

Department of Geology • Bryn Mawr College •  
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## Arlo Brandon Weil

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### Education

B.S., Geology, University of Oregon	1993	
M.S., Geology, University of Michigan		1997
Ph.D., Geology, University of Michigan	2001	

### Professional Experience

#### *The University of Oregon*

- Worked with Columbia University and the University of Oregon on the Colorado Seismic Array 1992
- Research assistant for Dr. Ray Weldon  
Geology Department, University of Oregon 1992, 1993

#### *US Geologic Survey*

- Research Scientist and field geologist (surface water hydrology) 1994

#### *The University of Michigan*

- Graduate Research Assistant 1995 – 2001
- Graduate Teaching Assistant 1995 – 2001
- Geology Field-Camp Instructor 1997, 1998
- Paleomagnetic Laboratory manager 1997 - 2001

#### *Bryn Mawr College*

- Assistant Professor of structural geology/tectonics 2001 – 2007
- Associate Professor 2007 – 2012
- Professor 2012 – present
  - Department Chair 2008 – present

#### *Geological Society of America*

- Editor for the Journal *Lithosphere* 2013 – 2017

### General Research Interests

Tectonics of fold-thrust belts, paleomagnetism applied to tectonic problems, rock magnetism, Anisotropy of Magnetic Susceptibility applied to weakly deformed rocks, kinematics of curved mountain belts, Variscan Europe, Andes, Rocky Mountains, Precambrian paleogeography and tectonics, and the evolution and lifecycle of supercontinents.

### Awards/Grants

- Outstanding Student Paper (Geomagnetism/Paleomagnetism Section) – Spring AGU 2000
- Outstanding Student Paper (Tectonophysics Section) – Fall AGU 2001
- NSF Academic Intern Fellowship
- University of Michigan - F. Scott Turner Fellowship (1996-1999)
- IRM Visiting Research Fellowship 1999 and 2002 and 2010
- Bryn Mawr College Faculty Grant 2002, 2004, 2006, 2009
- NSF Research Grant 2004-2007 – *Three-Dimensional kinematic history of the Wyoming Salient: Implications for the development of curved orogens* (\$136,466.00)

- NSF Equipment Grant 2004 - *Acquisition of new paleomagnetic lab equipment for Bryn Mawr College, Pennsylvania* (\$114,446.90)
- Ministeria de Educacion y Ciencia Grant 2006– Oroclines and Delamination: Relations and Effects (\$90,743.00)
- NSF Research Grant 2010-2013 – *Determining the 3D kinematic evolution of the Wyoming Laramide, implications for processes of foreland deformation* (\$127,332.00)
- UNESCO Project Grant – IGCP 574 - *Bending and Bent Orogens, and Continental Ribbons- 5 years*
- Ministeria de Educacion y Ciencia Grant 2010– Oroclines and Delamination: Relations and Effects II (ODRE) (\$136,466.00)
- **Awarded Fellow of the Geological Society of America – 2013**
- NSF Research Grant 2014-2017 - *Interrelations between foreland deformation, flat-slab subduction, and crustal architecture: Integrated analysis of the Sierras Pampeanas to Cordillera of the south-central Andes* (\$170,849)
- Ministeria de Educacion y Ciencia Grant 2014-2017– Oroclines and Delamination: Relations and Effects III (ODRE), with a focus on the Carpathians of eastern Europe (\$150,000.00)
- NSF Research Grant 2015-2018 - *Fold Form, Strain, and Mechanics at the Whaleback Anticline: New Approaches to a Classic Field Locality*

### **Professional Societies**

American Geophysical Union; Geological Society of America; Geological Society of Pennsylvania;

Geologic Society of Philadelphia; Sigma XI Academic Society; European Geophysical Society

**Graduate Advisors:** Dr. Rob Van der Voo and Dr. Ben A. van der Pluijm (both at *The University of Michigan*)

### **Peer Reviewed Publications:**

#### **1998**

1) **Weil, A.B.**, Van der Voo, Mac Niocaill, C., and Meert, G.M., 1998. The Proterozoic supercontinent

Rodinia: Paleomagnetically derived reconstructions for the 1,100 to 800 Ma interval, *Earth Planet Sci. Lett.*, 154, 13-24.

#### **2000**

2) Karlstrom, Karl E., Bowring, S. A., Dehler, C.M., Knoll, A.H., Porter, S. M., Sharp, Z., Des Marais,

D. J., **Weil, A.B.**, Geissman, J. W., Elrick, M., Timmons, M. J., Keefe, K. and Crossey, L. J., 2000. The Chuar Group of the Grand Canyon: Record of break up of Rodinia, associated change in the global carbon cycle, and eukaryotic diversification by 740 Ma, *Geology*, 28, 619-622.

3) Parés, J.M., Perez-Gonzalez, A., **Weil, A.B.** and Arsuaga, J.L., 2000. On the Age of the Hominid

Fossils at the Sima de los Huesos, Sierra de Atapuerca, Spain: Paleomagnetic Evidence, *American Journal of Physical Anthropology*, 111, 451-461.

