AARON E. MAXWELL, PhD, GISP

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West Virginia University
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YouTube: https://www.youtube.com/channel/UCpSo0ZG5FtMyKwGnHaGnvrA
GitHub: https://github.com/maxwell-geospatial/

EDUCATION

PhD Geology
West Virginia University (Morgantown, WV)
MS Geology
West Virginia University (Morgantown, WV)
BS Chemistry, BS Biology, BS Environmental Science, Minor in Education
Alderson-Broaddus College (Philippi, WV)

Professional Certifications
Geographic Information Systems Professional (GISP) Certification
GIS Certification Institute (GISCI) (https://www.gisci.org/)

WORK HISTORY

Associate Professor of Geology and Geography (August 2024 – Present)
Assistant Professor of Geology and Geography (August 2019 – August 2024)
West Virginia University (Morgantown, WV)

- Conduct remote sensing and geospatial modeling research
- Contribute to undergraduate and graduate instruction in the Department of Geology and Geography
- Develop, maintain, and teach courses relating to geospatial science, GIS, remote sensing, and spatial analytics in both in-person and online formats
- Mentor graduate students for completion of thesis or dissertation research
- Develop and contribute to Online MS in GIS and Spatial Analysis (http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/gis_spatial_analysis/)
- Pursue research funding
- Director of *West Virginia View* consortium (https://www.wvview.org/)
- Faculty Director for *West Virginia GIS Technical Center* (http://www.wvgis.wvu.edu/)

Teaching Assistant Professor of Geography (August 2016 – August 2019)
West Virginia University (Morgantown, WV)

- Taught courses relating to geospatial science
- Advised undergraduates
- Created course content
- Pursued independent research

Adjunct Professor (Fall 2016)
Alderson Broaddus University (Philippi, WV)

Assistant Professor of Natural Science (August 2012 – May 2016)
Alderson Broaddus University (Philippi, WV)

- Taught undergraduate courses relating to GIS, geology, and physical science
- Mentored students for the completion of senior research projects
- Acted as academic advisor for undergraduate students
- Pursued independent research
- Planned and conducted field trips, including a field experience in Yellowstone National Park and the Black Hills of South Dakota
- Acted as faculty leader for the 2015 Semester in Europe Program based in Salzburg, Austria

Adjunct Professor in Department of Geology and Geography (January 2016 – August 2016)
West Virginia University (Morgantown, WV)

- Maintain research involvement at WVU while working at Alderson Broaddus University

Visiting Scientist (Summer 2013/Summer 2014)
Natural Resource Analysis Center (NRAC) at West Virginia University (WVU) (Morgantown, WV)

Remote Sensing Analyst (June 2010 – August 2012)
Natural Resource Analysis Center (NRAC) at West Virginia University (WVU) (Morgantown, WV)

WVU Geology Teaching Assistant (August 2008 – June 2010)
West Virginia University Department of Geology and Geography (Morgantown, WV)

TEACHING EXPERIENCE

West Virginia University

Geography 149/150: Digital Earth and Digital Earth Lab
Geography 350/550: Introduction to GIScience (Traditional and Online)
Geography 455/655: Introduction to Remote Sensing/Remote Sensing Principles
Geography 456: Remote Sensing Applications
Geography 457/657: Open-Source Spatial Analytics (Traditional and Online)
Geography 461/663: Web GIS
Geography 462: Digital Cartography
Geography 520: Methods in Open Science (Traditional and Online)

Alderson Broaddus University

Astronomy 190: Introduction to Astronomy
Biology 110: Introduction to Biology
Biology 380: Aquatic Entomology
Chemistry 303: Environmental and Toxicological Chemistry
Environmental Science 325: Sedimentation and Erosion
Environmental Science 335: Watershed Hydrology
Environmental Science 356: Introduction to GIS
Environmental Science 390: Field Ecology and Geology Experience in Yellowstone National Park
Environmental Science 465: Advanced GIS
Geology 190: Introduction to Geology
Geology 350: Hydrogeology
International Studies 390.01: The Physical Landscape of Europe
International Studies 390.02: Contemporary European Environmental Issues
Natural Science 185: General Science/Science and Society
Natural Science 190: Rocks, Stars, and Weather
Natural Science 210: Physical Geography (Online)
Natural Science 361: Research Methods I
Natural Science 462: Scientific Communication

