

## Arthur J. Merschat

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### EDUCATION

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- Ph.D.** Dept. of Earth & Planetary Sciences, University of Tennessee—Knoxville, August 2009
- M.S.** Dept. of Geological Sciences, University of Tennessee—Knoxville, December 2003
- B.S.** Geology; physics and geography minors, Appalachian State University, May 2000, *Cum laude* & Honors from the Dept. of Geology and University Honors Program

### EMPLOYMENT HISTORY

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- Research Geologist, U. S. Geological Survey** (8/09 – Present)
- Student Career Experience Program, U. S. Geological Survey** (10/06 – 8/09)
- Graduate Research Assistant, University of Tennessee—Knoxville** (1/02 – 10/06)
- Geologist I, Division of Water Quality, NCDENR** (6/03-9/03)
- Graduate Teaching Assistant, University of Tennessee—Knoxville** (9/00 – 12/01)
- Undergraduate Teaching Assistant, Appalachian State University** (1/99 – 12/99)
- Geotechnician I, N. C. Department of Transportation Geotechnical Division** (5/97 – 7/97 & 5/98 – 7/98)
- Mineral Dresser, North Carolina State Minerals Research Laboratory** (5/96 – 8/96)

### PUBLICATIONS

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***Refereed:***

- Merschat, A.J., Hatcher, R.D., Jr., Byars, H.E., and Gilliam, W.G., 2012, The Neoacadian orogenic core of the southern Appalachians: A geo-traverse through the migmatitic Inner Piedmont from the Brushy Mountains to Lincolnton, North Carolina, *in* Eppes, M.C., and Bartholomew, M.J., eds., *From the Blue Ridge to the Coastal Plain: Field Excursions in the Southeastern United States: Geological Society of America Field Guide 29*, p. 171–217.
- Merschat, A.J., Hatcher, R.D., Jr., Bream, B.R., Miller, C.F., Byars, H.E., Gatewood, M.P., and Wooden, J.L., 2010, Detrital zircon geochronology and provenance of southern Appalachian Blue Ridge and Inner Piedmont crystalline terranes, *in* Tollo, R.P., Bartholomew, M.J., Hibbard, J.P., and Karabinos, P.M., eds., *From Rodinia to Pangea: The Lithotectonic Record of the Appalachian Region: Geological Society of America Memoir 206*, p. 661-699.
- Merschat, A.J., and Hatcher, R.D., Jr., 2007, The Cat Square terrane: Possible Siluro-Devonian remnant ocean basin in the Inner Piedmont, southern Appalachians, USA, *in* Hatcher, R.D., Jr., Carlson, M.P., McBride, J.H., and Martínez Catalán, J.R., eds., *4-D Framework of Continental Crust: Geological Society of America Memoir 200*, p. 553-566.
- Hatcher, R.D., Jr., Bream, B.R., and Merschat, A.J., 2007, Tectonic map of the southern and central Appalachians: A tale of three orogens and a complete Wilson cycle, *in* Hatcher,

- R.D., Jr., Carlson, M.P., McBride, J.H., and Martínez Catalán, J.R., eds., 4-D Framework of Continental Crust: Geological Society of America Memoir 200, p. 595-632.
- Hatcher, R. D., Jr., and Mersch, A. J., 2006, The Appalachian Inner Piedmont: An exhumed strike-parallel, tectonically forced orogenic channel, *in* Law, R. D., Searle, M., and Godin, L., eds., Channel flow, ductile extrusion and exhumation of lower-mid crust in continental collision zones: London, Geological Society of London Special Publication 268, p. 517-540.
- Mersch, A. J., Hatcher, R. D., Jr., and Davis, T. L., 2005, The northern Inner Piedmont, southern Appalachians, USA: Kinematics of transpression and SW-directed mid-crustal flow: *Journal of Structural Geology*, v. 27, p. 1252-1281. *Journal of Structural Geology Most Cited Paper 2005-2010*