4) **Weil, A.B.**, Van der Voo, R., van der Pluijm, B. and Parés, J.M., 2000. The Formation of an orocline

by multiphased deformation: a paleomagnetic investigation of the Cantabria-Asturias Arc Hinge-Zone (northern Spain), *Journal of Structural Geology*, 22, 735-756.

2001

- 5) **Weil, A.B.**, Van der Voo, R. and van der Pluijm, B. New paleomagnetic data from the southern Cantabria-Asturias Arc, northern Spain: Implications for true oroclinal rotation and the final amalgamation of Pangea, *Geology*, 29, 991-994, 2001.

2002

- 6) **Weil, A.B.** and Van der Voo, R., 2002 Insights into the mechanism for orogen related carbonate remagnetization from growth of authigenic Fe-oxide: A SEM and rock magnetic study of Devonian carbonates from northern, *Journal of Geophysical Research*, 107, B4.
- 7) **Weil, A.B.**, Van der Voo, R., Application of the paleomagnetic fold test to complex geologic environments: A case study from northern Spain, *Physics and Chemistry of the Earth*, 27, 1223-1235, 2002.

2003

- 8) **Weil, A.B.**, Geissman, J., Heizler, M. and Van der Voo, R. A paleomagnetic investigation of Middle Proterozoic mafic intrusions and Upper Proterozoic redbeds from the Lower Grand Canyon Supergroup, Arizona, *Tectonophysics*, 375, 199-220, 2003.

2004

- 9) Gutiérrez-Alonso, G., Fernández-Suárez, J. and **Weil, A.B.**, Orocline triggered lithospheric delamination?, in: Paleomagnetic and structural analysis of orogenic curvature, *Geologic Society of America Special Paper 383*, 121-131, 2004.
- 10) Gutiérrez-Alonso, G., Fernández-Suárez, J. and **Weil, A.B.**, Oroclinales y delaminación: relaciones y efectos, *Geo-Temas*, 6(3), 69-74, 2004
- 11) **Weil, A.B.** and Sussman, A., Classification of curved orogens based on the timing relationships between structural development and vertical-axis rotations, in: Paleomagnetic and structural analysis of orogenic curvature, *Geologic Society of America Special Paper 383*, 1-17, 2004.
- 12) **Weil, A.B.**, Geissman, and Van der Voo, R. Paleomagnetism of the Neoproterozoic Chuar Group, Grand Canyon Supergroup, Arizona: Implications for Rodinia break-up and Laurentia's Neoproterozoic APWP, *Precambrian Research*, 129, 71-92, 2004.

- 13) Sussman, A. and **Weil, A.B.** (editors), Paleomagnetic and structural analysis of orogenic curvature, *Geologic Society of America Special Paper 383*, p. 271.

2005

- 14) Ashby, J.M., Geissman, J.W., and **Weil, A.B.**, Has the eastern end of the Uinta Mountains been bent?: paleomagnetic and fault kinematic analysis, in: *Geology of the Uinta Mountains*, eds., Dehler, C.M., Pederson, J.L., Sprinkel, D.A., and Kowallis, B.J., *U.G.A., Publication 33*, 285-320, 2005.

2006

- 15) **Weil, A.B.**, Geissman, J.W., and Ashby, J.M., A new paleomagnetic pole for the Neoproterozoic Uinta Mountain Supergroup, Central Rocky Mountain States, USA, *Precambrian Research*, *PRECAM 2655*, 1-26, 2006.

- 16) **Weil, A.B.**, Kinematics of orocline tightening in the core of an arc: Paleomagnetic analysis of the Ponga Unit, Cantabria Arc, northern Spain, *Tectonics*, 25, 2005TC001861, 1-23, 2006.

## 2008

- 17) Tohver, E., and **Weil, A.B.**, A new technique for dating the absolute timing of carbonate remagnetization: Ar-Ar dating of clay transformation in Paleozoic carbonates, *EPSL*, 274 524-530.
- 18) Gabriel Gutiérrez-Alonso, J. Fernández-Suárez, **A.B. Weil**, J. Brendan Murphy, R. Damian Nance, Fernando Corfú, Stephen T. Johnston, Self-subduction of the Pangean global plate, *Nature Geoscience*, 1, 549-553.
- 19) Gabriel Gutiérrez Alonso, Ángel Luis Muñoz Nieto, Gabriel Santos Delgado, G. Zulauf, Diego González Aguilera, Javier Gómez Lahoz, Jesús Sabas Herrero Pascual, **A. B. Weil**, Uso de un escáner Láser para la descripción y análisis de estructuras geológicas : los boudines de Almogrove (Portugal), del afloramiento al laboratorio, *Geotemas*, 10, 365-368.

## 2009

- 20) Johnston, S.T., Monahan, A.M., Gabriel Gutiérrez-Alonso and **Weil, A.B.**, The significance of bent mountain belts, *Trabajos de Geología*, 29, 388-8921, 2009.
- 21) **Weil, A.B.**, and Yonkee, A., Anisotropy of Magnetic Susceptibility as a proxy for layer parallel shortening and tangential extension: implications for mountain belt curvature in the Wyoming Salient, *Lithosphere*, 1, 4, 235-256, 2009.
- 22) **Weil, A.B.**, and Yonkee, A., The power of integration: combining paleomagnetic data with structural analysis to better understand the kinematics and mechanics of complex orogens, *Trabajos de Geología*, 29, 833-841, 2009.

