

SCOTT A. DRZYZGA, Ph.D., GISP & Remote Pilot

DEPARTMENT OF GEOGRAPHY-EARTH SCIENCE ■ SHIPPENSBURG UNIVERSITY
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EMPLOYMENT HISTORY

PROFESSOR	2016 - Present
ASSOCIATE PROFESSOR, TENURED	2009
ASSISTANT PROFESSOR	2004
Shippensburg University, Dept. Geography-Earth Science	Shippensburg, PA
ADJUNCT INSTRUCTOR	2003
Augustana College, Department of Geography	Rock Island, IL
GRADUATE TEACHING ASSOCIATE / INSTRUCTOR	1999 - 2003
MSU, College of Education	Traverse City, MI
GRADUATE TEACHING ASSOCIATE / INSTRUCTOR	2000 - 2001
MSU, Department of Geography	East Lansing, MI
GRADUATE RESEARCH ASSISTANT	1996 - 2002
MSU, Department of Geography	East Lansing, MI
GIS OPERATOR	1996
State of Michigan, Department of Natural Resources	Lansing, MI
GIS OPERATOR	1995
Tobin Data Graphics, LLC (now, P2 Energy Solutions)	Denver, CO
MANAGER -> MANAGING PARTNER	1992 - 1995
Tony Walker Chartered Stores	Buffalo and Albany, NY Novi and Sterling Heights, MI

OTHER POSITIONS HELD

GIScience Director, Center for Land Use & Sustainability @ Shippensburg University (2016 - present)
Vice President, PASSHE GIS Consortium & Affiliates (2020 - present)
President, PASSHE GIS Consortium & Affiliates (2012-2014)
Member, Pennsylvania State Geospatial Coordinating Board (2018 – present)
Member of three working groups: Elevation & LiDAR, Geodesy, and Policies & Procedures.

PROFESSIONAL CREDENTIALS

Geographic Information Systems Professional (Cert. no. 43047). 26 Dec. 2011 – 25 Dec. 2022.
GIS Certification Institute, Des Plaines, IL.

Remote Pilot Certificate, SUAS Rating (Cert. no. 3985502). 27 Mar. 2017 – 27 Jun. 2023.
U.S. Federal Aviation Administration, Washington, DC.

[Remote] Pilot Certificate, RPAS, VLOS (Cert. no. PC2200498319). 4 Jan. 2022 – 3 Jan. 2024.
Transport Canada Civil Aviation Services, Ottawa, ON.

EDUCATION

2007	Ph.D. in Geography/GIS	Michigan State University
2000	M.A. in Geography/GIS	Michigan State University
1992	B.A. in Geography	SUNY at Geneseo, New York

SELECTED PEER-REVIEWED PUBLICATIONS (* STUDENT)