PUBLICATIONS

*Indicates students

First-Author Peer Reviewed Publications

1. Maxwell, A.E., B.T. Wilson, J.J. Holgerson, and M.S. Bester, 2023. Comparing harmonic regression and GLAD phenology metrics for estimation of forest community types and aboveground live biomass within Forest Inventory and Analysis plots, *International Journal of Applied Earth Observation and Geoinformation*, 122: 103435. https://doi.org/10.1016/j.jag.2023.103435.
2. Maxwell, A.E., W.E. Odom, C.M. Shobe, D.H. Doctor, M.S. Bester, and T. Ore, **2023**. Exploring the influence of input feature space on CNN-based geomorphic feature extraction from digital terrain data, *Earth and Space Science*, 10: e2023EA002845. https://doi.org/10.1029/2023EA002845.
3. Maxwell, A.E., M.R. Gallagher, N. Minicuci, M.S. Bester, E.L. Loudermilk, S.M. Pokswinski, and N.S. Skowronski, **2023**. Impact of reference data sampling density for estimating plot-level average shrub heights using terrestrial laser scanning, *Fire*, 6(98): 6030098. https://doi.org/10.3390/fire6030098.
4. Maxwell, A.E., M.S. Bester, and C.A. Ramezan, **2022**. Enhancing reproducibility and replicability in remote sensing deep learning research and practice, *Remote Sensing*, 14(22): 5760. https://doi.org/10.3390/rs14225760.
5. Maxwell, A.E., and C.M. Shobe, **2022**. Land-surface parameters for spatial predictive mapping and modeling, *Earth-Science Reviews*, 226: 103944. https://doi.org/10.1016/j.earscirev.2022.103944.
6. Maxwell, A.E., M. Sharma, and K.A. Donaldson, **2021**. Explainable boosting machines for slope failure spatial predictive modeling, *Remote Sensing*, 13(24): 4991. https://doi.org/10.3390/rs13244991.
7. Maxwell, A.E., T.A. Warner, and L.A. Guillen, **2021**. Accuracy assessment in convolutional neural network-based deep learning remote sensing studies – Part 2: Recommendations and best practices, *Remote Sensing*, 13(13): 2591. https://doi.org/10.3390/rs13132591.