## 2010

- 23) **Weil, A.B.**, Gabriel Gutiérrez-Alonso, Jordan Conan, New time constraints on lithospheric-scale oroclinal bending of the Ibero-Armorican Arc: a paleomagnetic study of earliest Permian rocks from Iberia, *Journal of the Geological Society of London*, 167, 127-173.
- 24) **Weil, A.B.**, Yonkee, A., and Sussman, A., Reconstructing the kinematics of thrust sheet rotation: a paleomagnetic study of Triassic redbeds from the Wyoming Salient, U.S.A., *GSA Bulletin*, 122, 1/2, 2-23.
- 25) Yonkee, A., **Weil, A.B.**, and Sussman, A., Reconstructing the kinematic evolution of curved mountain belts: internal strain patterns in the Wyoming Salient, Sevier thrust belt, U.S.A., *GSA Bulletin*, 122, 1/2, 24-50.
- 26) Yonkee, A., and **Weil, A.B.**, Quantifying vertical-axis rotation in curved orogens: integrating multiple data sets with a refined weighted least-squares strike test, *Tectonics*, doi:10.1029/2008TC002312.

## 2011

- 27) Gabriel Gutiérrez-Alonso, Brendan Murphy, Fernández-Suárez, **Weil, A.B.**, Franco and Carlos Gonzalo, Lithospheric delamination in the core of Pangea: Sm-Nd insights from the Iberian mantle, *Geology*, doi:10.1130/G31468.1, 155-158, 2011.

- 28) ^Pastor-Galán, Gutiérrez-Alonso, G. and **Weil, A.B.**, Orocline timing through joint analysis: insights from the Ibero-Armorican Arc, *Tectonophysics*, 507, 31-46, 2011.
- 29) Yonkee, A. and **Weil, A.B.**, 2011. Evolution of the Wyoming Salient of the Sevier Fold-Thrust Belt, Northern Utah to Western Wyoming, *Utah Geological Survey Publication 40: Sevier Thrust Belt: Northern and Central Utah and Adjacent Areas*, 1-56.

## 2012

- 30) ^^ Gabriel Gutiérrez-Alonso, **Weil, A.B.**, Johnston, S.T., Pastor-Galán, D. and Fernández-Suárez, J., Buckling an orogeny: The Cantabrian Orocline, *GSA Today*, v. 22, no. 7, doi: 10.1130/GSATG141A.1.
- 31) ^Shaw, J., Johnston, S.T., Gutiérrez-Alonso, G. and **Weil, A.B.**, Oroclines of the Variscan orogeny of Iberia: Paleocurrent analysis and paleogeographic implications, *Earth and Planetary Science Letters*, v. 329-330, 60-70.
- 32) Sussman, A.J., Pueyo, E.L., Chase, C.G., Mitra, G. and **Weil, A.B.**, The impact of vertical-axis rotations on shortening estimates, *Lithosphere*. doi: 10.1130/L177.1
- 33) ^Pastor-Galán, D., Gutiérrez-Alonso, G., **Weil, A.B.**, Fernández-Suárez, J., Johnston, S. and Murphy, J. 2012. A virtual tour of the Ibero-Armorican orocline. In: (Ed.) Stephen Johnston, and Gideon Rosenbaum, Oroclines, *Journal of the Virtual Explorer, Electronic Edition*, ISSN 1441-8142, volume 43, paper 2.
- 34) **Weil, A.B.** and Yonkee, A., Layer parallel shortening across the Sevier fold-thrust belt and Laramide foreland of Wyoming: spatial and temporal evolution of a complex geodynamic system, *Earth and Planetary Science Letters*, 357-358, 405-420.

## 2013

- 35) ^^ **Weil, A.B.**, Gutiérrez-Alonso, G., Johnston, S.T. and Pastor-Galán, D., Kinematic constraints on buckling a lithospheric-scale orocline along the northern margin of Gondwana: A geologic synthesis, *Tectonophysics*, 582, 25-49.
- 36) ^^ Johnston, S.T., **Weil, A.B.** and Gutiérrez-Alonso, G., Oroclines: Thick and Thin, *invited for publication in the 125 Anniversary Series for the Geological Society of America Bulletin, GSA Bulletin*, 125, 643-663. doi:10.1130/B30765.1
- 37) Yonkee, A., **Weil, A.B.**, and Mitra, G., Transect of the Sevier and Laramide orogenic belts, northern Utah to Wyoming: Evolution of a complex geodynamic system, *Geological Society of America Field Guide*, 33, 83-137.
- 38) ^**Weil, A.B.**, Gutiérrez-Alonso, G. and Wicks, D., Investigating the kinematics of local thrust sheet rotation in the limb of an orocline: a paleomagnetic and structural analysis of the Esla tectonic unit, Cantabrian–Asturian Arc, NW Iberia. *International Journal of Earth Science*. DOI 10.1007/s00531-012-0790-3.