- Woltemade, C; TW Hawkins, CA Jantz, and **SA Drzyzga** (2020) Impact of Changing Climate and Land Cover on Flood Magnitudes in the Delaware River Basin, USA. *Journal of the American Water Resources Association*. 56(3): 507-527.
- Johnson, LR; TLE Trammell, TJ Bishop, J Barth*, **SA Drzyzga**, and C Jantz (2020) Squeezed from All Sides: Urbanization, Invasive Species, and Climate Change Threaten Riparian Forest Buffers. *Sustainability* 12(4): 1448.
- Blewett, WL; DP Lusch, RJ Schaetzl, and **SA Drzyzga** (2018) A century of change in the methods, data, and approaches to mapping glacial deposits in Michigan, in Kehew, AE, and BB Curry (eds.) Quaternary Glaciation of the Great Lakes Region: Process, Landforms, Sediments, and Chronology, *Geological Society of America Special Paper 530*, pp. 39-67.
- Chester, JG*; WL Blewett, and **SA Drzyzga** (2018) Understanding South Mountain's "Big Flat" Landscape: Investigating the Nature of Broad Upland Summit Surfaces in South-Central Pennsylvania. *The Pennsylvania Geographer* 56(2): 42-61.
- Bhaskar, A; CA Jantz, C Welty, **SA Drzyzga**, and A Miller (2016) Coupling of the Water Cycle with Patterns of Urban Growth. *Journal of the American Water Resources Association* 52(6):1509-1523.
- Jantz, CA; **SA Drzyzga**, and MJ Maret* (2014) Calibrating and validating a simulation model to identify drivers of urban land cover change in the Baltimore, MD metropolitan region, *Land* 3(3): 1158-1179.
- Blewett, WL; **SA Drzyzga**, L Sherrod, and H Wang (2014) Geomorphic relations among Glacial Lake Algonquin and the Munising and Grand Marais moraines in Eastern Upper Michigan, USA. *Geomorphology* 219: 270-284.
- Drzyzga, SA**; A Shortridge, and RJ Schaetzl (2012) Mapping the Phases of Glacial Lake Algonquin in the upper Great Lakes region, Canada and USA, using a Geostatistical Isostatic Rebound Model. *Journal of Paleolimnology* 47(3):357-371.
- McConnell, WJ; JDA Millington, NJ Reo, M Alberti, H Asbjornsen, LA Baker, N Brozovic, LE Drinkwater, **SA Drzyzga**, J Fragoso, DS Holland, CA Jantz, TA Kohler, HDG Maschner, M Monticino, G Podesta, RG Pontius Jr., CL Redman, D Sailor, G Urquhart and J Liu (2011) Research on Coupled Human and Natural Systems (CHANS): Approach, Challenges and Strategies. *Bulletin of the Ecological Society of America* 92(2):218-228.
- Marr, PG; **SA Drzyzga**, GM Pomeroy, and J Biles (2008) *Economic and Transportation Impact of Warehousing on Rural Pennsylvania*. The Center for Rural Pennsylvania, 24 pp.
- Drzyzga, SA** (2007) Relict shoreline features at Cockburn Island, Ontario. *Journal of Paleolimnology* 37(3) 411-417.
- Walker, R; **SA Drzyzga**, Y Li, J Qi, and M Caldas (2004) A Behavioral Model of Landscape Change in the Amazon Basin. *Ecological Applications* 14(4) Supplement: 299-312.
- Drzyzga, SA**; A Shortridge, and RJ Schaetzl (2002) Revealing uncertainty in maps of Glacial Lake Algonquin. A chapter in Richardson D and van Oosterom P (Eds) *Advances in Spatial Data Handling*. Berlin, Springer-Verlag pp. 377-390.
- Schaetzl, RJ; **SA Drzyzga**, BN Weisenborn, KA Kincare, XD Lepczyk, KA Shein, CM Dowd, and JS Linker (2002) Correlation and mapping of Lake Algonquin shorelines in Michigan. *Annals of the Association of American Geographers* 92(3): 399-415.
- Drzyzga, SA** and DG Brown (2002) Spatial and temporal dynamics of ownership parcels and forest cover in three counties of Northern Lower Michigan, U.S.A., ca. 1970 to 1990. A chapter in Walsh SJ and Crews-Meyer KA (Eds) *Linking People, Place, and Policy: A GIScience Approach*. Boston, Kluwer Academic Publishers.
- Brown, DG; JD Duh, and **SA Drzyzga** (2000) Estimating error in an analysis of forest fragmentation change using North American Landscape Characterization (NALC) data. *Remote Sensing of Environment* 71(1): 106-117.
- Olson, JM; L Broomes, **SA Drzyzga**, JD Duh, LK Dygert, J Hallden, AK Lobben, AE Philpotts, ID Sims, and J Ware (1998) Teaching & Learning Focus Group Skills: A Classroom Example Evaluating Map Design. *Cartographic Perspectives* 31: 26-36.