***Field Trip guides, Guidebooks and others:***

- Mersch, A.J., Hatcher, R.D., Jr., Peterson, V., Stahr, D.W., III, Cyphers, S.R., and Jubb, M.G.V., 2012, Tectonics of the central and eastern Blue Ridge: Geotraverse from the Hayesville fault to the Brevard fault zone: Geological Society of America Southeastern Section Meeting, 64 p.
- Mersch, A.J., Hatcher, R.D., Jr., Byars, H.E., and Gilliam, W.G., 2008, Inner Piedmont Geotraverse from the Brushy Mountains to Lincolnton, North Carolina: Architecture of the Cat Square and Tugaloo terranes: Geological Society of America Southeastern Section Meeting, 64 p.
- Hatcher, R. D., Jr., Mersch, A. J., and Raymond, L. A., 2006, Geotraverse: Geology of northeastern Tennessee and the Grandfather Mountain region, *in* Labotka, T. L., and Hatcher, R. D., Jr., eds., Geological Society of America 2006 Southeastern Section meeting Field Trip Guidebook: University of Tennessee, Knoxville, p. 129-184.
- Hatcher, R. D., and Mersch, A. J., eds., 2005, Blue Ridge geology geotraverse east of the Great Smoky Mountains National Park, western North Carolina: Carolina Geological Society Guidebook, North Carolina Geological Survey, 132 p.
- Hatcher, R. D., Jr., Mersch, A. J., and Thigpen, J. R., 2005, Blue Ridge primer, *in* Hatcher, R. D., and Mersch, A. J., eds., Blue Ridge primer, *in* Hatcher, R. D., Jr., and Mersch, A. J., eds, Blue Ridge geology geotraverse east of the Great Smoky Mountains National Park, western North Carolina: Carolina Geological Society Guidebook, North Carolina Geological Survey, p. 1-24.
- Mersch, A. J., and Hatcher, R. D., Jr., eds., 2004, Trans Appalachians Internides Geotraverse: 17<sup>th</sup> International Basement Tectonics Post-conference field trip guidebook: Knoxville, Tennessee, 111 p.
- Mersch, A. J., 2003, Inner Piedmont Tectonics in the southwestern Brushy Mountains, North Carolina: Field and laboratory data revealing 3-D crustal flow and sillimanite I and II metamorphism [M. S. Thesis]: Knoxville, University of Tennessee, 198 p.
- Mersch, A. J., and Kalbas, J. L., 2002, Geology of the southwestern Brushy Mountains, North Carolina Inner Piedmont: A summary and synthesis of recent studies, *in* Hatcher, R. D., Jr., and Bream, B. R., eds., Inner Piedmont geology in the South Mountains-Blue Ridge Foothills and the southwestern Brushy Mountains, central-western North Carolina: Carolina Geological Society annual field trip guidebook, p. 101-126.
- Mersch, A. J., 2000, Description of the Unaka Mountain Fault [Senior thesis]: Boone, North Carolina, Appalachian State University, 23 p.

***Abstracts:***

- Mersch, A.J., Bream, B.R., Hatcher, R.D., Jr., and Huebner, M.T., 2012, Provenance of Blue Ridge and Inner Piedmont terranes from detrital zircon geochronology and whole-rock isotopic data, NC-SC-GA-TN: Geological Society of America Abstracts with Programs, v. 44, no. 7, p. 173.
- Mersch, A.J., Hatcher, R. D., Jr., and Huebner, M. T., 2012, Orogen-scale significance of dextral strike-slip faults: Links between terrane collision, deformation and clastic wedge