8. Maxwell, A.E., T.A. Warner, and L.A. Guillen, **2021**. Accuracy assessment in convolutional neural network-based deep learning remote sensing studies – Part 1: Literature review, *Remote Sensing* 13(13): 2450. https://doi.org/10.3390/rs13132450.
9. Maxwell, A.E., M. Sharma, J.S. Kite, K.A. Donaldson, S.M. Maynard*, and C.M. Malay*, **2021**. Assessing the generalization of machine learning-based slope failure prediction to new geographic extents, *ISPRS International Journal of Geo-Information*, 10(5): 293. https://doi.org/10.3390/ijgi10050293.
10. Maxwell, A.E., M.S. Bester*, L.A. Guillen*, C.A. Ramezan, D.J. Carpinello*, Y. Fan*, F.M. Hartley*, S.M. Maynard*, and J.L. Pyron*, **2020**. Semantic segmentation deep learning for extracting surface mine extents from historic topographic maps, *Remote Sensing*, 12(24): 4145. https://doi.org/10.3390/rs12244145.
11. Maxwell, A.E., and T.A. Warner, **2020**. Thematic classification accuracy assessment with inherently uncertain boundaries: An argument for center-weighted accuracy assessment metrics, *Remote Sensing*, 12(12): 1905. https://doi.org/10.3390/rs12121905.
12. Maxwell, A.E., P. Pourmohammadi, and J. Poyner*, **2020**. Mapping the topographic features of mining-related valley fills using mask R-CNN deep learning and digital elevation data, *Remote Sensing*, 12(3): 547. https://doi.org/10.3390/rs12030547.
13. Maxwell, A.E., M. Sharma, J.S. Kite, K.A. Donaldson, J.A. Thompson, M.L. Bell*, and S.M. Maynard*, **2020**. Slope failure prediction using random forest machine learning and LiDAR in an eroded folded mountain belt, *Remote Sensing*, 12(3): 486. https://doi.org/10.3390/rs12030486.
14. Maxwell, A.E., M.P. Strager, T.A. Warner, C.A. Ramezan, A.N. Morgan*, and C.E. Pauley*, **2019**. Large-area, high spatial resolution land cover mapping using random forests, GEOBIA, and NAIP orthophotography: findings and recommendations, *Remote Sensing*, 11(12): 1409. https://doi.org/10.3390/rs11121409.
15. Maxwell, A.E., and T.A. Warner, **2019**. Is high spatial resolution DEM data necessary for mapping palustrine wetlands?, *International Journal of Remote Sensing*, 40(1): 118-137. https://doi.org/10.1080/01431161.2018.1506184.
16. Maxwell, A.E., T.A. Warner, and F. Fang*, **2018**. Implementation of machine learning classification in remote sensing: an applied review, *International Journal of Remote Sensing*, 39(9): 2784-2817. https://doi.org/10.1080/ 01431161.2018. 1433343.
17. Maxwell, A.E., T.A. Warner, B.C. Vanderbilt, and C.A. Ramezan*, **2017**. Land cover classification and feature extraction from National Agriculture Imagery Program (NAIP) orthoimagery: A review, *Photogrammetric Engineering & Remote Sensing*, 83(11): 737-747. https://doi.org/10.14358/PERS.83.10.737.
18. Maxwell, A.E., T.A. Warner, and M.P. Strager, **2016**. Predicting palustrine wetland probability using random forest machine learning and digital elevation data-derived terrain variables, *Photogrammetric Engineering & Remote Sensing*, 82(6): 437-447. https://doi.org/10.1016/S0099-1112(16)82038-8.
19. Maxwell, A.E., and T.A. Warner, **2015**. Differentiating mine-reclaimed grasslands from spectrally similar land cover using terrain variables and object-based machine learning classification, *International Journal of Remote Sensing*, 36(17): 4384-4410. https://doi.org/10.1080/01431161.2015.1083632.
20. Maxwell, A.E., T.A. Warner, M.P. Strager, J.F. Conley, and A.L. Sharp*, **2015**. Assessing machine learning algorithms and image- and LiDAR-derived variables for GEOBIA classification of mining and mine reclamation, *International Journal of Remote Sensing*, 36(4): 954-978. https://doi.org/10.1080/01431161. 2014.1001086.
21. Maxwell, A.E., M.P. Strager, T.A. Warner, N.P. Zégre, and C.B. Yuill, **2014**. Comparison of NAIP orthophotography and RapidEye satellite imagery for mapping of mining and mine reclamation, *GIScience & Remote Sensing*, 51(3): 301-320. https://doi.org/10.1080/15481603.2014.912874.

22. Maxwell, A.E., T.A. Warner, M.P. Strager, and M. Pal, **2014**. Combining RapidEye satellite imagery and LiDAR for mapping of mining and mine reclamation, *Photogrammetric Engineering & Remote Sensing*, 80(2): 179-189. https://doi. org/10.14358/PERS.80.2.179-189.
23. Maxwell, A.E., and M.P. Strager, **2013**. Assessing landform alterations induced by mountaintop mining, *Natural Science*, 5(2A): 52A034. 10.4236/ns.2013.52A034.
24. Maxwell, A.E., M.P. Strager, C.B. Yuill, and J.T. Petty, **2012**. Modeling critical forest habitat in the Southern Coal Fields of West Virginia, *International Journal of Ecology*, Volume 2012, Article ID 182683, 10 pages.

Peer Reviewed Publications from Lab Group

25. Farhadpour, S.*, T.A. Warner, and A.E. Maxwell, 2024. Selecting and interpreting Multiclass loss and accuracy assessment metrics for classifications with class imbalance: guidance and best practices, *Remote Sensing*, 16(3): 533. https://doi.org/10.3390/rs16030533.
26. Yadav, S.K.*, and A.E. Maxwell, **2023**. Exploring NDVI change patterns across the Tibetan Plateau at the hillslope scale using geomorphons, *International Journal of Remote Sensing*, 44(23): 7543-7569. https://doi.org/10.1080/01431161.2023.2287561.
27. Hartley, F.M.*, A.E. Maxwell, R.E. Landenberger, and Z.J. Bortlot, **2022**. Forest type differentiation using GLAD phenology metrics, terrain variables, and machine learning, *Geographies*, 2(3): 491-515. https://doi.org/10.3390/geographies2030030.

