June 2025

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Arlo Brandon Weil

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
- Marion Bridgman Slusser Professor in the Sciences — 2019 – 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 (**$150,000.00**)*
- Geological Society of America 2017 ***Outstanding Publication Award in Tectonics***:
    - Yonkee, A. and Weil, A.B., 2015. Tectonic evolution of the Sevier and Laramide belts within the North American Cordillera orogenic system, Earth Science Reviews, 150, 531-593.
- The Marion Bridgman Slusser Professor in the Sciences – Bryn Mawr College

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: Current H-index as of 2019 is 30.

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.

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.*

5) Weil, A.B., Van der Voo, R. and van der Pluijm, B., 2001. 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.*

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., 2002. 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.

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

9) Gutiérrez-Alonso, G., Fernández-Suárez, J. and **Weil, A.B, 2004.** Orocline triggered lithospheric delamination?, in: Paleomagnetic and structural analysis of orogenic curvature*, Geologic Society of America Special Paper 383, 121-131.*

10) Gutiérrez-Alonso, G., Fernández-Suárez, J. and **Weil, A.B, 2004.** Oroclinales y delaminacion: relaciones y efectos, Geo-Temas, 6(3), 69-74.

11) Weil, A.B and Sussman, A., 2004. 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.*

12) Weil, A.B, Geissman, and Van der Voo, R., 2004. 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.

13) Sussman, A. and **Weil, A.B** (editors), 2004. Paleomagnetic and structural analysis of orogenic curvature, *Geologic Society of America Special Paper 383, p. 271.*

14) Ashby, J.M., Geissman, J.W., and **Weil, A.B.,** 2005. 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.

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

16) Weil, A.B., 2006. 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*.

17) Tohver, E., and **Weil, A.B.,** 2008. 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, 2008. 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, 2008.** Uso de un escáner Láser para la descripción y análisis de estructuras geológicas : los boudines de Almograve (Portugal), del afloramiento al laboratorio, *Geotemas*, 10, 365-368.

20) Johnston, S.T., Monahan, A.M., Gabriel Gutiérrez-Alonso and **Weil, A.B.,** 2009. The significance of bent mountain belts, *Trabajos de Geología*, 29, 388-8921.

21) Weil, A.B., and Yonkee, A., 2009. 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.

22) Weil, A.B., and Yonkee, A., 2009. 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.

23) ^Weil, A.B., Gabriel Gutiérrez-Alonso, Jordan Conan, 2010. 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., 2010. Reconstructing the kinematics of thrust sheet rotation: a paleomagnetic study of Triassic redbeds from the Wyoming Salient, U.S.A., *GSA Bulletin*, 122, ½ 2-23.

25) Yonkee, A., **Weil, A.B.,** and Sussman, A.,2010. Reconstructing the kinematic evolution of curved mountain belts: internal strain patterns in the Wyoming Salient, Sevier thrust belt, U.S.A., *GSA Bulletin,* 122, ½, 24-50.

26) Yonkee, A., and **Weil, A.B., 2010.** Quantifying vertical-axis rotation in curved orogens: integrating multiple data sets with a refined weighted least-squares strike test**,** *Tectonics, doi:10.1029/2008TC002312.*

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

28) ^Pastor-Galán, Gutiérrez-Alonso, G. and **Weil, A.B., 2011.** Orocline timing through joint analysis: insights from the Ibero-Armorican Arc, *Tectonophysics,* 507, 31-46.

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.

30) **^ Gabriel Gutiérrez-Alonso, **Weil, A.B.**, Johnston, S.T., Pastor-Galán, D. and Fernández-Suárez, J., 2012. 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.**, 2012. 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.**, 2012. 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., 2012. 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*.

35) **Weil, A.B.,** Gutiérrez-Alonso, G., Johnston, S.T. and Pastor-Galán, D.,2013. 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., 2013. 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., 2013. 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., 2013. 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.