- sedimentation: Geological Society of America Abstracts with Programs, v. 44, no. 4, p 23.
- Merschat, A.J., Bream, B.R., Hatcher, R.D., Jr., and Huebner, M.T., 2012, Paleozoic assembly of the Blue Ridge and Inner Piedmont recorded by metamorphic zircon geochronology: Geological Society of America Abstracts with Programs, v. 44, no. 4, p 73.
- Aleinikoff, J.N., Southworth, C.S., and Merschat, A.J., 2012, Late Mesoproterozoic (ca. 1.0 ga) deposition of protoliths of the Carvers Gap and Cloudland Gneisses, Mars Hill terrane, NC-TN: new SHRIMP U-Pb ages of detrital zircon and monazite: Geological Society of America Abstracts with Programs, v. 44, no. 7, p. 171.
- Hatcher, R.D., Jr., Merschat, A.J., and Bream, B.R., 2012, Basis of southern Appalachian tectonostratigraphic terrane analysis: Geological Society of America Abstracts with Programs, v. 44, no. 4, p. 63.
- Holm-Denoma, C.S., Southworth, C.S., and Merschat, A.J., 2012, Detrital zircon geochronology of Neoproterozoic-Cambrian strata of the Appalachian Blue Ridge: Mt. Rogers, VA area: Geological Society of America Abstracts with Programs, v. 44, no. 7, p. 172.
- Raymond, L.A., Merschat, A.J., and Vance, R.K., 2012, Mineralogy, petrochemistry, and metamorphic changes in metaultramafic rocks across the Ashe Metamorphic Suite of northwestern North Carolina: Geological Society of America Abstracts with Programs, v. 44, no. 7, p. 173.
- Merschat, A.J., and Southworth, C.S., 2011, The Razor Ridge volcanic center and implications for the Mount Rogers and Konnarock Formations: Geological Society of America Abstracts with Programs, v. 43, no. 5, p. 46.
- Carter, M.W., Southworth, C.S., Merschat, A.J., Smoot, J., Aleinikoff, J.N., Tollo, R.P., and Holm-Denoma, C.S., 2011, New geologic mapping and research in the George Washington, Jefferson, Cherokee and Pisgah National Forests, Appalachian Blue Ridge, VA-NC-TN: Geological Society of America Abstracts with Programs, v. 43, no. 5, p. 143.
- Merschat, A.J., 2011, Geologic Map of the southern part of the Mouth of Wilson and southeast corner of the Grassy Creek 7.5-minute quadrangles, NC-VA: Ashe-basement contact revisited: Geological Society of America Abstracts with Programs, v. 43, no. 2, p. 66.
- Hatcher, R. D., Jr., Merschat, A.J., and Huebner, M.T., 2011, Conformation of the Acadian-Neoacadian orogeny driven by mid-Paleozoic accretion of the Carolina superterrane in the southern-central Appalachians: Geological Society of America Abstracts with Programs, v. 43, no. 1, p. 159.
- Hatcher, R. D., Jr., Merschat, A.J., Huebner, M.T., and Bream, B.R., 2011, New insight into Inner Piedmont (and Blue Ridge) geology from detailed geologic mapping and modern geochronology: Geological Society of America Abstracts with Programs, v. 43, no. 2, p. 16.
- Raymond, L. A., and Merschat, A. J., 2011, The structure and petrology of the Peden ultramafic body, NW North Carolina, USA: Geological Society of America Abstracts with Programs, v. 43, no. 2, p. 66.
- Merschat, A.J., and Hatcher, R.D., Jr., 2010, A review of the field relationships and geochronology of the Cat Square terrane and their implications for middle Paleozoic accretion of the Carolina superterrane: Geological Society of America Abstracts with Programs, v. 42, no. 1, p. 148.
- Southworth, C.S., Aleinikoff, J.N., and Merschat, A.J., 2010, SHRIMP U-Pb ages of detrital zircons from the Carvers Gap granulite gneiss: New evidence for a missing record of sedimentation and metamorphism in the Appalachian Blue Ridge: Geological Society of America Abstracts with Programs, v. 42, no. 5, p. 55.
- Byars, H.E., Hatcher, R.D., Jr., Wilson, C.G., and Merschat, A.J., 2009, Geochemical data provide keys to the formation of mafic complexes and smaller amphibolite bodies in the Cat Square terrane, eastern Inner Piedmont, North Carolina: Geological Society of America Abstracts with Programs, v. 41, no. 7, p. 682.