## 2014

- 39) ^**Weil, A.B.**, Yonkee, A., Kendall, J., Towards a better understanding of the influence of basement heterogeneities and lithospheric coupling on foreland deformation: A structural

and paleomagnetic study of Laramide deformation in the southern Bighorn Arch, Wyoming, *Geological Society of America Bulletin*, 126 (3-4), 415-437.

## 2015

- 40) Gabriel Gutiérrez-Alonso, Collins, A., Fernández-Suárez, J., Pastor-Galán, D., González-Clavijo E., Jouran, F., **Weil, A.B.** and Johnston, S.T., Direct dating of lithospheric buckling:  $^{40}\text{Ar}/^{39}\text{Ar}$  ages of syn-orocline strike-slip shear zones in northwestern Iberia, *Tectonophysics*, 643, 44-54.
- 41) Yonkee, A. and **Weil, A.B.**, Tectonic evolution of the Sevier and Laramide belts within the North American Cordillera orogenic system, *Earth Science Reviews*, 150, 531-593.

## 2016

- 42) Murphy, Brendan, Quesada, C., Gutiérrez-Alonso, G., Johnston, S.T., **Weil, A.B.**, Reconciling competing models for the tectono-stratigraphic zonation of the Variscan orogen in Western Europe, *Tectonophysics*, 681, 209-219.
- 43) **Weil, A.B.**, Yonkee, A., Schultz, M., Tectonic evolution of a Laramide transverse structural zone: Sweetwater Arch, south central Wyoming, *Tectonics*, 35, 1090-1120.
- 44) **Karacic, S.**, Jameson, M., **Weil, A.B.**, A Burning Issue: Firing Temperatures and the production of Late Bronze Age pottery from Tarsus-Gözlükule, Turkey, *Journal of Archaeological Science: Reports*, 9, 599-607.
- 45) Yonkee, A., **Weil, A.B.**, Structural evolution of an en echelon fold system within the Laramide foreland, central Wyoming: From early LPS to fault propagation and linkage, *Lithosphere*, submitted.

## Manuscripts in preparation

- Yonkee, A. and **Weil, A.B.**, Kinematics of an east-west Laramide uplift: evolution of LPS and vertical-axis rotations in the Thermopolis Anticline, Wyoming.
- Weil, A.B.** and Yonkee, A., Integrated structural, anisotropy of magnetic susceptibility (AMS), and paleomagnetic study of a classic triangle zone between the Precordillera and Sierra Pampeanas of Argentina between 28°S AND 33°S.
- Weil, A.B.** and Gray, M.B., Kinematics and deformation evolution in the Bear Valley strip mine, East-Central Pennsylvania: a fault kinematic and anisotropy of magnetic susceptibility (AMS) analysis.

## Selected Abstracts:

- <sup>^</sup>Ashby, J.M., Geissman, J.M. and **Weil, A.B.**, 2001. Paleomagnetic results from the Neoproterozoic Uinta Mountain Group, Utah and Colorado, *Abstracts with Programs*, GSA 2001 Annual Meeting.
- <sup>^</sup>Gage, J., Weil, A.W., and Pares, J., Preliminary AMS analysis of the Brevard Shear Zone, Rosman, NC, *Abstracts with Programs*, GSA 2004 Annual Meeting.
- <sup>\*\*</sup>Gutiérrez-Alonso, G., Fernández-Suárez, J. and **Weil, A.B.**, Orocline triggered lithospheric delamination? *Field-Workshop, Variscan to Post-Variscan fluid flow and Zn-Pb Mineralisation in Europe*. GSA 2013 Annual Meeting.

