SHELLEY A. JUDGE

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EDUCATION

Ph.D., Geological Sciences, The Ohio State University, Columbus, Ohio, 2007.
- Geological specialty: Structure/Tectonics and Sedimentology/Stratigraphy.
- Dissertation title: The Origin and Evolution of the Wasatch Monocline, Central Utah. (http://www.ohiolink.edu/etd/view.cgi?acc_num=osu1167494050)
- Co-advisors: Dr. Lawrence A. Krissek and Dr. Terry J. Wilson

M.S., Geological Sciences, The Ohio State University, Columbus, Ohio, 1998.
- Thesis: Stratigraphy, Sedimentology, and Paleontology of the Bellepoint Member of the Columbus Limestone (Devonian), Central Ohio.
- Advisor: Dr. Loren E. Babcock

M.A.T., Science Education, Kent State University, Kent, Ohio, 1993.
- Certification in Earth Science Education, grades 7-12.
- Research project: The Effects of Changing Atmospheric Conditions on the Mood and Behavior of High School Students, Springfield High School, Springfield Township, Ohio. On file in the Department of Education, Kent State University.
- Advisor: Dr. Doris Simonis

B.S., Geology and History, Mount Union College, Alliance, Ohio, 1991.
- Graduated magna cum laude with honors.

EMPLOYMENT AND PROFESSIONAL EXPERIENCE

Visiting Assistant Professor, Department of Geology, The College of Wooster, Wooster, Ohio 2008-present.
- Taught the lecture and lab portions (where appropriate) of the following courses: Environmental Geology (FA08), Structural Geology (FA08), Oceanography (SP09), and Processes and Concepts in Geology (SP09).
- Responsible for advising students on their required thesis projects (Junior and Senior I.S.).

Instructor for Field Camp, School of Earth Sciences, The Ohio State University, summers 2008-present.
- Co-taught mapping techniques to students in the field; taught labs focused on computer applications in structural analysis; responsible for grading both geologic maps and cross-sections.

Adjunct Assistant Professor for Stone Laboratory, School of Earth Sciences, The Ohio State University, Gibraltar Island, Lake Erie, summer 2008.

- Taught the lecture and lab portions of Introduction to Oceanography to students from the Metro High School (Columbus), a public school emphasizing math, science, and technology.

Instructor/Assistant Professor, Department of Geology, Muskingum College, New Concord, Ohio, 2005-2008.

- Taught the lecture and lab portions (where appropriate) of the following courses: Introduction to Geology, Environmental Geology, Earth History, Oceanography, Paleontology, Sedimentology and Stratigraphy, Seminar in Paleoclimatology, Seminar in the Cretaceous World, First-Year/Sophomore Research in Geology, Senior Research in Geology, Study Abroad Trip to the Bahamas.
- Responsible for advising first-year students through senior-level students in independent research projects.
- Taught First-Year Seminar courses designed to introduce first-year students to Muskingum College.
- Served on several committees, including: Muskingum College Board of Trustees Finance and Management Committee, the Academic Standards Committee, and the Science Division Taskforce.

Adjunct Assistant Professor for Field Camp, Department of Earth and Environmental Sciences, Wright State University, summer 2007.

- Responsible for developing, organizing, and teaching the field mapping module of their summer field camp.
- Held the field camp in central Utah in the Sevier fold-thrust belt.

Editorial Board Member, Integrated Ocean Drilling Program, Expedition 306: North Atlantic Climate II, 2005.

- Responsible for editing all documents produced during Expedition 306, with primary emphasis on those reports from the core description lab.
- Work culminated in finalizing the *Proceedings of the Integrated Ocean Drilling Program Volume 303/306 Expedition Reports: North Atlantic Climate*.

Shipboard Scientist, Integrated Ocean Drilling Program, Expedition 306: North Atlantic Climate II, 2005.

- Responsible for the following day-to-day duties during coring operations: visual core description, digital core scanning, smear-slide analysis, software documentation of all data, and site report writing.

Graduate Administrative Associate, Faculty and TA Development Office (FTAD), The Ohio State University, Columbus, Ohio, 2005.

- Assist in the development, scheduling, publicizing, and presentation of workshops and seminars on teaching.
- Consultation on instructional issues with Graduate Teaching Associates in order to improve their classroom effectiveness.
- Responsible for library and internet research and the collection and analysis of qualitative data, as needed for FTAD's programs.

