College of Science E-Newsletter
June 2010

Dear Friends of the College of Science:

Welcome to the June 2010 edition of the College of Science E-Newsletter. We hope that you will find this E-Newsletter informative and helpful. In each issue we feature one of the departments or programs in the College of Science and the activities they have been involved in. This month features the Department of Botany.

We also want to hear from you. Please send us an e-mail from time to time letting us know your thoughts. If you are a graduate of WSU, be sure to let us know what you are up to these days, and how your education at Weber State has helped prepare you for your career. If you are aware of family or friends who should be receiving this monthly E-Newsletter, please forward their e-mail addresses and we would be happy to add them to our distribution list.

Sincerely,
Dr. Dale Ostlie, Dean

If you would prefer not to receive future editions of the E-Newsletter, simply reply to this e-mail with REMOVE in the subject heading and we will remove your name from the distribution list.

In This Issue:

Updates From the Geosciences Department:

The Department of Geosciences experienced another exciting and successful year. Undergraduate research was a key focus, with students involved in a diverse range of projects, such as weathering patterns in arctic environments, hydrogeology of alpine wetlands, paleontological studies in southern Utah, using GIS to analyze spatial patterns of fish faunas in streams, scanning electron microscopy of fault rocks, and developing a field guide for Ogden Canyon. **Sara Summers** received the Outstanding Graduate award and will be attending graduate school at Notre Dame University with a full scholarship and stipend beginning next fall. **Eric Beard** received the Sigma Gamma Epsilon Tarr award and will be attending graduate school at Utah State University beginning next fall. The department continued to improve laboratory facilities, with new computers and licensing for industry-standard software in our GEAR (geospatial and environmental applied research and teaching) lab, new 3-D visualization system, and a new detector and cooling stage for the scanning electron microscope to support interdisciplinary projects within the College of Science. Field trips were a key part of our program, including a four week Field Camp course this May that provided a critical capstone experience for our majors. Recent graduates were successful in being admitted to graduate programs and finding employment. Below is a sampling of the many activities undertaken by our faculty and students.

Suzi Nicholson continued as administrative assistant and department organizer. Suzi is working on redesign of our department web page and updating the alumni data base.

Dr. Jeff Eaton continued his fifth year on a National Park Service funded study of the paleontology of Bryce Canyon National Park, which supported students in the field and lab. A monograph describing fossil mammals found as part of this study is in preparation. Jeff published a paper entitled "Cenomanian (Late Cretaceous) mammals from Cedar Canyon, southwestern Utah, and revision of Cenomanian Alphadon-like marsupials" in the Museum of Northern Arizona Bulletin

and was one of several co-authors on a paper "Biogeography of terrestrial and freshwater vertebrates from the Late Cretaceous (Campanian) Western Interior of North America" published in Paleogeography, Paleoclimatology, Paleoecology. Jeff was also coauthor/ presentor on five abstracts at national meetings this last year, and will deliver a talk entitled "Potential recovery of microvertebrates in Serbia using blind washing techniques" at the 15th Congress of Geologists of Serbia in Belgrade this month. Jeff continued to serve as an Associate Editor for the journal PALAIOS, as well as reviewing manuscripts for other journals. In recognition of Jeff's significant contributions to the field of paleontology, a new species of dinosaur, Diabloceratops eatonei, was recently named in his honor.

Dr. Rick Ford completed another "interesting" year as the chair of WSU's General Education Improvement & Assessment Committee, where he helped develop procedures to assess and re-certify existing General Education courses. He will continue as chair of this committee for the 2010-2011 academic year. Rick completed his second term as National President of Sigma Gamma Epsilon, the honor society for students of the Earth Sciences. In this role he presided over SGE's 41st Biennial Convention held on the campus of Indiana University and organized the SGE Student Research Poster Session at the Geological Society of America National Meeting. Rick will also serve this coming year as president of WSU's chapter of The Honor Society of Phi Kappa Phi. Rick taught the upper-division geomorphology class last Fall, which he substantially revised to include more field-based assignments and activities. On the research front, Rick continues to work with colleagues at Boise State University and the University of Utah on the eolian geomorphology and climate history of southern Utah. Last semester he and his coauthors completed a major revision of their chapter, titled "Geology and Geomorphology of Coral Pink Sand Dunes State Park, Kane County, Utah", in the Utah Geological Association guidebook on "Geology of Utah's Parks and Monuments". This volume has been very popular with the general public and is now in its third edition. Rick also continued to work with department colleagues Dr. Marek Matyjasik and Dr. Michael Hernandez on a project with the Forest Service, characterizing high elevation wetlands in the Uinta Mountains. This project has led to many presentations, including the National Conference of Undergraduate Research and Geological Society of America National Meeting, by a talented group of undergraduate researchers who have collaborated on the project. Rick looks forward to more field work in the Uintas this summer, but not to the necessity of continually applying mosquito repellant.