39) ^Weil, A.B., Yonkee, A., Kendall, J., 2014. 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.*

40) Gabriel Gutiérrez-Alonso, Collins, A., Fernández-Suárez, J., Pastor-Galán, D., González-Clavijo E., Jouran, F., **Weil, A.B.** and Johnston, S.T., 2015. Direct dating of lithospheric buckling: 40Ar/39Ar ages of syn-orocline strike-slip shear zones in northwestern Iberia, *Tectonophysics, 643, 44-54.*

41) Yonkee, A. and **Weil, A.B.,** 2015. Tectonic evolution of the Sevier and Laramide belts within the North American Cordillera orogenic system, *Earth Science Reviews, 150, 531-593.*

42) Murphy, Brendan, Quesada, C., Gutiérrez-Alonso, G., Johnston, S.T., **Weil, A.B.**, 2016. 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., 2013. 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., 2016.** 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.,** 2016. Structural evolution of an en echelon fold system within the Laramide foreland, central Wyoming: From early LPS to fault propagation and linkage, *Lithosphere*, 9, 828-850.

46) Yonkee, A. and **Weil, A.B.,** 2017. Structural evolution of an en echelon fold system within the Laramide foreland, central Wyoming: From early layer-parallel shortening to fault propagation and fold linkage, Lithosphere, 9 (5), 828-850, doi.org/10.1130/L622.1.

47) Weil, A.B., Pastor-Galán, D., Johnston, S.T. and Gutiérrez-Alonso, G., 2017. Late/post Variscan orocline formation and widespread magmatism, The Geology of Iberia: A Geodynamic Approach, 527-542.

48) Weil, A.B., Sak, PB and McQuarrie, N., 2018. Reevaluating 50 years of Pennsylvania Salient Paleomagnetism, *AGU Journal.*

49) Pastor-Galán, Daniel, Gutiérrez-Alonso, Gabriel, and **Weil A.B.**, 2020. The enigmatic curvature of Central Iberia and its puzzling kinematics. *European Geophysical Union Solid Earth Geophysics*, 11, 1-59.

52) Weil, A.B. and Yonkee, A., 2023. The Laramide orogeny: Current understanding of the structural style, timing, and spatial distribution of the classic foreland thick-skinned tectonic system, *Geological Society of America Memoir, 220, 707-772*.

53) Yonkee, A., **Weil, A.B.,** Wells, M.L., 2023. Integrating Structural, Paleomagnetic, and Geochronologic Studies to Understand Evolution of Orogenic Systems: Sevier and Laramide Belts, North America Cordilleran, An invited review to *Journal of Structural Geology*.

54) **Weil, A.B.,** Gray, M.B., Cush, K.G., Needle, M.D. and Crider, J.G., 2025. Fold-Related Faults Track Progressive Fold Development from Layer-Parallel Shortening to Subsequent Orthogonal Extension within an Appalachian Buckle Fold System: Bear Valley Mine, Shamokin, PA, USA. Lithosphere, 2024(Special 15).

55) Yonkee, A. and **Weil, A.B.,** and Reeher, L., (under review). Kinematics of an east-west Laramide uplift: evolution of LPS and vertical-axis rotations in the Thermopolis Anticline, Wyoming.

Manuscripts in preparation

Reeher, L., **Weil, A.B.** and Yonkee, A., Tectonic stresses and their links to plate dynamics across the Colorado Plateau.

Weil, A.B., Yonkee, A., Tectonic stresses across the San Rafael Swell, Utah: linkages of the Sevier and Laramide tectonics systems in space and time.

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^{O}S AND 33^{O}S.

Yonkee, A., **Weil, A.B., and** Reeher, L., Spatial patterns of stress and drivers of Laramide deformation within the Colorado Plateau.

Selected Abstracts:

^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.

Crider, G.C., Gray, M.B., Needle, M. and **Weil, A.B.,** Enhancing scientific and educational resources at the Whaleback Anticline, Bear Valley, Pennsylvania, *Abstracts with Programs, GSA* 2017 Annual Meeting, Seattle.

^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.

^^^^Gray, M.B., **Weil, A.B.,** Cush, K., Whitty, H., Finley, B., Reach, A., Fold-related faulting at the Bear Valley strip mine, PA, *Abstracts with Programs, GSA* 2017 Annual Meeting, Seattle.