Academic Tutor and Proctor, Department of Athletics Student-Athlete Support Services, The Ohio State University, Columbus, Ohio, 2000-2005.

- Tutor for student-athletes enrolled in introductory geology courses.
- Supervised student-athletes required to attend weekly study table.
- Worked in the Athletic Computer Lab, designed for academic use by student-athletes.

Facilitator for the Ohio State University College Teaching Series, Faculty and TA Development Office, The Ohio State University, 2004-2005.

- Responsible for facilitating the session: Developing Effective Presentation Skills.
- Participants include Faculty, Staff, and both new and veteran Graduate Teaching Associates.

Graduate Presidential Fellow, The Ohio State University, Columbus, Ohio, 2004.

- Year-long fellowship for concentrated Ph.D. research.

Facilitator at the University-wide Conference on Teaching and Learning: An Orientation for New Teaching Associates, Faculty and TA Development Office, The Ohio State University, 2003 and 2004.

- Responsible for facilitating sessions for new, incoming, Graduate Teaching Associates: (1) How Understanding Learning Styles Can Improve Teaching and Learning, (2) Teaching for the Inclusive Classroom, (3) Developing Effective Presentation Skills, (4) Teaching in the Laboratory Setting, and (5) Active Learning in the Sciences and Quantitative Disciplines.

Graduate Teaching Associate, Department of Geological Sciences, The Ohio State University, Columbus, Ohio, 1996-2003.

- Prepared and taught labs in introductory geology, historical geology, honors historical geology, introductory mineralogy and crystallography, introductory optical mineralogy, oceanography, stratigraphy and sedimentation, structural geology, field geology, carbonate depositional systems, and paleobiology.

Instructor, Department of Geological Sciences, The Ohio State University Field Camp, Ephraim, Utah, 2001.

- Assisted in teaching mapping techniques to students in the field; taught labs focused on computer applications in structural analysis; responsible for grading both geologic maps and cross-sections.

Graduate Research Associate, Department of Geological Sciences, Ohio State University, Columbus, Ohio, 1999-2001.

- Worked in the core processing lab of the Cape Roberts Project on the Ross Sea ice shelf, Cape Roberts, Antarctica (autumn 1999).
- Responsible for scanning the core, using both core and borehole televiewer images to orient the core, orienting fractures within the core, and maintaining the large fracture database.

Middle School Science Teacher, Dodge Middle School, Twinsburg, Ohio, 1993-1995.

- Designed and implemented daily lesson plans for seventh grade Earth Science and eighth grade Life Science classes.

Buckeye Assessment Team in Science, The Ohio Department of Education, Columbus, Ohio, 1994-1995.

- One of four middle school representatives from northeast Ohio chosen to devise and write new science curricula aimed at meeting state proficiency requirements.

Camp Ingenuity Teacher, National Inventors Hall of Fame, Inventure Place, Akron, Ohio, 1993, 1994.

- Selected to implement the first summer science camps designed especially for middle school women.

COURSES TAUGHT

The College of Wooster
(as Visiting Asst. Professor)
Environmental Geology (FA08)
Structural Geology (FA08)
Junior Independent Study (FA08, SP09)
Senior Independent Study Thesis (FA08, SP09)
Oceanography (SP09)
Processes and Concepts in Geology (SP09)

The Ohio State University and Wright State University
(as Adjunct Asst. Professor)
Field Camp (summers)

Muskingum College
(as Instructor and Asst. Professor)
Introduction to Geology
Environmental Geology
Earth History
Oceanography
Paleontology
Sedimentology and Stratigraphy
Seminar in Paleoclimatology
Seminar in the Cretaceous World
First-Year/Sophomore Research in Geology
Senior Research in Geology
Study Abroad Trip to the Bahamas
First-Year Seminar

The Ohio State University
(as a Lab Graduate T.A.)
Introductory Geology
Historical Geology
Introductory Mineralogy and Crystallography
Introductory Optical Mineralogy
Oceanography
Stratigraphy and Sedimentation
Structural Geology
Field Geology
Carbonate Depositional Systems
Paleobiology

AWARDS

Spieker Book Award, Department of Geological Sciences, The Ohio State University, 2004.

- Recognition for academic excellence during the Ph.D. program.

Citizenship Award, Department of Geological Sciences, The Ohio State University, 2004.

