisted in the identification of the specimens utilizing the museum's fossil and contemporary comparative collections. The tooth enamel fragments lack clear diagnostic attributes, but share more similarities with camel than horse and are undoubtedly Pleistocene in age. The relationship of the tooth fragments to the flake tool is not clear, complicated by the fact that all were deposited in a rocky stratum where the sequence of deposition is tough to decipher. The discovery of the cultural items in close proximity to Pleistocene fauna, all underlying a dense accumulation of roof fall, is very compelling.

Rimrock Draw has already proven to be a highly significant site, but much more is in store. The field school will be returning again in 2013. By the end of the summer session, the 2012 excavators succeeded in removing most of the eolian sediments in the new units. Next year's excavators will be reopening the units and working into the stemmed point deposits (and beyond) over the course of six weeks. The PEB field school will begin its second year of operation, again offering instruction for up to six students. We also plan to offer two geoarchaeology field schools including a six-week course for undergraduate students and a three-week advanced course for graduate students. Mike Rondeau will return to teach his Paleoindian Lithics workshop.

It is clear that there is still much to learn at this site. The presence of a distinct stemmed point component deep in the deposits is reason enough to return. Artifacts that have associations with fluted point technology are now being found in concentrations on the surface and it is possible that similar material may be recovered in the rockshelter itself. The chalcedony flake tool in the proximity to Pleistocene faunal remains, all of which were buried and separated by heavy roof fall, offers a good reason for optimism about what 2013 might bring.

Acknowledgements: The University of Oregon Archaeology Field School receives annual funding from the Department of Anthropology and the Museum of Natural and Cultural History, and operates under the administration of the Academic Extension Program (formerly Summer Sessions). The field school also receives annual funding from the U. S. Department of the Interior, Bureau of Land Management, under the Clovis Quest and Climate Change programs. Scott Thomas of the Burns BLM was directly responsible for securing this funding, for employing the services of Terry Paddock, and for the tephra analyses. George Wingard graciously provided the trailer that was used for the PEB lab.

References Cited

Foit, Franklin
2012 Letter Report of two tephra samples submitted from Rimrock Draw Rockshelter (35HA3855). Washington State University School of Earth and Environmental Sciences, Pullman.

Provost, Kelsey, and Jessica French
2011 Rimrock Draw Rockshelter (35HA3855): A Summary of Recent Fieldwork at a Stemmed Point Site Near Riley, Oregon. *Current Archaeological Happenings in Oregon* 36(4):4-8.

Rondeau, Michael F.
2012 Personal Communication: Email dated October 10, 2012.

. . . . . .