- Gutiérrez-Alonso, G., **Weil, A.B.** and Johnston, S.T., Oroclines: what we know and what we don't: *GSA BULLETIN: 125th Celebration Presentations*, GSA 2012 Annual Meeting.
- \*\* Johnston, S.T., **Weil, A.B.** and Gutiérrez-Alonso, G., Oroclines: Thick and Thin ; *SPECIAL SESSION: GSA BULLETIN: 125th Celebration Presentations*, GSA 2012 Annual Meeting.
- ^^ Kendall, J., Peiyang, W., **Weil, A.B.**, Yonkee, A., Anisotropy Of Magnetic Susceptibility, Paleomagnetic, And Structural Studies Of Triassic Red Beds From The Southeast Flank Of The Laramide Big Horn Arch, Wyoming: : GSA 2010 Annual Meeting.
- \*\* Van der Voo, R., **Weil, A. B.** and Zegers, T, 1999. The making of a supercontinent with paleomagnetic data, *abstract for the Aarhus meeting*.
- \*\* Van der Voo, R., **Weil, A. B.** and Peacor, D.R., 2000. Paleomagnetism, Rock Magnetism, Mineralogy and Geochemistry of Remagnetized Carbonates: How Little Have We Learned About Models and Mechanisms for Remagnetizations, *EOS Trans.*, Fall 1999 Meeting, 80, 45, p. F298.
- \*\* Van der Voo, R. and **Weil, A. B.**, 2001. The Fold Test in Paleomagnetism, EGS abstracts, 2001 meeting, *Annales Geophysicae*.
- \*\* **Weil, A.B.**, Van der Voo, R., Mac Niocaill, C., and Meert, J.G., 1996. The Proterozoic Supercontinent Rodinia: a Paleomagnetic look at 1,100 to 800 Ma continental reconstructions, *EOS Trans.*, Spring 1996 Meeting, 77, p. S87.
- Weil, A.B.**, Geissman, J., Van der Voo, R. and Karlstrom, K., 1999. Preliminary paleomagnetic results from a suite of Proterozoic dikes from the Grand Canyon Supergroup, Arizona, *EOS Trans.*, Spring 1999 Meeting, 80, 17, p. S91.
- \*\* **Weil, A.B.**, 2000. Deformation induced remagnetization of carbonates: A rock magnetic and SEM perspective, *Santa Fe V conference on Rock Magnetism*.
- Weil, A.B.**, A revised look at Laurentia's Proterozoic Apparent Polar Wander Path: Implications for paleogeography and the Rodinia supercontinent, *Abstracts with Programs, GSA 2001 Annual Meeting*.
- Weil, A.B.**, Geissman, J. and Van der Voo, R., Paleomagnetic results from the Upper Unkar Group and overlying Nankowep Formation from the Grand Canyon Supergroup (GCSG), Arizona: Implications for Laurentia's Neoproterozoic APWP, *EOS Trans.*, Fall 2001 Meeting, 82, 47, p. F315.
- \*\* **Weil, A. B.** and Sussman, A.J., Oroclines and other curved thrust belts: Clarification and Classification, GSA 2002 Annual Meeting.
- Weil, A.B.**, Gutiérrez-Alonso, G., Fernández-Suárez, J., Orocline triggered lithospheric delamination, GSA 2003 Annual Meeting.
- \*\* **Weil, A.B.**, Deformation of Charelston Chew Candy Bars as a rheology analogue in the structural geology classroom, GSA 2004 Annual Meeting.
- Weil, A.B.**, Sussman, A., and Yonkee, A., Determining the 3-D kinematic history of the Wyoming salient of the Sevier fold-thrust belt: Preliminary results from a paleomagnetic investigation of the Triassic Ankareh Formation, GSA 2005 Annual Meeting.
- Weil, A.B.**, Did Variscan Europe behave as an oroclinally bent ribbon continent during the latest carboniferous?, GSA 2007 Annual Meeting.
- ^^ **Weil, A.B.**, Gutierrez-Alonso, Gabriel, Conan, Jordan, and Tomich, Mathew, Preliminary paleomagnetic data from early Permian rocks from northern Iberia, implications for the timing of late Variscan oroclinal bending: GSA 2007 Annual Meeting.
- \*\* **Weil, A.B.**, The power of integration: combining paleomagnetic data with structural analysis to better understand the kinematics and mechanics of complex orogens, *AGU 2008 Spring Meeting*.
- \*\* **Weil, A.B.**, Our state of understanding the mechanisms for carbonate remagnetization: unraveling the causes and consequences for authigenic Fe-oxide production, *AGU 2009 Spring Meeting*.