Dr. Michael Hernandez continued his extensive work directing our geospatial program and promoting GIS (Geographic Information Systems) applications across campus. Michael was instrumental in coordinating the WSU GIS Users Group and working with the Utah Automated Geographic Reference Center to update all state-wide user groups for better long-term coordination on GIS issues. Michael facilitated development of additional student internships with local government agencies and was a faculty advisor to HARBOR (High Altitude Reconnaissance Balloon for Outreach and Research). As part of an on-going U.S. Forest Service project to understand wetland environments in the Uinta Mountains, Michael, along with Drs. Ford and Matyjasik, mentored student research and coordinated image classification of alpine wetland vegetation communities. With support of an ARCC grant, five new computers were added to the GEAR lab, and a 3-D visualization system was installed with support from a Dee Technology grant. Michael with co PIs in Microbiology, Physics, and Computer Science recently submitted a National Science Foundation CCLI proposal to develop an interdisciplinary undergraduate research experience for science and science teaching majors. Michael was a coauthor with other faculty and students on four published abstracts with presentations at the Association of American Geographers Regional Meeting in Logan and at the upcoming Council on Undergraduate Research Meeting here at WSU.

Dr. Marek Matyjasik continued work with students on several projects analyzing chemical weathering with the atomic force microscope and hydrogeology of wetlands. Marek, with Dr. Colin Inglefield (Physics) and colleagues in Poland, continued their study of changes in chemical weathering rates in the arctic associated with global warming as part of a Bingham collaborative research grant. Marek and Colin were faculty mentors for Geosciences major Sara Summers, who received the Beishline Computer Applications fellowship to work on atomic force microscopy studies of mineral surfaces in arctic environments, and was recently awarded the outstanding student presentation for the WSU Sigma Xi chapter. Marek and Sara also presented research results at the American Geophysical Union National Meeting, Geological Society of America National Meeting, and a Goldschmidt Conference held in Switzerland. Marek, together with Drs. Ford and Hernandez and students, continued research on interrelations between groundwater chemistry and ecological environments in the Uinta Mountains.

Dr. Jim Wilson continues to teach key courses for our majors and excite students in general education courses about the dynamic nature of Earth. Jim incorporated the new x-ray diffractometer into courses and has been busy organizing our extensive rock and mineral collections. Jim coauthored an abstract on the applied geoscience program at Weber State, which was invited for presentation at the Geological Society of America National Meeting last fall.

Dr. Adolph Yonkee continued work on two collaborative National Science Foundation grants dealing with the Neoproterozoic-Cambrian rifting history of western North America, and with processes of strain softening in shear zones with faculty and students from Idaho State University, Utah State University, and University of Wisconsin. Two WSU students, Jens Gibbs and Spenser Pantone, helped with field and lab work on these grants, including analysis of samples with the new scanning electron microscope. Another collaborative National Science Foundation grant on processes of Laramide foreland deformation was recently funded for the next three years; Adolph and WSU students begin work in Wyoming this summer with faculty and students from Bryn Mawr College on this project. Adolph was coauthor on three papers, “Reconstructing the kinematic evolution of curved mountain belts: internal strain patterns in the Wyoming salient, Sevier thrust belt, USA”, “Reconstructing the kinematic evolution of curved mountain belts: paleomagnetic analysis of red beds in the Wyoming salient, Sevier thrust belt, USA” (these two articles were published together in the Geological Society of America Bulletin and featured on the cover), and “Anisotropy of magnetic susceptibility in weakly deformed red beds from the Wyoming salient, Sevier thrust belt: Relations to layer-parallel shortening and orogenic curvature” (published in Lithosphere). With coauthors from the Utah Geological Survey, Adolph revised the chapter on “Geology of Antelope Island State Park”, in the Utah Geological Association guidebook on “Geology of Utah’s Parks and Monuments”. Adolph was also coauthor on 5 abstracts presented at the Geological Society of America National Meeting last fall, and gave invited presentations at several universities, including the opening lecture for the University of Nevada Las Vegas Geosymposium.