Edward F. Hayes Graduate Research Forum First-Place Award, The Ohio State University, 2004.

- Oral presentation in Mathematical and Physical Sciences.

University Graduate Associate Teaching Award, The Ohio State University, 2002.

- The University's highest recognition of graduate student teaching.

University Graduate School Leadership Award, The Ohio State University, 2002.

- The University's highest recognition of graduate student leadership and service.
- Recognizes graduate students who have served with distinction in University organizations, on University committees, and in the larger community.

Edward F. Hayes Graduate Research Forum Third-Place Award, The Ohio State University, 2002.

- Oral presentation in Mathematical and Physical Sciences category.

Graduate Teaching Award, Department of Geological Sciences, The Ohio State University, 2001.

Finalist, University Graduate Associate Teaching Award, The Ohio State University, 2000.

Award for Outstanding Student Presentation at North-Central Section, The Geological Society of America, 1998.

Edward F. Hayes Graduate Research Forum Second-Place Award, The Ohio State University, 1998.

- Oral presentation in Mathematical and Physical Sciences category.

First-Year Graduate Student Achievement Award, Department of Geological Sciences, The Ohio State University, 1997.

Sallie Mae Nominee, 1994.

- Nominated from the state of Ohio as the best first year teacher in the United States.

Twinsburg Teacher of the Year: Golden Apple Award, 1994.

FELLOWSHIPS AND SCHOLARSHIPS

Arthur Meier Schlesinger, Sr., Dissertation Tuition Fellowship, The Graduate School, The Ohio State University, summer and autumn 2006.

The Ohio State University Presidential Fellowship, The Graduate School, The Ohio State University, 2004.

Stone Laboratory Jay Swaidner Scholarship, Ohio State University, summer 2003.

The Shell Fellowship, Department of Geological Sciences, The Ohio State University, winter and autumn 2001 and winter 2002.

Lois Jones Fellowship, Department of Geological Sciences, The Ohio State University, summer 1999 and 2000.

GRANTS

Related to Antarctic Research (The College of Wooster):

Antarctic Drilling Program (ANDRILL) Grant, ANDRILL U.S. Science Support Program, sponsored by the National Science Foundation Office of Polar Programs, 2008-2010.

- Proposal Title: An Analysis of Paleotransport Directions within Southern McMurdo Sound, Antarctica.
- Use of borehole televiewer images from the ANDRILL core to separate fracture patterns in the core from paleotransport patterns in order to add to the tectonic history of the Victoria Land Basin.

Related to Classroom Teaching (The College of Wooster):

The Great Lakes Colleges Association (GLCA) Pathways to Learning Collegium Grant, 2008-2009.

- Proposal Title: The Use of Peer Instruction with Classroom Response Systems in an Introductory Oceanography Classroom (Geology 103), The College of Wooster, Spring Semester 2009

Related to North Atlantic Ocean Research (Muskingum College):

Integrated Ocean Drilling Program (IODP) Post-Expedition Activity (PEA) Grant, 2005-2008.

- Proposal Title: Analysis of Pleistocene Ice-Rafting Debris from the Central North Atlantic (IODP Sites U1313 and U1314).

Undergraduate Supplement: Integrated Ocean Drilling Program (IODP) Post-Expedition Activity (PEA) Grant, 2005-2007.

- Grant to fund undergraduate student participation in research of IODP Sites U1313 and U1314.

Related to Central Utah Research (The Ohio State University; Dissertation):

The Geological Society of America Student Travel Fund, 2004.

SEPM (Society for Sedimentary Geology) Robert J. Weimer Student Research Grant, 2004.

Sigma Xi Grants-in-Aid of Research (National), 2004.

North-Central Section, The Geological Society of America Student Travel Grant, 2003.

Ohio State University Council of Graduate Students Travel Grant, 2003.

Sigma Xi Grant (Ohio State University Local Chapter), 2001.

American Association of Petroleum Geologists Foundation Grants-in-Aid, 2001.

The Geological Society of America Research Grant, 2000.

The Ohio State University Graduate Student Research Alumni Award, 2000.

Steven S. Oriel Memorial Research Grant, Colorado Scientific Society, 1999 and 2000.

Student Field Trip Grant, Sponsored by Exxon Production Research Company and the Geological Society of America, 1997.