EXTERNAL RESEARCH GRANTS & PROPOSALS

2018 Granted & Completed	Drzyzga SA (Science PI) <i>Conodoguinet Creek Watershed Association Project: Drone Video and ArcGIS Story Map</i> . Work proposal submitted to the Conodoguinet Creek Watershed Association. \$3000 budget for one year.
2016 Granted & Completed	Jantz CA (Science PI), SA Drzyzga , TW Hawkins, C Woltemade, S Goetz, and P Jantz. <i>How will forest ecosystems and hydrologic processes in the Delaware River Basin be affected by climate change and land cover change?</i> Research proposal submitted to the Delaware Watershed Research Fund. \$486,000 total budget over three years.
2014 Granted & Completed	Jantz CA (Science PI), SA Drzyzga , J O'Neil-Dunne, and P Claggett. <i>Land Cover Mapping, Modeling and Monitoring System for the Delaware River Basin</i> . Research proposal submitted to the William Penn Foundation. \$1 million total budget over two years.
2012 Rejected	Ball WP (Science PI), G Brush, B Hobbs, B Zaitchik, D Brady, K Sellner, CA Jantz, SA Drzyzga , M Paolisso, I Zaslavsky, W Kemp, M Li, L Murray, and D DiToro. <i>A Multidecadal Perspective Linking Changes in Climate, Extreme Weather, and Watershed Land Use to Water Quality in Chesapeake Bay</i> . Research proposal (#1243137) submitted to the National Science Foundation. \$5 million total budget. \$368,969 local budget over three years.
2011 Rejected	Ball WP (Science PI), G Brush, B Hobbs, B Zaitchik, D Brady, K Sellner, CA Jantz, SA Drzyzga , M Paolisso, I Zaslavsky, W Kemp, M Li, L Murray, and D DiToro. <i>A Long-Term Perspective Linking Changes in Climate, Extreme Weather, and Watershed Land Use to Water Quality in Chesapeake Bay</i> , Research proposal (#1203757) submitted to the National Science Foundation. \$5 million total budget. \$368,969 local budget over three years.
2010 Stage 2 (of 2) Rejected	Claggett P (Science PI), CA Jantz, D Donato, SA Drzyzga , F Ducca, F Smith and X Ye. <i>Detecting and assessing drivers of urban growth in the conterminous United States: a regional prototype</i> . Final proposal (#09-LCLUC09-2-0137) submitted to the NASA Research Opportunities in Space and Earth Sciences Land-Cover/Land-Use Change program. \$881,209 total budget.
2009 Stage 1 (of 2) Accepted	Claggett P (Science PI), D Donato, SA Drzyzga , CA Jantz and F Smith. <i>Detecting and assessing drivers of urban growth in the conterminous United States: a regional prototype</i> . Initial proposal (#09-LCLUC09-1-0098) submitted to the NASA Research Opportunities in Space and Earth Sciences Land-Cover/Land-Use Change program. No budget required at this stage.
2006 Granted & Completed	Jantz CA and SA Drzyzga . <i>Collaborative Research: Dynamic Coupling of the Water Cycle with Patterns of Urban Growth</i> . Submitted proposal (#0709537) to the National Science Foundation Dynamics of Coupled Natural-Human Systems program. Claire Welty was the Science PI at the University of Maryland Baltimore County. \$1.4 million total budget for five years.
2006 Granted & Completed	Marr PG, GM Pomeroy and SA Drzyzga . <i>Economic and Transportation Impacts of Warehousing on Rural Pennsylvania</i> . Joint-proposals submitted to the Center for Rural Pennsylvania and the Center for Land Use at Shippensburg University. \$61,605 (CRPa, \$40,625; CLU, \$20,980) budget for one year.

INTERNAL GRANTS RECEIVED

- 2019 **Drzyzga SA** and WL Blewett. Tech Fee Grant Renewal: *Short-Range Unmanned Aerial System (Drone)*. \$9,205. Project # R19-N13-39-01
- 2019 **Drzyzga SA**, M Applegarth, and WL Blewett. Tech Fee Grant Renewal: *HP DesignJet T7200 Printer*. \$15,290. Project #s R19-N11-22-01
- 2019 **Drzyzga SA**, TP Feeney, and WL Blewett. Tech Fee Grant Renewal: *Software - Surfer v15.x by Golden Software (x50)*. \$10,612. Project #R1915-N11-22-01
- 2019 **Drzyzga SA**, M Applegarth, and WL Blewett. Tech Fee Grant Renewal: *Ford Lab - 21 PCs and Projector*. \$31,325. Project #R191511-N07-04-01
- 2019 **Drzyzga SA**, M Applegarth, and WL Blewett. Tech Fee Grant Renewal: *GIS Lab - 21 PCs and Projector*. \$31,325. Project #R191511-N07-04-04
- 2013 **Drzyzga SA**, TW Hawkins, M Applegarth and WL Blewett. Tech Fee Grant: *Phase VI. Small Unmanned Aerial System*. \$4,800. Project # R13-NOV-05
- 2011 **Drzyzga SA**, M Applegarth and WL Blewett. Tech Fee Grant: *Phase IV. Augment the Department's Teaching Labs and GNSS resources*. \$115,205. Project #s R11-N07-0401, R11-NOV07-04-03 and R11-NOV07-04