- Jubb, M.V., Hatcher, R.D., Jr., Mersch, A.J., Stahr, D.W., and Cyphers, S.R., 2009, Complex deformational history of parts of the North Carolina eastern Blue Ridge, southern Appalachians: New evidence of widespread Alleghanian deformation: Geological Society of America Abstracts with Programs, v. 41, no. 7, p. 130.
- Mersch, A.J., 2008, Rock descriptions, the zig-zag method, and petrotectonic assemblages: A thank you to Professor Loren Raymond for his service and research: Geological Society of America Abstracts with Programs, v. 40, no. 4, p. 67.
- Mersch, A.J., Bream, B.R., Hatcher, R.D., Jr., Miller, C.F., Carrigan, C.W., 2008, Delimiting the spatial extent of superposed metamorphic events of the Blue Ridge and Inner Piedmont with SHRIMP U-Pb ages of zircon rims: Geological Society of America Abstracts with Programs, v. 40, no. 4, p. 19.
- Bream, B.R., Hatcher, R.D., Jr., and Mersch, A.J., 2008, Looking outward: Constraints on the kinematics of oblique Devonian-Mississippian accretion of the peri-Gondwanan Carolina superterrane: Geological Society of America Abstracts with Programs, v. 40, no. 6, p. 449.
- Bream, B.R., Loewy, S.L., Mersch, A.J., Hatcher, R.D., Jr., Miller, C.F., 2008, Constraints on Blue Ridge and Inner Piedmont paragneiss provenance: Synthesis of detrital zircon and whole-rock Pb isotopes: Geological Society of America Abstracts with Programs, v. 40, no. 4, p. 28.
- Gilliam, W.G., Byars, H.E., Hatcher, R.D., Jr., and Mersch, A.J., 2008, Tectonic implications of geologic mapping the western Newton window, Inner Piedmont, NC: Geological Society of America Abstracts with Programs, v. 40, no. 4, p. 18.
- Varnell, M., Hatcher, R.D., Jr., Mersch, A.J., and Wooden, J.L., 2008, Limits on timing of deformation and plutonism in the eastern Blue Ridge, southwestern North Carolina, from geologic mapping and U-Pb zircon geochronology: Geological Society of America Abstracts with Programs, v. 40, no. 4, p. 28.
- Mersch, A.J., Bream, B.R., Hatcher, R.D., Jr., Miller, C.F., and Wooden, J.L., 2007, Provenance and timing of crust formation in the southern Appalachian crystalline core: Evidence from detrital zircon studies: Geological Society of America Abstracts with Programs, v. 39, no. 6, p. 341.
- Mersch, A.J., and Hatcher, R.D., Jr., 2007, The Neocadian orogeny in the southern and central Appalachians: A kinematic model linking Middle Devonian-Early Mississippian accretion of the Carolina superterrane, orogenic channel flow, and foreland sedimentation: Geological Society of America Abstracts with Programs, v. 39, no. 1, p. 68.
- Mersch, A.J., and Hatcher, R.D., Jr., 2007, Detailed geologic mapping of the central and eastern Blue Ridge contact in the Great Balsam Mountains, western North Carolina: Geological Society of America Abstracts with Programs, v. 39, no. 2, p. 78.
- Mersch, A.J., Hatcher, R.D., Jr., Stahr, D.W., Cyphers, S.R., and Eckert, J.O., Jr., 2007, Detailed geologic mapping in the Great Balsam and Cowee mountains, central and eastern Blue Ridge, western North Carolina: Geological Society of America Abstracts with Programs, v. 39, no. 2, p. 99.
- Mersch, A.J., Stahr, D.W., and Hatcher, R.D., Jr., 2007, The Chattahoochee fault, USA: An Appalachian Ordovician terrane boundary reactivated in the Late Devonian and Early Carboniferous: Geological Society, Continental Tectonics and Mountain Building, programme with abstracts, Ullapool, Scotland.
- Mersch, A.J., and Hatcher, R.D., Jr., 2006, Palinspastic restoration of the southern Appalachian Inner Piedmont: Links between the Acadian clastic wedge and high-temperature deformation in the crystalline core of the southern Appalachians: Geological Society of America Abstracts with Programs, v. 38, no. 3, p. 8.
- Mersch, A.J., Hatcher, R.D., Jr., Miller, C.F., and Wooden, J.L., 2006, Provenance of central and western Blue Ridge paragneisses, southwestern North Carolina: Geological Society of America Abstracts with Programs, v. 38, no. 3, p. 63.