- Used to participate in field trip: Sequence stratigraphy in a classic area - evolution of fluvial to marine architecture in response to tectonism and eustasy, Cretaceous foreland basin, Utah.

UNIVERSITY SERVICE

The College of Wooster

Faculty Representative: Admissions Admitted Student Events, The College of Wooster, 2009.

- Faculty member asked to participate in various admissions activities both on and off campus.

Muskingum College:

Academic Standards Committee, Muskingum College, 2007-2008.

- One of several faculty representatives serving on the committee designed to hear appeals from students placed on academic probation.

Science Division Taskforce, Muskingum College, 2007-2008.

- Department representative studying the overall science program and curriculum at the college.

Science Education Recruitment Taskforce, Muskingum College 2007-2008.

- Department representative helping to initiate and coordinate recruitment initiatives.

Faculty Mentor, Muskingum College, 2007-2008.

- Selected to mentor a new, first-year faculty member at the college.

Faculty Representative: Admissions Alumni Reception, Muskingum College, 2007.

- Faculty member chosen to talk to Cleveland area alumni about daily faculty-student interactions at the college.

Board of Trustees Finance Committee, Muskingum College, 2006-2007.

- Faculty representative selected to serve on the Board of Trustees committee.

Panel Member: Admissions Open House, Muskingum College, 2006-2007.

- Science representative on a panel aimed at answering questions from prospective Muskingum students and parents.

Faculty Representative: Admissions Guidance Counselor Breakfast (Central Ohio), Muskingum College, 2006.

- Faculty representative at an informative session held in Columbus, Ohio that marketed Muskingum College to central Ohio guidance counselors.

Panel Member: Life as a New Faculty Member at the New Faculty Orientation Program, Muskingum College, 2006.

- Science representative on a panel for a discussion aimed at introducing new faculty members to Muskingum College.

Study Abroad Fair and Forum, Muskingum College, 2005.

- Participated in the Fair and spoke during the Forum to promote interest in and educate the campus community about the upcoming academic programs in the Bahamas during the 2005-2006 academic year.

The Ohio State University:

Ohio Science Olympiad - State Competition, The Ohio State University, 1998-present.

- Volunteered as test proctor and grader for both the middle school and high school competitions in the category, “Rocks and Minerals” and “Fossils.”

Keynote Speaker, University-wide Conference on Teaching and Learning: An Orientation for New Teaching Associates through Faculty and TA Development, The Ohio State University, 2004.

- Presented the keynote speech to all new, incoming, Graduate Teaching Associates: “The 5 Keys to TA Success.”

Graduate Associate Teaching Award Selection Committee, The Ohio State University, 2003.

- Served on university-wide committee responsible for selecting the ten most outstanding Graduate Teaching Associates at The Ohio State University.

National Science Olympiad, The Ohio State University, 2003.

- Volunteered as test proctor and grader for both the middle school and high school competitions in the category, “Fossils.”

Take a Daughter to Work Day, Ohio State University, 1998, 2000.

- Prepared and taught a workshop for female middle school students on potential careers in the geological sciences, including a tour of departmental facilities.

Office of Disability Services (ODS), The Ohio State University, 1999.

- Member of a focus group organized for the purpose of addressing the concerns of students using ODS services (e.g., academic, mobility, and equal opportunity concerns).

Edward F. Hayes Graduate Research Forum, Council of Graduate Students, The Ohio State University, 1998.

- Assisted in the set-up of the forum (poster board sessions, audio-visual equipment, registration tables, etc.)

ACADEMIC AREA AND DEPARTMENT SERVICE

The College of Wooster

Department of Geology Library Liaison, 2008-present.

Office of Undergraduate Research Sophomore Research Program, 2009.

Muskingum College:

Geology Club, Muskingum College, 2005-present.

- Advised and supported club activities and meetings.

Ohio State University:

Graduate Student Recruitment, Department of Geological Sciences, The Ohio State University, 1999-2004.

- Assisted in recruitment of prospective graduate students.

Graduate Studies Committee: Student Representative, Department of Geological Sciences, The Ohio State University, 2000 to 2002.

- Committee comprised of both faculty and graduate students and charged with overseeing policies affecting graduate students in the department.
- Revised the department's Teaching Evaluation and Lab Evaluation forms to be used in conjunction with the course instructor forms at the end of each quarter.

Graduate Student Mentoring Program, Department of Geological Sciences, The Ohio State University, 2000-2002.