Other Peer Reviewed Publications

*Indicates students

28. Ramezan, C.A., A.E. Maxwell, and J.T. Meadows, **2024**. An analysis of qualifications and requirements for geographic information systems (GIS) positions in the United States, *Transactions in GIS*. https://doi.org/10.1111/tgis.13176.
29. Bower, S.J.*, C.M. Shobe, A.E. Maxwell, and B. Campforts, **2024**. The uncertain future of mountaintop-removal-mined landscapes 2: Modeling the influence of topography and vegetation, *Geomorphology*, 446: 108985. https://doi.org/10.1016/j.geomorph.2023.108985.
30. Shobe, C.M., S.J. Bower*, A.E. Maxwell, R.C. Glade, and N.M. Samassi, **2024**. The uncertain future of mountaintop-removal-mined landscapes 1: How mining changes erosion processes and variables, *Geomorphology* 445(15): 108984. https://doi.org/10.1016/j.geomorph.2023.108984.
31. Bester, M.S., A.E. Maxwell, I. Nealey*, M.R. Gallagher, N.S. Skowronski, and B.E. McNeil, **2023**. Synthetic forest stands and point clouds for model selection and feature space comparison, *Remote Sensing*, 15(18): 4407. https://doi.org/10.3390/rs15184407.
32. Loudermilk, E.L., S. Pokswinski, C.M. Hawley, A. Maxwell, M.R. Gallagher, N.S. Skowronski, A.T. Hudak, C. Hoffman, and J.K. Hiers, **2023**. Terrestrial laser scan metrics predict surface vegetation biomass and consumption in a frequently burned Southeastern U.S. ecosystem, *Fire*, 6(4): 151. https://doi.org/10.3390/fire6040151.
33. Yesenchak, R.*, S. Sharma, and A.E. Maxwell, **2022**. Modes of occurrence, elemental relationships, and economic viability of rare earth elements in West Virginia coals: A statistical approach, *Minerals*, 12(8): 1060. https://doi.org/10.3390/min12081060.
34. Warner, T.A. T.A. Miller, I.P. La Puma, L.A. Nolan*, N.S. Skowronski, and A.E. Maxwell, **2022**. Exploring golden eagle habitat preference using lidar-based canopy bulk density, *Remote Sensing Letters*, 13(6): 556-567. https://doi.org/10.1080/2150704X.2022.2055985.