- ^^Weil, A.B.**, Yonkee, A., Wicks, D. and Statman-Weil, Zoe, Determining the 3-d kinematic history of the Wyoming Laramide foreland: preliminary results from a paleomagnetic investigation of the Triassic Chugwater group: GSA 2009 Annual Meeting.
- ^^Weil, A.B.**, Yonkee, A., Wicks, D., and Statman-Weil, Zoe, Determining the 3-d kinematic history of the Wyoming Laramide foreland: preliminary anisotropy of magnetic susceptibility results from the Triassic Chugwater group: GSA 2009 Annual Meeting.
- Weil, A.B.**, Yonkee, A., Using AMS of weakly deformed red beds for determining the spatial and temporal evolution of layer parallel shortening fabrics in the Cordilleran of Wyoming, USA: AGU 2009 Fall Meeting.
- Weil, A.B.**, Yonkee, A., Layer Parallel Shortening Across The Cordillera Of Wyoming: Spatial And Temporal Variability During The Sevier And Laramide Orogenies: GSA 2010 Annual Meeting.
- \*\*Weil, A.B.**, Yonkee, A., Using AMS of weakly deformed red beds for determining the spatial and temporal evolution of layer parallel shortening fabrics in the Cordilleran of Wyoming, USA: AGU 2010 Fall Meeting.
- Weil, A.B.**, Gutiérrez-Alonso, G. and Johnston, S.T., Kinematic constrains on lithospheric-scale oroclinal bending of the Ibero-Armorican arc along the northern margin of Gondwana: a paleomagnetic and structural synthesis: GSA 2011 Annual Meeting.
- ^^Weil, A.B.**, Yonkee, A., Schultz, M. and Lee Zhi Yi, A., Early LPS patterns along the Sweetwater Arch- Shirley mountain system of the Laramide foreland: regional refraction of stress field and development of multiple structural trends: GSA 2011 Annual Meeting.
- ^Weil, A.B.**, Yonkee, A., Kendall, J., Development of en echelon fold systems on the flanks of two major Laramide arches: GSA 2012 Annual Meeting.
- \*\*Weil, A.B.**, Yonkee, A., Evolution of The Western Cordillera Margin: Through The Sevier And Into The Laramide: GSA 2013 Annual Meeting – *Pardee Talk*.
- \*\*Weil, A.B.**, Yonkee, A., styles of layer-parallel shortening and vertical-axis rotations in the Precordillera and western Sierras Pampeanas, Argentina: GSA 2014 Annual Meeting.
- Weil, A.B.** and Yonkee, A., Integrated structural, anisotropy of magnetic susceptibility (AMS), and paleomagnetic study of a classic triangle zone between the Precordillera and Sierra Pampeanas of Argentina between 28°S AND 33°S: GSA 2016 Annual Meeting.
- ^^^Weil, A.B.**, Whitty, H., Kannad, A., Gray, M.B., Cush, K., Testing Kinematic Models of Deformation Sequence in the Bear Valley Strip Mine, East-Central Pennsylvania: a Fault Kinematic and Anisotropy of Magnetic Susceptibility (AMS) Analysis: GSA 2016 Annual Meeting.
- ^Wicks, D. Weil, A.B. and Gutiérrez-Alonso**, Paleomagnetic Analysis Of The Interaction Between Thrust Sheet Rotation And Basement Structures In The Esla Nappe Tectonic Unit, NW Iberia: GSA 2010 Annual Meeting.
- Yonkee, A. and **Weil, A.B.**, A refined statistical approach to the paleomagnetic strike test: applications to the Wyoming salient, Sevier fold-thrust belt, AGU 2007 Fall Meeting.
- Yonkee, A. and **Weil, A.B.**, Three-dimensional kinematic history of the Wyoming Salient of the Sevier orogenic belt, *Backbone of Americas – Patagonia to Alaska*, 2006.
- Yonkee, A. and **Weil, A.B.**, Testing Tectonic Models Of The Wyoming Laramide Foreland: Integrated Structural, AMS, And Paleomagnetic Analysis Of The Triassic Chugwater Group: GSA 2010 Annual Meeting.
- Yonkee, A. and **Weil, A.B.**, Unraveling the early LPS-stress history of the Laramide foreland: integrating field studies of minor faults with stress inversion and AMS studies: GSA 2011 Annual Meeting.
- \*\*Yonkee, A. and Weil, A.B.**, Tectonic transect of the Sevier fold-thrust belt: evolution of a complex orogenic wedge: GSA 2013 Annual Meeting.
- \*\*Yonkee, A. and Weil, A.B.**, Tectonic evolution of the Laramide and Sevier belts, North American cordillera: varying responses of lithosphere to changing subduction patterns: GSA 2015 Annual Meeting.



\*\* - Invited talks/papers; ^ - Indicates # of student co-author

### **Invited Lectures**

Bryn Mawr College  
 Science and Society (2)  
 Spanish Colloquium  
 First Thursday Research Talk – Provost hosted (2)  
 Family weekend Research Talks (2)

Bucknell University  
 Colorado College  
 Franklin and Marshall College  
 Gondwana 14 Symposium - Brazil  
 Huelva University, Spain  
 Lafayette College  
 Lehigh University  
 Oviedo University, Spain  
 Smithsonian Research Institute, Panama City, Panama  
 Southern Illinois University  
 Temple University  
 University of Arizona (co-authored)  
 University of California at Santa Cruz  
 University of Michigan – Smith Lecture Series  
 University of Minnesota – Institute of Rock Magnetism (2)  
 University of Oslo, Norway  
 University of Oklahoma  
 University of Salamanca, Spain  
 University of Texas at Austin (co-authored)  
 University of Wisconsin - Structural Geology and Tectonics Forum  
 University of Wyoming Distinguished lecture series  
 University of Utah (co-authored)  
 Utah State University  
 West Chester University  
 Williams College

### **Convened Professional Meeting Sessions**

- 2000** - Rock- and Paleo-Magnetism  
*American Geophysical Union 2000 Spring Meeting*
- 2001** - Geomagnetism and Paleomagnetism  
*American Geophysical Union 2001 Fall Meeting*
- 2002** - Topical Session - Thrust Belt Curvature: Integrating Paleomagnetic and Structural Analysis  
*Geological Society of America 2002 National Meeting*
- 2007** - New Innovations in Rock- and Paleo-Magnetism  
*American Geophysical Union 2007 Fall Meeting*
- 2011** - Recent Advances in Structural Geology  
*Geological Society of America 2011 National Meeting*
- 2012** - Innovative approaches in Structural Geology  
*Geological Society of America 2012 National Meeting*
- 2013** - Orogeny in the US West: Hinterland, Retroarc Fold-Thrust Belt, and Foreland Systems  
*Geological Society of America 2013 National Meeting*