- Developed and initiated a mentoring program within the department, pairing new graduate students with experienced, veteran students.

Teaching Collections, Introductory Classes. Department of Geological Sciences, The Ohio State University, 2001 and 2002.

- Reorganized the teaching collections for introductory geology courses for non-majors.

GS 100 Oversight Committee: Student Representative, Department of Geological Sciences, The Ohio State University, 1999-2000.

- Served on committee comprised of both faculty and graduate students and charged with assessing the planning and instruction of GS 100 (i.e., selecting lecture text and lab text, coordinating lectures and labs among all sections of Introduction to Geology).

COMMUNITY SERVICE AND OUTREACH

The College of Wooster

Invited Speaker, The College of Wooster Science Roundtable, November 2008.

- Presented a luncheon talk entitled, "Where the 'Utah Rockies' Came From: Four Episodes of Mountain Building in Central Utah?".

Invited Guest Speaker, Kent State University Departmental Colloquium, October 2008.

- Presented a colloquium talk entitled, "Two Paired Monoclines in Central Utah: A Comparison of Origin, Timing, and Structural Style".

Muskingum College:

Invited Guest Speaker, Zanesville Rotary, 2007.

- Presented a luncheon talk entitled, "Science at the Extreme: Living and Working in Antarctica".

Invited Guest Speaker, East Central Colleges (ECC) 15th Annual Fall Faculty Retreat, November 2007.

- Presented a workshop on the use of Personal Response Systems (PRS; "clickers") in the classroom setting.

STARS Grant Geology Workshop, Muskingum College, 2005.

- Led the day-long, inquiry-based geology workshop for local public school teachers of all grade levels.
- Workshop designed to outline major geologic concepts and to provide ideas for practical classroom activities and JIGSAW exercises for teachers.

Ohio State University:

Education Outreach, Department of Education and Department of Geological Sciences, The Ohio State University, summer 2004.

- Workshop's objective was to enhance science content knowledge for public school teachers in the Columbus City Schools.
- Participated on field trips associated with the workshop in order to give educators hands-on experience.

Educational Outreach, Education Department of Otterbein University and the Department of Geological Sciences of The Ohio State University, summer 2002.

- Prepared lesson plans in introductory oceanography for a K-5 teacher workshop.
- Workshop's objective was to enhance science content knowledge for elementary teachers in public schools in central Ohio.

Educational Outreach, Department of Geological Sciences, The Ohio State University, 2000.

- Prepared and taught geology lessons to high school students and teachers.
- Lessons were aimed at preparing students and teachers for their trip to study the geology and biology of San Salvador Island, Bahamas.

Educational Outreach: Geology 101 for Kids, Department of Geological Sciences, The Ohio State University, summer 1997.

- Assisted with the earth science portions of a summer science camp composed of students in grade 5 from public schools in central Ohio.

PROFESSIONAL SOCIETY MEMBERSHIPS

American Association of Petroleum Geologists (AAPG).
Geological Society of America (GSA).
National Association of Geoscience Teachers (NAGT).
Sigma Xi.
Society for Sedimentary Geology (SEPM).

WORKSHOPS ATTENDED

ESRI GIS Coursework: Fundamentals of GIS Learning Pathway

- Focused on introductory GIS skills to use in the college classroom
- Both web-based and instructor-led training (ESRI regional office, Gahanna OH)

Teaching Structural Geology and Petrology in the 21st Century: On the Cutting Edge – Professional Development for Geoscience Faculty, Geological Society of America Annual Meeting, October 2008.

- Focused on developing hands-on laboratory activities and analog models for use in the classroom.

Starting Out in Undergraduate Research and Education: A Professional Development Workshop for Young Faculty, Geological Society of America Annual Meeting, October 2007.

- Cosponsored by CUR, NAGT, and GSA Geoscience Education Division.
- Focused on providing information to young faculty on the job interview process, research grant opportunities, and establishing a research program for undergraduates.

Peer Led Team Learning (PLTL), Muskingum College, August 2006.

- Focused on involving undergraduate students in recitation-type classroom meetings as a part of science course curricula.

East Central Colleges (ECC) 13th Annual Fall Faculty Retreat, November 2005.

- Purpose was to provide newly appointed faculty members with interactive sessions on the following topics: Teaching in a Liberal Arts Environment, Teaching Today's Students, Finding Your Scholarship Niche, Legal Aspects of Faculty Work, and Service Opportunities.