35. Gallagher, M.R., A.E. Maxwell, L.A. Guillen, A. Everland, E.L. Loudermilk, and N.S. Skowronski, **2021**. Estimation of plot-level burn severity using terrestrial laser scanning, *Remote Sensing*, 13(20): 4168. https://doi.org/10.3390/rs13204168.
36. Cribari, V.*, M.P. Strager, A.E. Maxwell, and C. Yuill, **2021**. Landscape changes in the southern coalfields of West Virginia: Multi-level intensity analysis and surface mining transitions in the headwaters of the Coal River from 1976 to 2016, *Land*, 10(7): 748. https://doi.org/10.3390/land10070748.
37. Higgins, A.K.* and A.E. Maxwell, **2021**. Universal design for learning in the geosciences for access and equity in our classrooms, *The Journal of Applied Instructional Design*, 10(1).
38. Ramezan, C.A., T.A. Warner, A.E. Maxwell, and B.S. Price, **2021**. Effects of training set size on supervised machine-learning land-cover classification of large-area high-resolution remotely sensed data, *Remote Sensing*, 13(3): 368. https://doi.org/10.3390/rs13030368.
39. Fang, F.*, B.E. McNeil, T.A. Warner, A.E. Maxwell, G.A. Dahle, E. Eutsler, and J. Li, **2020**. Discriminating tree species at different taxonomic levels using multi-temporal WorldView-3 imagery in Washington D.C., USA, *Remote Sensing of Environment*, 246: 111811. https://doi.org/10.1016/j.rse.2020.111811.
40. Ramezan, C.A.*, T.A. Warner, and A.E. Maxwell, **2019**. Evaluation of sampling and cross-validation tuning strategies for regional-scale machine learning classification, *Remote Sensing*, 11(2): 185. https://doi.org/10.3390/ rs11020185.
41. Fang, F.*, McNeil, B.E., Warner, T.A., and A.E. Maxwell, **2018**. Combining high spatial resolution multi-temporal satellite data with leaf-on LiDAR to enhance tree species discrimination at the crown-level, *International Journal of Remote Sensing*, 39(23): 9054-9072. https://doi.org/10.1080/01431161.2018.1504343.
42. Liebermann, H.*, J. Schuler, M.P. Strager, and A. Maxwell, **2018**. A work flow and evaluation of using unmanned aerial systems for deriving forest stand characteristics in mixed hardwoods of West Virginia, *Geospatial Applications in Natural Resources*, 2(1): 23-53.
43. Strager, M.S., M. Thomas-Van Gundy, A.E. Maxwell, **2016**. Predicting post-fire change in the Central Appalachians from remotely-sensed data, *Geospatial Applications in Natural Resources*, 1(2): 1-17.
44. Merriam, E.R.*, J.T. Petty, M.P. Strager, A.E. Maxwell, and P.F. Ziemkiewicz, **2015**. Complex contaminant mixtures in multi-stressor Appalachian riverscapes, *Environmental Toxicology and Chemistry*, 34(11): 2603-2610.
45. Merriam, E.R.*, J.T. Petty, M.P. Strager, A.E. Maxwell, and P.F. Ziemkiewicz, **2015**. Landscape-based cumulative effects models for predicting stream response to mountaintop mining in multi-stressor Appalachian watersheds, *Freshwater Science*, 34(3): 1006-1019.
46. Strager, M.P., J.M. Strager, J.S. Evans, J.K. Dunscomb, B.J. Kreps, and A.E. Maxwell, **2015**. Combining a spatial model and demand forecasts to map future surface coal mining in Appalachia, *PLoS ONE*, 10(6): e0128813. 10.1371/journal.pone.0128813.
47. Zégre, N., A. Miller*, A. Maxwell, and S. Lamont, **2014**. Multi-scale analysis of hydrology in a mountaintop mine-impacted watershed, *Journal of the American Water* Resources *Association*, doi: 10.1111/jawr.12184.
48. Merriam, E.R.*, J.T. Petty, M.P. Strager, A.E. Maxwell, and P.F. Ziemkiewicz, **2013**. Scenario analysis predicts context-dependent stream response to landuse change in a heavily mined central Appalachian watershed, *Freshwater Science*, 32(4): 1246-1259.
49. Pal, M., A.E. Maxwell, and T.A. Warner, **2013**. Kernel-based extreme learning machine for remote-sensing image classification, *Remote Sensing Letters*, 4(9): 853-862. https://doi.org/10.1080/2150704X.2013.805279.
50. Zégre, N., A. Maxwell, and S. Lamont, **2013**. Characterizing streamflow response of a mountaintop-mined watershed to changing land use, *Applied Geography*, 39: 5-15.

Datasets and Code

1. Maxwell, A.E., S. Farhadpour, and M Ali., **2024**. mineBenchDL: A geomorphology deep learning dataset of historic surface coal mine benches in West Virginia, USA. https://doi.org/10.6084/m9.figshare.26042920.v1
2. Maxwell, A.E., **2024**. topoDL: A deep learning semantic segmentation dataset for the extraction of surface mine extents from historic USGS topographic maps. https://doi.org/10.6084/m9.figshare.25096640.v1.
3. Maxwell, A.E., **2024**. wvSlpFailureML: A dataset for slope failure occurrence predictive modeling using machine learning and LiDAR -derived topographic variables for the entirety of the state of West Virginia, USA. https://doi.org/10.6084/m9.figshare.25096601.v1.
4. Maxwell, AE., **2023**. surficialDL: A geomorphology deep learning dataset of alluvium and thick glacial till derived from 1:24,000 scale surficial geology data for the western portion of Massachusetts, USA. figshare. Dataset. https://doi.org/10.6084/m9.figshare.22320481.v1.
5. Maxwell, A.E., **2023**. terraceDL: A geomorphology deep learning dataset of agricultural terraces in Iowa, USA. figshare. Dataset. https://doi.org/10.6084/m9.figshare.22320373.v2.
6. Maxwell, A.E., **2023**. vfillDL: A geomorphology deep learning dataset of valley fill faces resulting from mountaintop removal coal mining (southern West Virginia, eastern Kentucky, and southwestern Virginia, USA). figshare. https://doi.org/10.6084/m9.figshare.22318522.v2.