PROFESSIONAL AFFILIATIONS

- Academy of Model Aeronautics (AMA)
Association of American Geographers (AAG)
Pennsylvania Geographical Society (PGS)

RECENT AWARDS

- 2018 *Award for Extraordinary Service* – Provost of Shippensburg University
- 2015 *Distinguished Teacher Award* – Pennsylvania Geographical Society.
- 2015 *Thomas P. Feeney Service Award* -- Department of Geography & Earth Science.
- 2013 *Award for Innovative Excellence in Teaching, Learning, and Technology* received at the 24th International Conference on College Teaching and Learning.
- 2012 *Teaching Innovations in Pedagogy and Scholarships (TIPS) Award* -- College of Arts & Sciences, Shippensburg University

INVITED PUBLIC PRESENTATIONS

- Jantz, CA and **Drzyzga SA** (2016) “Delaware River Basin Land Use Dynamics Project.” Invited presentation given at the *Common Waters Fund's, 2016 Science of Source Water Workshop* at the Academy of Natural Sciences of Drexel University, Philadelphia, PA.
- Drzyzga SA** (2014) “The New Era of American Dam Removal.” Invited presentation given at the *2014 Geography-Earth Science Seminar Series* at Shippensburg University, Shippensburg, PA.
- Drzyzga SA** and WL Blewett (2011) “Morainic features and ancient shorelines in Michigan's eastern UP: A Fall 2011 field report.” Invited presentation given at the *Quaternary Landscapes Research Group Meeting* at Michigan State University, East Lansing, MI.
- Drzyzga SA** (2009) “Market Segmentation – you are where you live.” Invited presentation given at the *6th Annual Criminal Justice Symposium* at Shippensburg University, Shippensburg, PA.

SELECTED CONFERENCE PRESENTATIONS (* STUDENT)