Using Conceptests to Improve Teaching and Learning in Large Classes, Geological Society of America Annual Meeting, 2004.

- Sponsored by GSA, NAGT, and NSF (Geological Society of America, National Association of Geology Teachers, and National Science Foundation)
- Designed for faculty and graduate students and focused on using Conceptests in the classroom in order to improve student retention.

Preparing to Teach: A Workshop for Graduate Students, Geological Society of America Annual Meeting, 2000.

- Sponsored by NAGT (National Association of Geology Teachers)
- Designed for graduate students interested in teaching and focused on effective teaching strategies, teaching portfolios, and preparing for the first year of teaching.

PERTINENT FIELD EXPERIENCES

Central Utah, 1996-present.

- Detailed mapping of Mesozoic and Cenozoic strata, emphasizing the structural geology, stratigraphy, and sedimentology of the Sanpete-Sevier Valley area.
- Structural analysis of joints, veins, and faults, from selected localities along the trends of the Wasatch monocline and the trend of the Rock and Dry Monocline.
- Paleocurrent analysis of Paleogene sandstones in the Sanpete and Sevier Valleys.

North Atlantic Ocean Expedition 306, 2005-present.

- Drilling from several sites in the North Atlantic Ocean as part of the Integrated Ocean Drilling Program.
- Participated as a Shipboard Scientist on an expedition focused on developing a template for North Atlantic climate proxies.

Mississippian Strata of South-central Kentucky, 2004.

- Examination of the relationship between the sedimentary processes of debrites and turbidites and the orientation of crinoid pluricolumnals in the Fort Payne Formation.

Northern Appalachian Transect, 2003.

- Structural exercises, as a means to illustrate relationships between distinct tectonic assemblages.
- Structural analysis of joints, veins, faults, and foliation from selected localities in Maine, with regional implications to the Norumbega Fault Zone.

San Salvador Island, Bahamas, 1996-2002 and Grand Bahama Bank, Bahamas, 2006.

- Concentrated study of modern and Pleistocene depositional environments and associated sea-level fluctuations through time.
- Study of paleowind reconstructions from Holocene and Pleistocene eolianite cross-bedding.

Devonian Carbonates of Ohio, 1996-2003.

- Sedimentologic and stratigraphic analysis of the Columbus Limestone.
- Use of spore biostratigraphy as a tool for dating the Bellepoint Member.

- Description of carbonate microenvironments present during the Devonian.

Cape Roberts Project, Antarctica, 1999-2002.

- Structural analysis of drillcores and borehole televiewer images obtained by an international drilling program in the Ross Sea, Antarctica.

Southern Appalachian Transect, 1998.

- Structural, stratigraphic, and mapping exercises, as a means to illustrate relationships between distinct tectonic assemblages.
- Overview of the economic importance of selected mining operations.

Devonian through Mississippian Strata of the Appalachian Basin, 1997-1998.

- Stratigraphic relationships between carbonate and siliciclastic strata in a basin setting.

PERTINENT COURSEWORK IN GRADUATE SCHOOL

Stratigraphy and Sedimentation
Structural Geology
Field Geology I and II
Sedimentation and Sedimentary Rocks
Carbonate Depositional Systems I and II
Paleobiology
Micropaleontology
Marine Geology
Seminars in Physical Oceanography
Seminar in Paleooceanographic Proxies
Field Studies: Geology of the SW US
Geotectonic Evolution of the Continents
Advanced Structural Geology
Hydrogeology
Individual Studies in Field Geology and Stratigraphy
Volcanology
Geology of the Northern and Southern Appalachians
Seminars in Stratigraphy
Individual Studies in Paleogeomorphology
Field Studies: Sedimentology

ABSTRACTS AND PUBLICATIONS

Judge, S. A., Elliot, D. H., Wilson, T. J., Foland, K. A., in prep. Evidence of pre-Basin and Range extension in central Utah: implications for the timing of the Wasatch Monocline.

Judge, S. A. and Wilson, T. J. in prep. Kinematic Analysis of the Wasatch and Rock and Dry monoclines of central Utah.

Johnson, K., Judge, S. A., and Ausich, W. I., in review. Contrasting crinoid pluricolumnal orientations as a test of turbidites and debrites in south-central Kentucky (Fort Payne Formation, Lower Mississippian). Journal of Sedimentary Research.