Conference Oral Presentations/Paper in Proceedings/Workshops

1. Maxwell, A.E., **2023**. QGIS Workshop. *Utah Geographic Information Council Conference 2023*, Midway, Utah, May 8-9, 2023.
2. Odom, W., A.E. Maxwell, D. Doctor, and C. Shobe, **2023**. Feature space considerations for geomorphic deep learning using digital terrain variables, *Geological Society of America Southeastern and Northeastern Section Meeting*, March 17, 2023.
3. Maxwell, A.E., **2023**. Raster analysis with terra Workshop, *AmericaView Annual Meeting*, Lafayette, Louisiana, March 15, 2022.
4. Maxwell, A.E. Geospatial Deep Learning: Current Practices and Advancements in Context. *WVU Geology and Geography Colloquium*, September 16, **2022**.
5. Maxwell, A.E. Forest type differentiation using machine learning, phenology metrics, and land surface parameters. *PECORA 22*, October 24 – 27, **2022**.
6. Maxwell, A.E. Remote sensing for forest type differentiation and fuel load estimation. *Digital Forestry Seminar*, Department of Forestry and Natural Resources Purdue University, September 22, **2022**.
7. Maxwell, A.E. LiDAR Workshop. *WV GIS Conference*. May 26, **2022**.
8. Maxwell, A.E. Introducing WVU's New Online MS in GIS and Spatial Analysis. *WV GIS Conference*. May 25, **2022**.
9. Maxwell, A.E. Best practices for accuracy assessment of thematic products generated using CNN-based deep learning. *ASPRS 2022 Virtual Conference*. March 21-25, **2022**.
10. Maxwell, A.E. Teaching coding to geospatial students. *ASPRS 2022 Virtual Conference*. March 21-25, **2022**.
11. Maxwell, A.E. Transition to ArcGIS Pro Workshop. *WV GIS Conference*. June 29, **2021**.
12. Maxwell, A.E., and F.M. Hartley. West Virginia View Free Educational Resources. *WV GIS Conference*. June 29, **2021**.

13. Maxwell, A.E., Donaldson, K.A., and M. Sharma. Slope failure occurrence probabilistic model for West Virginia using machine learning and LiDAR. *WV GIS Conference*. June 29, **2021**.
14. Maxwell, A.E., **2021**. Machine learning and deep learning applied to digital terrain data: opportunities and challenges, *ASPRS 2021 Annual Conference*. March 29-April 2.
15. Maxwell, A.E., **2021**. AmericaView and education: empowering remote sensing education, *ASPRS 2021 Annual Conference*. March 29-April 2.
16. Maxwell, A.E., **2019**. West Virginia Statewide Land Cover Classification from NAIP Orthophotography: Findings and Recommendations, PECORA 21, 6 October – 11 October, Baltimore, Maryland.
17. Maxwell, A.E., **2018**. Producing an ArcGIS Pro Lab Manual for Undergraduates: Lessons, Learned, ESRI 2018 Education Summit, 7 July – 10 July, San Diego California
18. Maxwell, A.E., **2018**. Using the Free and Open-Source Software R as a GIS, 2018 WV GIS Conference, 11 June – 14 June, Charleston, West Virginia.
19. Maxwell, A.E., and T.A. Warner, **2017**. NAIP Orthophotography for Land Cover Mapping Tasks: A Review with Recommendations, PECORA 20, 14 Nov. – 16 Nov., Sioux Falls, South Dakota.
20. Maxwell, A.E., **2016**. Teaching, hands-on learning, and research: why make distinctions?, *2016 Appalachian College Association Annual Summit*, 29 Sept. – 1 Oct., Kingsport, Tennessee.
21. Maxwell, A.E., T.A. Warner, and M.P. Strager, **2016**. Predicting palustrine wetland probability using random forest machine learning and digital elevation data-derived terrain variables, *2016 West Virginia GIS Conference*, 3-6 May, Morgantown, West Virginia.
22. Maxwell, A.E., **2016**. Water scarcity: A discussion of California's water issues and what we can learn from them, *Dr. Unger Lecture Series (Alderson Broaddus University)*, 1 April, Philippi, WV.
23. Maxwell, A.E., **2014**. The Anthropocene: Is man writing the current chapter of geologic time?. *Dr. Unger Lecture Series (Alderson Broaddus University)*, 26 September, Philippi, WV. (As Presenter)
24. Maxwell, A., M. Strager, T. Warner, C. Yuill, and N. Zégre, **2014**. Mapping of mining and mine reclamation: A comparison of NAIP orthophotography and RapidEye satellite imagery, *ASPRS 2014 Annual Conference*, 23-28 March, Louisville, KY.
25. Maxwell, A.E., **2013**. Imagery as a scientific tool. *Dr. Unger Lecture Series (Alderson Broaddus University)*, 27 September, Philippi, WV.
26. Maxwell, A.E., **2014**. Researchers develop an effective approach to forest cover analysis, *The Forestry Source*, 19(2): 13. (Reprint of previous trade publication)
27. Strager, M.P., A.E. Maxwell, J.T. Petty, and P. Ziemkiewicz, **2013**. A value of information study examining the effectiveness of spatial datasets for modeling landscape to water quality relationships, *Symposium: Environmental Considerations in Energy Production*, 14-18 April, Charleston, WV.
28. Maxwell, A.E., **2012**. Researchers develop an effective approach to forest cover analysis, *ESRI News for Forestry*, 2013(Spring): 6-7. (Trade Publication)
29. Maxwell, A.E., M. Strager, C. Yuill, E. Austin, and W. Kordek, **2012**. Creation of a high resolution land cover and forest cover for West Virginia relative to 2011 NAIP orthophotography, *2012 West Virginia GIS Conference*, 8-11 May, Morgantown, West Virginia.
30. Maxwell, A.E., E. Austin*, M. Strager, C. Yuill, and A. Riley, **2012**. Landform alterations induced by mountaintop mining: A case study in the Coal River Watershed, *2012 West Virginia GIS Conference*, 8-11 May, Morgantown, West Virginia.
31. Maxwell, A.E., A. Riley, and P. Kinder, **2012**. Comparison of LiDAR-derived data and high resolution true color imagery for extraction urban forest cover, *18th Central Hardwood Forest Conference*, 26-28 March, Morgantown, West Virginia.
32. Maxwell, A.E., M.P. Strager, C. Yuill, J.T. Petty, E. Merriam*, and C. Mazzarella, **2011**. Disturbance mapping and landscape modeling of mountaintop mining using ArcGIS, *Proceedings of the International*