- Merschat, A.J., Stahr, D.W., Hatcher, R.D., Jr., and Cyphers, S.R., 2006, Detailed geologic mapping the Great Balsam and Cowee Mountains, central and eastern Blue Ridge, western North Carolina: Geological Society of America Abstracts with Programs, v. 38, no. 7, p. 166.
- Merschat, A.J., Bultman, J.G., and Hatcher, R.D., Jr., 2005, Polydeformed Proterozoic basement in the Blue Ridge thrust complex of northeast Tennessee–northwest North Carolina: Part 1, Deciphering 1 billion years of southern Appalachian history preserved in an outcrop of middle Proterozoic rocks in the western Blue Ridge, North Carolina: Geological Society of America Abstracts with Programs, v. 37, no. 2, p. 36.
- Merschat, A.J., Gatewood, M.P., Fisher, C.M., Miller, C.F., Hatcher, R. D., Jr., Wooden, J. L., and Stahr, D.W., 2005, The Newton antiform, NC: a previously unrecognized window through the allochthonous Inner Piedmont thrust stack: Geological Society of America Abstracts with Programs, v. 37, no. 7, p. 20.
- Gatewood, M.P., Wilson, C.G., Merschat, A.J., and Hatcher, R.D., Jr., 2006, Inner Piedmont timing and relationships revealed through detailed geologic mapping, Brushy Mountains, NC: Geological Society of America Abstracts with Programs, v. 38, no. 3, p. 78.
- Hatcher, R.D., Jr., Bream, B.R., Merschat, A.J., Mapes, R.W., and Miller, C.F., 2005, Evidence for the (Neo-) Acadian Orogeny in the southern Appalachians: Geological Society of America Abstracts with Programs, v. 37, no. 2, p. 5-6.
- Wilson, C.G., Merschat, A.J., Gatewood, M.P., and Hatcher, R.D., Jr., 2005, Metamorphism, kinematics and crustal flow of the southern Appalachian orogenic core: Evidence from detailed geologic mapping in the Brushy Mountains, NC: Geological Society of America Abstracts with Programs, v. 37, no. 2, p. 40.
- Merschat, A.J., Hatcher, R.D., Bream, B.R., and Mapes, R.W., 2004, Middle to late Paleozoic accretion of the Carolina terrane: evidence from the Brindle Creek thrust sheet, Inner Piedmont, North Carolina: Geological Society of America Abstracts with Programs, v. 36, no. 2, p. 105.
- Merschat, A.J., and Hatcher, R.D., Jr., 2004, The Cat Square terrane: A Siluro-Devonian remnant ocean basin in the Inner Piedmont, Southern Appalachians?: 4-D Framework of Continental Crust, 17<sup>th</sup> International Basement Tectonics Conference, Program with Abstracts, p. 96-97.
- Merschat A.J., and Hatcher, R.D., Jr., 2004, The Appalachian Inner Piedmont, I: Boundary conditions of mid-Paleozoic SW-directed mid-crustal flow: Channel flow, ductile extrusion and exhumation of lower-mid crust in continental collision zones: Geological Society of London, Programme and Abstracts.
- Gatewood, M.P., Merschat, A.J., Hatcher, R.D., Jr., and Wilson, C.G., 2004, Inner Piedmont timing relationships and Neocadian crustal flow, Brushy Mountains, NC: results from detailed geologic mapping, structural and petrologic analyses: Geological Society of America Abstracts with Programs, v. 35, no. 5, p. 504.
- Gatewood, M.P., Merschat, A.J., Hatcher, R.D., Jr., Kalbas, J.L., and Wilson, C.G., 2004, Detailed geologic mapping, Brushy Mountains: Key to timing and kinematics of a terrane boundary: Geological Society of America Abstracts with Programs, v. 36, no., 2, p. 59.
- Hatcher, R.D., Jr., Bream, B.R., Merschat, A.J., Mapes, R.W., and Miller, C.F., 2004, Evidence for the (Neo-) Acadian orogeny in the southern Appalachians: Geological Society of America Abstracts with Programs, v. 37, no. 2, p. 5-6.
- Hatcher, R. D., Jr., and Merschat, A. J., 2004, The Appalachian Inner Piedmont: an exhumed orogenic channel: Geological Society of America Abstracts with Programs, v. 36, no. 5, p. 534-535.
- Hatcher, R.D., Jr., and Merschat, A.J., 2004, The Appalachian Inner Piedmont, II: an exhumed orogenic channel: Geological Society of London, Programme and Abstracts.
- Merschat, A.J., and Hatcher, R.D., Jr., 2003, Digital geologic map of the northern Inner Piedmont, NC-SC-GA: Geological Society of America Abstracts with Programs, v. 35, no. 1., p. 59-60.

- Mersch, A.J., Hatcher, R.D., Jr., and Bream, B.R., 2002, The Brindle Creek Thrust: A major fault and terrane boundary in the southern Appalachian Inner Piedmont, North Carolina-South Carolina-Georgia: Geological Society of America Abstracts with Programs, v. 34, no. 6, p. 327.
- Mersch, A.J., Raymond, L.A., and Webb, F., Jr., 2001, Geology of the Unaka Mountain-Limestone Cove Fault and a part of the Limestone Cove Window, North Carolina-Tennessee: Geological Society of America Abstracts with Programs, v. 33, no. 2, p. 67.
- Kalbas, J.L., Mersch, A.J., Hatcher, R.D., Jr., and Bream, B.R., 2001, Detailed geologic mapping of the Brushy Mountains, Inner Piedmont, near Lenoir, North Carolina: Geological Society of America Abstracts with Programs, v. 33, no. 6, p. 82.