Judge, S. A., 2007. The origin and evolution of the Wasatch monocline, central Utah. Unpublished Ph.D. thesis. 396 pp. (http://www.ohiolink.edu/etd/view.cgi?acc_num=osu1167494050)

Zunk, B., Johnson, K., and Judge, S. A., 2006. Pleistocene Grain-size Analysis and Micropaleontology of West Tasmania Slope Sediments (ODP Leg 189, Site 1168). Geological Society of America Abstracts with Programs, North-Central Section.

Stein, R., Kanamatsu, T., Alvarez Zarikian, C.A., Higgins, S., Channell, J.E.T., Aboud, E., Ohno, M., Acton, G.D., Akimoto, K, Bailey, I., Bjørklund, K.R., Evans, H., Nielsen, S.H.H., Fang, N., Ferretti, P., Gruetzner, J., Guyodo, Y.J.B., Hagino, K., Harris, R., Hatakeda, K., Hefter, J. Judge, S.A., Kulhanek, D.K., Nanayama, F., Rashid, H., Sierro Sanchez, F. J., Voelker, A. and Zhai, Q., 2006. North Atlantic Paleoceanography: the Last 5 Million Years, EOS, 87: 13, pages 129, 133.

Harris, R.N., and IODP Expedition 306 Scientists, 2006. Borehole observatory installations on IODP Expedition 306 reconstruct bottom-water temperature changes in the Norwegian Sea. Scientific Drilling, 2:28-31. doi:10.2204/iodp.sd.2.03.2006

Channell, J.E.T., Sato, T., Kanamatsu, T., Stein, R., Malone, M., Alvarez Zarikian, C. and the IODP Expedition 303 and 306 Scientists, 2006. IODP Expeditions 303 and 306 monitor Miocene-Quaternary climate in the North Atlantic. Scientific Drilling, 2, 4-10. doi:10.2204/iodp.sd.2.01.2006

Judge, S. A. and Wilson, T. J., 2005. Incorporating the International Polar Year into Introductory Geology Laboratories at Ohio State University. Eos Transactions AGU 86(52). American Geophysical Union Fall Meeting Supplement, Abstract ED11D-1123. (http://www.agu.org/meetings/fm05/waisfm05.html).

Expedition Scientists, 2005. North Atlantic Climate 2. IODP Preliminary Report 306: (1) Ice sheet–ocean atmosphere interactions on millennial timescales during the late Neogene–Quaternary using a paleointensity-assisted chronology for the North Atlantic, and (2) Documenting and monitoring bottom water temperature variations through time: installing a CORK at Site 642, Norwegian-Greenland Sea. doi:10.2204/IODP.PR.306.2005.

Judge, S. A., Wilson, T. J., Elliot, D. H., Foland, K. A., and Kilmer, D. S., 2005. A Comparison of Paired Monoclines in Central Utah: Origin, Timing, and Structural Style. American Association of Petroleum Geologists Annual Convention Program Abstracts. SEPM Student Award Session. (http://www.searchanddiscovery.com/documents/abstracts/2005annual_calgary/abstracts/judge.htm.)

Judge, S. A., Richardson, J. G., and Babcock, L. E., 2004. Depositional environments and paleontology of the Bellepoint Member of the Columbus Limestone (Devonian: Emsian-Eifelian), central Ohio. Northeastern Geology and Environmental Sciences 26(4):321-336.

Judge, S. A., Elliot, D. H., and Foland, K. A. 2004. New constraints on the age of the Wasatch monocline, central Utah. Geological Society of America Abstracts with Programs 36(5):502.

Johnson, K., Judge, S. A., and Ausich, W. I., 2004. Three dimensional orientations of crinoid pluricolumnals verify depositional processes. Geological Society of America Abstracts with Programs 36(5):63-64.

Judge, S. A., 2004. Topography of central Utah ~ 30 to 60 million years ago: clues from ancient river systems and volcanic eruptions. In, M. Daniels (editor), Edward F. Hayes Research Forum Proceedings, The Ohio State University, 4:237-256.

Judge, S. A. and Krissek, L. A., 2003. Paleocurrent analyses of the Tertiary Colton and Crazy Hollow Formations, central Utah: implications for timing of the Wasatch monocline. Geological Society of America Abstracts with Programs 35(6):510.