Gray, M.B., **Weil, A.B.,** Crider, JG, Needle, MD., Strain Within Folded Layers At The Whaleback Anticline, Shamokin, Pa, USA, *GSA* 2019 Annual Meeting.

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., Peiying, 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.

Needle, M, Crider, J., Gray, M.B., **Weil, A. B.,** Does curvature correspond to fold-related strain in the anticlines at Bear Valley, Shamokin, PA, USA?: *GSA* 2019 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 Nankoweap Formation form 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^{O}S AND 33^{O}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.

****Weil, A.B.** and Yonkee, A., Integrating AMS and paleomagnetism to fully restore shortening directions across complex orogenic systems (invited presentation), *GSA* 2017 Annual Meeting.

****^Weil, A.B.**, Yonkee, A., Whitty, H., Regional patterns to local variations in paleo-stress/strains and vertical-axis rotations across part of the Argentinian Andes: deciphering contributions from plate-margin processes to crustal architecture, *GSA* 2017 Annual Meeting.

****Weil, A.B.** and Yonkee, A., Using detailed paleomagnetic studies to better understand complex orogenic systems-the legacy and influence of John Geissman, *GSA* 2019 Annual Meeting.

Weil A.B., and Yonkee, A., The Laramide orogeny: modern understanding of the structural style, timing, and spatial distribution of a classic foreland thick-skinned tectonic system: *GSA* 2021 Annual Meeting.

Weil A.B., and Yonkee, A., Using regional kinematic datasets to better understand tectonic systems: an example from the North American Laramide foreland: *GSA* 2022 Annual Meeting.

^^Weil A.B., Yonkee, A., Reeher, L, Lyster, S., and York, A., Investigating the Sevier to Laramide transition stress/strain history in the Colorado Plateau: a detailed look at the San Rafael swell and its kinematic evolution: *GSA* 2023 Annual Meeting.

Weil A.B., and Yonkee, A., Tectonic evolution of the Wyoming Laramide foreland in the context of the North America Cordilleran orogenic system: 2023 Penrose Conference.

^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.

Yonkee, A. and **Weil, A.B., Evolution of the Laramide Foreland from Early Layer-Parallel Shortening to Fault Linkage and Arch Growth: Relations to Lithospheric Stress Transmission and Crustal Architecture: *AGU* 2018 Annual Meeting.

^^Yonkee, A. and **Weil, A.B.,** Wessel, A., and Child, Celia, Paleostress/ strain and rotation patterns across parts of the Colorado Plateau and Uinta arch: preliminary results of structural, paleomagnetic, and anisotropy of magnetic susceptibility studies from multiple stratigraphic levels: *GSA* 2019 Annual Meeting.

Yonkee, A. and **Weil, A.B.,** Evolution of the Sevier and Laramide belts within an integrated orogenic system: *GSA* 2020 Annual Meeting.

Yonkee, A. and **Weil, A.B.,** Integrating structural, paleomagnetic, and geochronologic datasets to better understand tectonic systems: an example from the North American Sevier fold-thrust belt: *GSA* 2022 Annual Meeting.

Yonkee, A. and **Weil, A.B.,** Tectonic evolution of the Wyoming salient of the Sevier fold-thrust belt in the context of the North America Cordilleran orogenic system: 2023 Penrose Conference.

** **- 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)
- Marion Bridgman Slusser Professor in the Sciences Lecture

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 California at Davis
University of Florida
University of Michigan – Smith Lecture Series
University of Michigan – Van der Voo lecture 2023
University of Minnesota – Institute of Rock Magnetism (3)
University of Nevada Reno
University of Oslo, Norway
University of Oklahoma
University of Salamanca, Spain
University of Texas at Austin (co-authored)
University of Wisconsin
University of Wisconsin - Structural Geology and Tectonics Forum
University of Wyoming Distinguished lecture series
University of Utah (co-authored)
Utah State University (2)
Weber State University, Utah (2)
West Chester University (2)
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 - 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-Science 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
- Co-edited a special volume for the Journal Lithosphere- Perspectives on orogenic evolution, dating brittle faults and mylonitic shear zones, bending mountains and assembling supercontinents

Teaching

Courses Taught, Bryn Mawr College (2001 – present)