- Chester, Jonathon;* A. Yoder, P. Walsh, D. Miller, B. Holderman, **SA Drzyzga**, B. Naberzeny, N. Mechani, and J. Duncan (2019) Influence of Software Selection on 2D and 3D Elevation Correspondence using sUAS Structure-from-Motion and Multi-View-Stereo Photogrammetry. Poster presented at the *2019 Annual Meeting of the Association of American Geographers*, Washington, D.C.
- Drzyzga, SA**; B. Logan, and A. Viazanko (2018) “Rethinking Parking Requirements using Drone Imagery.” Paper and educational session at the *2018 Annual Conference of the American Planning Association, Pennsylvania Chapter* at Erie, PA. Paper was re-presented at the 2018 Central PA GIS Day event @ HACC, Harrisburg, PA.
- Barth, Joshua* and **SA Drzyzga** (2017) “Modeling the extent of future storm surge inundation under two sea level rise scenarios.” Poster presented at the *US Regional Association of the International Association for Landscape Ecology 2017 Annual Meeting* at Baltimore, MD.
- Jantz, CA; **SA Drzyzga**, P Claggett, AY Morillo, AF Price, J Barth*, DJ Minnick, and CM Lucas*. (2017) “DRB 2070: Lessons learned from basin-wide land use change forecasting.” Paper presented at the *US Regional Association of the International Association for Landscape Ecology 2017 Annual Meeting* at Baltimore, MD.
- Price, AF; CA Jantz, **SA Drzyzga**, AY Morillo, DJ Minnick, J Barth*, and CM Lucas*. (2017) “A community-driven approach to developing future land use scenarios at the river basin scale: An example from the Delaware River Basin.” Paper presented at the *US Regional Association of the International Association for Landscape Ecology 2017 Annual Meeting* at Baltimore, MD.
- Jantz, CA; **SA Drzyzga**, AY Morillo, AF Price, and J Barth* (2016) “Developing future land use scenarios for the Delaware River Basin.” Paper presented at the *US Regional Association of the International Association for Landscape Ecology 2016 Annual Meeting* at Asheville, NC.
- Drzyzga, SA** (2015, 2016) “Game of Drones: Mapping applications and legal issues associated with small unmanned aircraft.” The initial report was presented at the *2015 Pennsylvania Digital Government Summit* at Harrisburg, PA. An updated report was presented at the *2016 PA GIS Conference* at State College, PA.
- Drzyzga, SA**; WL Blewett, L Sherrod, and H Wang (2015) “Northern Michigan's Comingled Munising and Grand Marais Moraines and their Relations with Relict Shorelines of Glacial Lake Algonquin.” Poster presented at the *Geological Society of America 2015 Annual Meeting* at Baltimore, MD.
- Sherrod, LA; WL Blewett, **SA Drzyzga**, D Musa, K Schlosser, and JP Swiontek (2015) “Improving Glacial Geology Maps and Interpretations through Geophysics.” Paper presented at the *Geological Society of America 2015 Annual Meeting* at Baltimore, MD.
- Drzyzga, SA**; WL Blewett, L Sherrod, and H Wang (2015) “Correlation of Relict Shoreline Features along Northern Michigan's Munising and Grand Marais Moraines with Glacial Lake Algonquin Water Planes.” Poster presented at the *Association of American Geographers 2015 Annual Meeting* at Chicago, IL.
- Drzyzga, SA**; S Jackson, S Moyer, A Pal, and A Sarvis (2014) “Reconciling Business-Driven GIS Curriculum Improvements – A Panel Discussion.” Presenter and panel discussant at the *2014 Pennsylvania GIS Conference* at State College, PA.
- Stine, Paul* and **SA Drzyzga** (2013) “Evaluating Small Business Reach with ArcGIS, Python and the Google Maps API.” Paper presented at the *2013 Pennsylvania GIS Conference* at State College, PA.
- Drzyzga, SA** (2013) “Using Boots on the Ground & Data in the Cloud to Motivate Student Learning” Paper presented at the *24th Int'l Conference on College Teaching and Learning* at Ponte Vedra Beach, FL.
- Finn, Sam*; Will Davis* and **SA Drzyzga** (2013) “Shippensburg University Address Referencing System” Paper presented at the *Association of American Geographers 2013 Annual Meeting* at Los Angeles, CA.
- Hershey, Luke*, **SA Drzyzga**, S Cornell and T Feeney (2012) “Combustible Gas Concentrations in Soil at Natural Gas Extraction Sites in North Central PA: Before and After Drilling” Presented at the *Association of American Geographers, Middle States Division 2012 Meeting* at Shippensburg, PA.

OTHER CONFERENCES ATTENDED

Annual conference of the Middle States Commission on Higher Education (2015, 2014) @ Wash., DC.
Geo for Higher Education Summit (2013) Google Headquarters @ Mountain View, CA
GIS & Spatial Thinking in the Undergraduate Curriculum (2012) @ Bucknell U., Lewisburg, PA
LEAP States Summit (2016) @ Milwaukee, WI
Pennsylvania GIS Conference (2019, 2018, 2017, 2016, 2015, 2014 and 2013) @ State College, PA; (2012) @ Harrisburg, PA; and (2008 and 2007) @ Camp Hill, PA.

PRESS & PUBLISHED ACKNOWLEDGEMENTS

Interviewed for and quoted in:

Foster, Molly (2018) “Students map Hornbaker Wetland with drones” *TheSlateOnline.com*; last access on August 25, 2019 at <https://www.theslateonline.com/article/2018/04/students-map-hornbaker-wetland-with-drones>
Ledford, Heidi (2014) “US Drone Research Hits Regulatory Turbulence”, *Nature* 512(7514): 239-240; last accessed on August 27, 2015 at <http://www.nature.com/news/us-drone-research-hits-regulatory-turbulence-1.15727>
Meyers, Jessica, “Researchers Decry Limits on Drones: Say FAA’s Rules Inhibit Instruction, Gathering of Data”, *Boston Globe*, August 18, 2014; last accessed on August 27, 2015 at <http://www.bostonglobe.com/news/nation/2014/08/17/academic-researchers-say-faa-rules-are-forcing-them-ground-their-drones/8iNrbYG05AGevXl6b3XGiL/story.html>