## PROFESSIONAL SERVICE

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- 2012 *Co-leader*, Geological Society of America Annual Meeting; The Neocadian orogenic core of the southern Appalachians: A geo-traverse through the migmatitic Inner Piedmont from the Brushy Mountains to Lincolnton, North Carolina
- 2012 *Session chair*, Geological Society of America Annual Meeting; Heredity of Appalachian Crust
- 2012 *Session co-chair*, Geological Society of America Southeastern Section Meeting; Terranes of the Southern Appalachian Blue Ridge and Piedmont: Insights into Their Tectonic Heritage and Incorporation into the Orogen from Recent Geochronologic, Isotopic, Provenance, and Field Studies
- 2012 *Co-leader*, Geological Society of America Southeastern Section Meeting field trip; Central and eastern Blue Ridge tectonics
- 2008 *Co-leader*, Geological Society of America Southeastern Section Meeting field trip; Inner Piedmont Geotraverse from the Brushy Mountains to Lincolnton, North Carolina: Architecture of the Cat Square and Tugaloo terranes
- 2008 *Session co-chair*, Geological Society of America Southeastern Section Meeting; Tectonics of the Blue Ridge and adjacent areas: A session honoring Professor Loren Raymond
- 2008 *Guest lecturer*, Kingston Public Library Truman Anderson Summer Science Project; Is there an earthquake hazard in East Tennessee?
- 2007 *Invited Seminar*, Dept. of Geography, University of Tennessee; Forensic Paleogeography: The Unraveling of Mountains – Specifically the Southern Appalachians – into Landmasses
- 2007 *Co-leader*; University of Tennessee 101 Geology Field trip
- 2007-2000 *Volunteer*; Frank H. McClung Museum; taught fossils, plate tectonics, and rock and mineral identification to elementary and middle school students
- 2006 *Co-leader*, Geological Society of America Southeastern Section Meeting field trip; Geotraverse: Geology of northeastern Tennessee and the Grandfather Mountain region
- 2006 *Co-leader*; University of Tennessee 101 Geology Field trip
- 2005 *Guidebook co-editor, and co-leader*, Carolina Geological Society annual field trip; Blue Ridge geology geotraverse east of the Great Smoky Mountains National Park, western North Carolina
- 2004 *Guidebook editor and field trip Assistant*, 17<sup>th</sup> International Basement Tectonics Conference field trip; Trans Appalachians Internides Geotraverse
- 2004 *Participant*; Research frontiers in Appalachian Geology and Tectonics: An EarthScope Perspective Meeting
- 2003 *Assistant*, Oak Ridge Institute of Continued Learning Field Trip; Northeastern Tennessee and northwestern North Carolina Geology: Billion year-old rocks, far-traveled slabs of crust, a mantle fragment, and the Grandfather Mountain window
- 2003 *Assistant/leader*, AGI Executive Committee meeting field trip; North Carolina Blue Ridge tectonics and scenery: Early Paleozoic ocean crust and mantle, rifted Laurentian margin, recycled pre-Appalachian crust and the 6,000+ feet spine of the eastern U.S.

2002 *Co-leader*, Carolina Geological Society annual field trip; Inner Piedmont geology in the South Mountains-Blue Ridge Foothills and the southwestern Brushy Mountains, central-western North Carolina

## **GRANTS AND AWARDS**

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George D. Swingle Memorial Award, Dept. of Geology, University of Tennessee (2007)  
Excellence in Graduate Course Work Award, Dept. of Earth & Planetary Sciences, University of Tennessee (2004)  
George D. Swingle Memorial Award, Dept. of Geology, University of Tennessee (2002)  
EDMAP grant for graduate research from the USGS National Cooperative Geologic Mapping Program (2001)  
EDMAP grant for undergraduate research from the USGS National Cooperative Geologic Mapping Program (2000)  
Distinguished Geology Major Award, Dept. of Geology, Appalachian State University (2000)  
Outstanding Field Geologist Award, Dept. of Geology, Appalachian State University (1999)

## **ACTIVITIES AND AFFILIATIONS**

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2000 – Present Geological Society of America  
2007 – 2010 Mineralogical Society of America  
2001 – 2003 Knoxville Rugby Club  
1996 – 1999 Intercollegiate football (Appalachian State University)