Judge, S. A. and Richardson, J. G., 2003. Palynology and associated macroflora of the Bellepoint Member of the Columbus Limestone (Devonian; Emsian-Eifelian) of central Ohio. American Association of Stratigraphic Palynologists Annual Meeting (Joint AASP/CAP/NAMS Meeting) Abstracts with Programs.

Millan, C., Judge, S., Johnson, K., Gudding, J. Tayse-Ballieul, R., and McKenzie, G., 2003. Earth science basics for K-5 educators. School Science and Mathematics Association Annual Convention Abstracts with Programs.

Judge, S. A. and Wilson, T. J., 2002. Kinematic evolution of the Wasatch monocline, central Utah. Geological Society of America Abstracts with Programs 34(6):371.

Judge, S. A., 2002. Paleowind reconstructions from Pleistocene and Holocene eolian cross-bedding, San Salvador Island, Bahamas. In, E. Scrogham (editor), Edward F. Hayes Research Forum Proceedings, The Ohio State University, 2:175-186.

Judge, S. A., 2001. The origin and evolution of the Wasatch monocline, central Utah. American Association of Petroleum Geologists Bulletin, 84(11):1866.

Judge, S. A., Kilmer, D. S., and Wilson, T. J., 2000. Kinematic analysis of a fault-related monocline, Sevier thrust belt, central Utah. Geological Society of America Abstracts with Programs, p. A233.

Cape Roberts Science Team. 2000. Studies from the Cape Roberts Project, Ross Sea, Antarctica: Initial Report on CRP-3. Terra Antarctica, 7(1/2).

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Judge, S. A., Krissek, L. A., and Wilson, T. J., 2000. Development of the Wasatch monocline, central Utah: preliminary results. Geological Society of America Abstracts with Programs, North-Central Section, p. A20.

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Burkett, A., 2008. Taphonomy of Mollusc Species Found in Lagoonal Cores of Smuggler's Cove, St. Croix, U.S. Virgin Islands. Muskingum College. Research toward B.S. thesis.

- Student was awarded a Keck Consortium Fellowship during summer 2007.
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- Student was awarded an "Outstanding Student Paper Award" at the North-Central Section of the Geological Society of America Meeting, University of Akron, April 2006.
- Student was awarded 3rd place at the James Bradford Colloquium (Muskingum College Science Division presentation of all senior research), April 2006.

DISSERTATION ABSTRACT

The Wasatch monocline is a broad, S-shaped fold extending for 113 km through central Utah and forming the western front of the southern Wasatch Plateau. The monocline plays a key role in the Mesozoic-Cenozoic tectonic framework of the region; therefore, the timing of its formation is of particular interest. Previous workers have suggested the monocline formed at different times, ranging from the Middle Eocene through the Early Miocene or even younger. This investigation enhances previous research in central Utah by further constraining the timing of monocline flexure.

New data obtained to determine the timing of flexure includes studies of stress regimes, paleocurrents, stratigraphic field relationships, and $^{40}Ar/^{39}Ar$ dating. These data bracket the timing of flexure by providing maximum and minimum ages. Paleocurrents were collected from the Eocene Colton and Crazy Hollow Formations, and they indicate a general flow pattern from the south-southeast to the north-northwest through the area where the monocline presently stands. These paleocurrent patterns suggest that the monocline did not affect paleoflow during deposition of either unit, and therefore, was not a feature of high topographic relief at the time of Crazy Hollow deposition.

Spatial and geometric relationships between units near the southern end of the study area suggest the presence of an unconformity between the Crazy Hollow Formation and the formation of Aurora. Analysis of bedding dips indicates a 15° dip difference between the units. The Aurora progressively thins from west to east, suggesting onlap against the limb of the monocline. These relationships indicate that monocline flexure had initiated after deposition of the Crazy Hollow but prior to deposition of the Aurora in this region. Biotites from an ash flow tuff located near the base of the Aurora yielded consistent and concordant $^{40}Ar/^{39}Ar$ radiometric dates of 38.0 ± 0.2 Ma. Because initiation of flexure is slightly older than the base of the ash flow tuff, this 38 ± 0.2 Ma radiometric date gives a minimum age for flexure. The Wasatch monocline is interpreted to be an extensional roll-over fold produced during slip on the listric, fault-bounding half-graben in the Sanpete Valley.