For a map or series of maps produced for and published in:

Allen Dieterich-Ward. *From Mills to Malls: Industrial Heritage and Regional Identity in Metropolitan Pittsburgh*. In Wicke, C.; S. Berger, and J. Golombek. (2018) *Industrial Heritage and Regional Identities*. Routledge, USA.
Judith Ridner (2018) *The Scots-Irish of Early Pennsylvania*. The Pennsylvania Historical Association and Temple University Press, Philadelphia, PA.
Roger Simon (2017) *Philadelphia: A Brief History – Revised and Updated Edition*. The Pennsylvania Historical Association and Temple University Press, Philadelphia, PA.

For providing assistance with:

Blewett WL (2012) *Geology and landscape of Michigan’s Pictured Rocks National Lakeshore and vicinity*. Wayne State University Press, Detroit, MI.
Hawkins TW, KJ Kiphart and JS Smith (2010) Teaching Upper-Atmospheric Meteorology using Two- and Three-Dimensional Models: A Pilot Study. *Bulletin of the American Meteorological Society* May 2010: 549-556.
Blewett WL (2009) Understanding Ancient Shorelines in the National Parklands of the Great Lakes. *Pictured Rocks National Lakeshore Resource Report*, National Park Service, 16 pp.
Manuel J (2009) An Investigation of the Recently Drained Chambersburg Reservoir in South-Central Pennsylvania. *Middle States Geographer* 42: 1-8.
Klotz L and C Loeffler (2007) Morphological Analysis of Shooting Star Populations (*Dodecatheon*, *Primulaceae*) in Pennsylvania. *Castena*, September, 2007.
Karrow PF (2004) Algonquin-Nipissing Shorelines, North Bay, Ontario. *Géographie physique et Quaternaire* 58(2-3): 297-304.

RECENT SERVICE

To my profession and community:

Member, Pennsylvania State Geospatial Coordinating Board (representing the PASSHE GIS Consortium, 2018 – present)

Member of three GeoBoard Working Groups:

Elevation & Lidar, 2018 - P

Geodesy, 2019 - P

Policies & Procedures, 2018 - 2019

Vice President, PASSHE GIS Consortium & Affiliates (2020 - present)

President, PASSHE GIS Consortium & Affiliates (2012-2014)

Advisory Board member, GIS Program at Dover Area School District (2015- 2019)

Volunteer, Cumberland Conservation Collaborative (2016 – 2021)

To my university:

SU General Education Council

2017-2020: GEC representative to the UCC

2015-2017: GEC Faculty Co-chair

2013-2015: Chair, GEC Program Committee

2021-2022: Chair, GEC Budget Committee

Authored (2018) *General Education @ SHIP: A Handbook for Students and Advisors*.

Co-authored UCC significant program revision proposal #2017-084: *The General Education Program at Shippensburg University*. Approved by the UCC (5 Dec.), Forum (11 Dec.) and President (12 Dec. 2017). New program initiated Fall 2018.

Co-authored UCC new course proposal #2017-119: *UNIV101: Shippensburg University First Year Seminar*. Approved by the UCC (6 Mar.), Forum (Mar.), and President (29 Mar. 2018). New required course for incoming freshmen initiated in Fall 2018.

Co-authored UCC significant course revision proposal #2016-025: *General Education Special Topics course and policies (a.k.a., the '190' option)*. Approved by the UCC (4 Oct.), Forum (25 Oct.) and President (26 Oct. 2016). Policies took effect Spring 2017.

Center for Land Use & Sustainability

2015 – Present: GIScience Director

Oversee the technical resources used by the Center. Participate in externally funded research projects, which can include data preparation and analysis, grant writing, cartography, report writing, public speaking, running workshops, and overseeing student workers; the work varies by project.

Department of Geography-Earth Science

2019 – Present: Assessment committee member

Coordinate assessment of departmental program goals and student learning outcomes in each of our academic programs and in the general education programs we support.

2005 – Present: FARM committee member

Coordinate software deployment across teaching labs, classroom instruction stations, faculty offices, and graduate student office. Manage the SHIP-GEO ArcGIS Online account, all named users, and all their content. Author Tech Fee project renewal proposals as they come up.