- 2015** - Topical Session - Perspectives on orogenic evolution, dating brittle faults and mylonitic shear zones, bending mountains and assembling supercontinents: a session to honor the career of Ben van der Pluijm  
*Geological Society of America 2015 National Meeting*
- 2016** - Topical Session - Intrusion, Accretion, Exhumation, and Collapse: Tectonics around the World  
*Geological Society of America 2016 National Meeting*

### **Professional Service**

- Member of the executive committee for the Structural Geology and Tectonics division of the Geological Society of America
- Chair of Best Paper Award Committee for the Structural Geology and Tectonics division of the Geological Society of America – 2010-2011
- Associate Editor of the *Geological Society of America Bulletin*
- Co-leader of a UNESCO sponsored International Geoscience Program (IGCP) focused on Ribbon continents and curved orogens – includes participation in two international field trips a year for five years started in 2009
- Co-Editor of the Journal *Lithosphere* – published by the Geological Society of America (2013-2017)
- Co-leader of a GSA field trip across the Cordillera Foreland system

### **Refereed Publications**

Tectonophysics (16 papers), EPSL (10 papers), Geofluids (2 papers), Geology (6 paper), Geophysical Journal International (6 paper), GSA Special Paper (Volume 364), GSA Bulletin (8 papers), Tectonics (11 papers), Journal of Geophysical Research (8 papers), Geophysical Research Letters (3 paper), Gondwana Research (5).

### **Teaching**

*Courses Taught, Bryn Mawr College (2001 – present)*

- GEOL 101 How the Earth Works (Fall '01; '02; '03; '05; '06; '07; '09; '10; '12; '14)
- GEOL 204 Structural Geology (Spring '02; '03; '04; '06; '07; '09; '10; '11; '12; '13; '14)
- GEOL 209 Natural Hazards and Human Populations (Spring '03; '04; '06; '09)
- GEOL 304 Tectonics (Fall '03; '05; '08; Spring '10; Fall '12)
- GEOL 310 Geophysics (Fall '02; '06; '09; '13)
- GEOL 350 Precambrian Paleomagnetism (Spring '06)
- GEOL 350 Snowball Earth (Spring '10)
- GEOL 350 Appalachian Tectonics (Spring '13; Fall '14)
- GEOL 350 Petrotectonics (Spring '14)
- GEOL 399 Senior Writing Seminar (Spring '10; '11; '13; '14)
- GEOL 610 Advanced Structure (Fall '01)
- GEOL 630 Advanced Tectonics (Spring '02)
- Emily Balch Seminar – Time (Fall '13)

### **Workshop Participation**

- **Teaching Structural Geology in the 21st Century** – *On the cutting edge: Professional Development for Geoscience Faculty* (a week in 2004).
- **Connecting Geoscience Departments to the Future of Science: New Structures for Research and Curriculum** – *Science Education Resource Center at Carleton College* - (a week in 2007).

- **Assessing Geoscience Programs: Theory and Practice** – *Science Education Resource Center at Carleton College* - (a week in 2009).
- **Connecting Liberal Arts Education to the Real World** - Mellon-funded Alliance to Advance Liberal Arts Colleges (AALAC) 2011 Assembly (Vassar College Spring 2011)
- **Structural Geology and Tectonics Forum** – NSF funded workshop for structural geologists – hosted by Williams College (Summer 2012)

### **Research Project Supervision**

- **\*\*Sara Toursher** - *Shear Sense Indicators, Geochemistry and Field Studies of Mylonitized Phoenix City Gneiss in West Georgia*, in completion of a senior thesis (2002).
- **^Amanda Rogers** - *Paleomagnetic investigation of the Uinta Mountain Supergroup: Implications for the Proterozoic Rodinia Supercontinent*, Bryn Mawr Summer Science Research Program (2002).
- **\*\*Kira Tushman (Vice President at BP)** - *Formation of Curved Mountain Belts: An investigation of the Wyoming Fold-Thrust Belt*, Bryn Mawr Summer Science Research Program (2003).
- **Sara Nicole McCullough** - *Geologic Investigation of the Wyoming Fold-Thrust Belt*, Bryn Mawr Summer Science Research Program (2003).
- **\*\*Kira Tushman (Vice President at BP)** - Senior Thesis Research Project on the structural geology of the Wyoming Salient, completion date: Winter 2003.
- **^\*\*JoAnn Gage - Marshall Fellowship Research Project:** *Anisotropy of Magnetic Susceptibility study of the Brevard Zone, North Carolina* - Summer 2004.
- **\*\*Melissa Lindholm** - *Kinematics of the Wyoming Fold-Thrust Belt*, Bryn Mawr Summer Science Research Program (2004).
- **\*\*Andrea Cutruzzula (Marathon Oil Senior Geologist)** - *An Investigation of the Wyoming Salient: The What, When, Where, and Why of Mountain Belt Curvature*, Bryn Mawr Summer Science Research Program (2004).
- **\*\*Brian Johnson (AGU Mass Media Fellow)** – *Precambrian Paleomagnetism review and reconstruction* (2004).
- **^\*\*Mathew Tomich** – *Wyoming Geology*, Bryn Mawr Summer Science Research Program (2005).
- **\*\*Evan Pugh** – *Wyoming Geology*, Bryn Mawr Summer Science Research Program (2005).
- **Anna Mazzariello (Senior Environmental Consultant)**– *Permian Rotations in Iberia, a study of oroclinal bending*, Bryn Mawr Summer Science Research Program (2006).
- **\*\*Zoe Ruge** – *Wyoming Geology and Paleomagnetism*, Funded from NSF Grant (Summer 2006)
- **\*\*Alexi Ernstoff** – *Structure of the Canadian Rocky Mountains*, Bryn Mawr Summer Science Research Program (2007).
- **^Jordan Conan** - *Time constraints on oroclinal bending of the Cantabria-Asturias Arc: a paleomagnetic study from northern Iberia*, in completion of a senior thesis (2008).
- **^\*\*David Wicks** – *Paleomagnetism of Laramide Uplifts*, Bryn Mawr Summer Science Research Program (2009).
- **^Zoe Statman-Weil** - *AMS of Laramide Uplifts*, Carleton College Summer Science Research (2009).
- **^Peiyong Wen** – *Paleomagnetism of Laramide red beds*, Bryn Mawr Summer Science Research Program (2010).