- GEOL 101 How the Earth Works ('01; '02; '03; '05; '06; '07; '09; '10; 12; ’14; ’16; ’17; 19’; 20’; 21’; 22’; 23’;24’)
- GEOL 204 Structural Geology ('02; '03; '04; '06; '07; '09; '10; '11; ’12; ’13; ’14; ’17; ‘18; 19’; 20‘; 21’; 22’; 23’; 24’; 25’)
- GEOL 209 Natural Hazards and Human Populations ('03; '04; '06; '09)
- GEOL 304 Tectonics ('03; '05; '08; '10’; ’12; ‘16; 19’; 21’; 24’)
- GEOL 310 Geophysics ('02; '06; '09; ’13; ’16; 18’; 20’; 23’)
- GEOL 350 Precambrian Paleomagnetism ('06)
- GEOL 350 Snowball Earth ('10)
- GEOL 350 Appalachian Tectonics (’13; ’14; ’18; 21’; 23’)
- GEOL 350 Petrotectonics (’14)
- GEOL 399 Senior Writing Seminar (annually)
- GEOL 610 Advanced Structure ('01)
- GEOL 630 Advanced Tectonics ('02)
- Emily Balch Seminar – Time (’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)
- **Modern and Ancient Basement Cored Uplifts and the Connection to Flat Slab Subduction -** A Workshop Co-Sponsored by the Eastern Sierras Pampeanas Experiment and the Bighorns Arch EarthScope Project (February, 2014)

- **Increasing Diversity and Inclusion for Underrepresented Scholars in Earth Sciences: Addressing an Urgent Challenge Workshop –** sponsored by the National Academics of Sciences Engineering and Medicine. (Fall 2020)
- **URGE – Unlearning Racisms in Geoscience –** member of the Bryn Mawr College POD that has bi-weekly meeting s to discuss and create pro-active plans to combat racism in the Geosciences. (Spring 2021)

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*, Carelton College Summer Science Research (2009).

- **^Peiying 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 (thesis 2018).
- **^ 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*
- ** ^ **Katie Billings -** Vertical Axis Rotation And The Kinematic Evolution Of The Pennsylvania Salient: Paleomagnetic And Anisotropy Of Magnetic Susceptibility (Ams) Support For A Progressive Arc Model, in completion of a senior thesis (2018).
- **^ Amanda Wessel and Celia Child –** Tectonics of Laramide and Sevier deformation in central and Southern Utah – summer research 2019.
- **Celia Child –** Geology Outreach at the Riverbend Environmental Education Center, in completion of a senior thesis (2020).

- **Angie Bonanno and Allison Velasquez** - Tectonics of Laramide across the Colorado Plateau region – summer research 2021.
- ****Angie Bonanno -** The Laramide Orogeny: an Anisotropy of Magnetic Susceptibility and structural analysis of thick-skinned deformation and layer-parallel shortening directions in the Colorado Plateau, Laramide foreland basin, in completion of a senior thesis (2022).
- **^Samantha Lyster and Aidan York**- Tectonics of Laramide across the Colorado Plateau region – summer research 2023.
- ****^Samantha Lyster -** Investigating the extent of vertical axis rotations along steep forelimbs of Laramide arches in the Colorado Plateau, in completion of a senior thesis (2024).
- ****^Aidan York -** Creating an authoritative database of Laramide-era shortening directions from original and compiled data, in completion of a senior thesis (2024).
- ****^$Rosa Eliane Bieber-Stanley** - Deciphering the curve of the Utah Sevier belt: a study integrating AMS, structural, and paleomagnetic data
- **Clay Stoltenberg** - Effects of Pore Fluid on the Acoustics of Granular Material

**** 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; 2016 - 2022
• Committee on Academic Priorities (CAP)	2010 - 2014
• Park Renovation Committee Faculty representative	2014 - 2016
• Junior Faculty liaison	2014 - 2016
• Faculty Welfare Committee (Chair – 2019)	2018 - 2021
• Advisory Council	2019 - 2021
• COVID planning Working Group	2020 - 2021
• CAP faculty replacement	2024 - 2025
• Rebalancing Faculty Workload Committee (Chair)	2024 - present