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**SESSION NO. 19, 1:30 PM****Saturday, 5 May 2007****Geoscience Education****WWU—Communications Facility, CF105**

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**19-1 1:30 PM Cooley, Skye****GEOMORPHIC LANDTYPE UNITS: INTEGRATING SOILS, GEOLOGY AND GIS IN THE UNDERGRADUATE CLASSROOM**

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Geomorphic units, or "landtypes", can be derived from published soil survey reports. Landtype units are created by grouping soils with genetically similar B/C horizons and similar geomorphic characteristics (depositional process, landscape position, parent material, topographic expression, etc.). Landtype mapping is an excellent way to explore the connections between soils and geology. Students are asked to construct a map of coherent geomorphic units using information from an NRCS soil survey document and topographic quadrangles. Students draw upon their knowledge of geology in order to delineate units and draft a complete map from them. As they delve into the soil survey report, they encounter new soil science concepts, become familiar with soil mapping conventions, and develop a basic working knowledge of soil taxonomy. Discussions of dominant process, key factors, or deciding characteristics are sure to arise as they wrestle with which soils group well together and which do not. Once students recognize similar formational processes amongst soil series or phases, spatial patterns, or common parent materials units tend to break out quickly. The process also provides an opportunity to delve into concepts that often span the geology-soil contact like regolith, colluvium, parent material, geomorphic surface, glacial stratigraphy, and surficial geology. By project's end, the criteria used to place soils into landtype groups are clearly stated, justified by data, and mapped consistently across a landscape. Depending on departmental resources and instructor knowledge, mapping may be accomplished using modern GIS software or traditional colored pencils and paper. Detailed soil series descriptions and GIS data for most counties in the US are freely available from the Natural Resource Conservation Service, <http://websoilsurvey.nrcs.usda.gov>.

Eighteen landtype units were identified for Okanogan County, WA including: Alluvial Fans, Active Dunes, Basalt-Loess Plains, Colluvial Mountain Slopes, Depressional Wetlands, Kettles, Loess Hills, Low Elevation Till, Riparian Floodplains, Rock Outcrops, Talus Slopes, Terrace Flats, Terrace Escarpments, Thinly-covered Outcrops, Upland Outwash Plains, Upland Till, Weathered Regolith, and Wind-influenced Terrace Flats.

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1:30 PM, WWU—Communications Facility, CF105

Sue DeBari and Scott Linneman, Presiding

- 19-1 1:30 PM Cooley, Skye\*: GEOMORPHIC LANDTYPE UNITS: INTEGRATING SOILS, GEOLOGY AND GIS IN THE UNDERGRADUATE CLASSROOM [119744]**
- 19-2 1:50 PM Glass, Alexander\*: ADDRESSING THE CONTROVERSY: TEACHING A GEOLOGY COURSE ON THE CREATION-EVOLUTION DEBATE [121417]**
- 19-3 2:10 PM Smith, Brad K.\*; Bachman, Jennifer; DeBari, Susan M.; Dougan, Bernie; Fackler-Adams, Ben; Grupp, Steve; Linneman, Scott; Mitchell, Robert; Plake, Terri: DEVELOPMENT OF A NEW CURRICULUM FOR A LAB-BASED, INTRODUCTORY EARTH SCIENCE COURSE FOR FUTURE ELEMENTARY TEACHERS: HOW FACULTY FROM A REGIONAL UNIVERSITY AND LOCAL COMMUNITY COLLEGES WORK TOGETHER TO DESIGN AND IMPLEMENT A COMMON GEOLOGY COURSE [121400]**
- 19-4 2:30 PM DeBari, Susan M.\*; Bachman, Jennifer; Dougan, Bernie; Fackler-Adams, Ben; Kratz, Rene; Linneman, Scott; Mitchell, Robert J.; Plake, Terri; Smith, Brad: USING "HOW PEOPLE LEARN" AS A BLUEPRINT FOR DEVELOPING TEACHING STRATEGIES: AN EXAMPLE FROM AN INTRODUCTORY GEOLOGY COURSE FOR FUTURE ELEMENTARY TEACHERS AND NON-SCIENCE MAJORS [121367]**
- 19-5 2:50 PM Mitchell, Robert J.\*: A STRATEGY FOR REVEALING STUDENT PRECONCEPTIONS ABOUT GEOLOGIC TOPICS [121322]**



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# Abstracts

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