- \$^\*\***Jamie Kindall**– *AMS of Laramide deformed red beds*, in completion of a senior thesis (2011).
  - \*\***Erin Lynch** - *Polyphase Deformation of Precambrian Metasediments of the South Snowy Block, Beartooth Mountains, Yellowstone National Park, Wyoming and Montana*, in completion of a senior thesis (2011).
  - ^\*\***Meghan Fisher** - *Analysis of Slow Slip Triggered Tremors using Sonification and Audio Displays*, in completion of a senior thesis (2011).
  - \$^\*\***David Wicks** – *Paleomagnetism of Iberian carbonates*, in completion of a senior thesis (2011).
  - \$^\*\***Mary Shultz** – *Rocky Mountain Tectonics – Structural geology of the Wyoming Laramide*, Bryn Mawr Summer Science Research Program (2011).
  - ^\*\***Amelia Lee Zhi Yi** – *Rocky Mountain Tectonics – Paleomagnetism of the Wyoming Laramide*, Bryn Mawr Summer Science Research Program (2011).
  - ^**Bryan Gulotta**, *Rupture propagation and slip at complex fault intersections: The San Andreas-San Jacinto-Cucamonga fault system in Cajon Pass, CA*, in completion of a senior thesis (2012).
  - ^\*\***Alina Bricker**, *Tectono-thermal Uplift History of Archean Basement Rocks in the Beartooth Mountains: Rates and Dates of a classic Laramide Arch*, in completion of a senior thesis (2012).
  - \$^\*\***Mary Shultz** – *Early Layer-Parallel Shortening patterns along the Sweetwater Arch-Shirley Mountain Tectonic Zone of the Laramide Foreland: refraction of the regional stress field and development of multiple structural trends*, in completion of a senior thesis (2012).
  - \*\* **Fern Esperanza Beetle-Moorcroft** – *A terrane wreck? Or just a slip up? A paleomagnetic study of terrane accretion in the western Cordillera*
  - \$^\*\***Rachel Clark** – *Seismic stratigraphy of the Shatsky Rise, Pacific Ocean*.
  - \*\***Christine Newville** – *Tectonics of the Sierra Pampeanas Ranges, Argentina*.
  - ^\*\***Meg Sumner-Moore** – *Potential health hazards of fibrous amphibole minerals from the Wilson Ridge pluton, Arizona*, in completion of a senior thesis (2015).
  - **Robin Chernowski** – *Anisotropy of Magnetic Susceptibility as a recorder of early Layer Parallel Shortening in the Sierra Pampeanas Ranges, Argentina*, in completion of a senior thesis (2015).
  - **Helen Whitty** - *Anisotropy of Magnetic Susceptibility as a recorder of early Layer Parallel Shortening in the Sierra Pampeanas Ranges, Argentina* – summer research.
  - ^ **Helen Whitty and Ankitha Kannad** - *Testing kinematic models of deformation sequence in the bear valley strip mine, east-central Pennsylvania: a fault kinematic and anisotropy of magnetic susceptibility (AMS) analysis*
- \*\* indicates a student that went/is going on to graduate school in geology  
 ^ indicates student presented results at a national conference.  
 \$ indicates thesis became a student co-authored peer reviewed publication

### College Committees

- |  |                |
|--|----------------|
| • Independent Majors Committee           | 2002 - 2005    |
| • College Admissions (Chair)             | 2006 - 2009    |
| • Geology Department Chair               | 2008 - present |
| • Tri-College Teagle Assessment Group    | 2009 - 2012    |
| • Chair of Science Chairs                | 2009 - 2011    |
| • Committee on Academic Priorities (CAP) | 2010 - 2014    |

- Park Renovation Committee Faculty representative 2014 - present
- Junior Faculty liaison 2014 - 2016