ESRI User Conference Proceedings, 11-15 July, San Diego, California (Environmental Systems Research Institute, Redlands, California), unpaginated CD-ROM.

33. Maxwell, A.E., and J.S. Kite., **2010**. Analysis of LiDAR Point Data and Derived Elevation Models for Mapping and Characterizing Bouldery and Blocky

Conference Posters

1. "Forest Type Mapping in the Monongahela National Forest" presented at the *2016 West Virginia GIS Conference*.
2. "High Spatial Resolution Land Cover Classification in Preston County, WV Using GEOBIA, Machine Learning, NAIP Orthophotography, LiDAR, and Ancillary GIS Data" presented at the *2016 West Virginia GIS Conference*.
3. "Enhanced Wetland Detection using Feature Extraction, Topographic Derivatives, and Maxent Probabilistic Modeling" presented at the *Society for Ecological Restoration (SER) Mid-Atlantic Annual Conference 2011.*

PROFESSIONAL SKILLS

- Data analysis and spatial analytics using R and Python
- Spatial analysis using ArcGIS Desktop, ArcGIS Pro, QGIS, R, and Python
- Digital cartographic design using ArcGIS Desktop, ArcGIS Pro, Adobe Photoshop, and Adobe Illustrator
- Remote sensing analysis and image classification using Erdas Imagine, ArcGIS Desktop, ArcGIS Pro, and R
- Object-based image analysis using eCognition
- Spatial predictive modeling with machine learning and deep learning using Python, R, and PyTorch
- Client-side web map development using ArcGIS Online, HTML, CSS, Bootstrap, JavaScript, jQuery, ArcGIS API for JavaScript, Leaflet JavaScript API, and VS Code
- Processing and analysis of multispectral imagery and LiDAR data
- Analysis and processing of digital terrain data and applications of geomorphometry

PROFESSIONAL AFFILIATIONS

- American Society of Photogrammetry and Remote Sensing (ASPRS)
- West Virginia Association of Geospatial Professionals (WVAGP)

GRANTS AWARDED

Title	Funder	PI	Period	Amount
WV Statewide Mapping of Surficial Karst Features	USDA NRCS	Maxwell	October 1, 2023 to Sept. 30 2024	$109,939
Expanding the Use of Single-Scan Laser Scanning into Silvicultural Mensuration	USDA Forest Service	Maxwell	August 2023 to June 2026	$77,315
CIVIC-FA Track B: Creating the West Virginia Flood Resilience Framework for comprehensive disaster response and long-term community recovery	NSF	Jamie Shinn	October 2023 to October 2024	$787,594
TLS Fuel Load Project	Tall Timbers Research Station	Maxwell	November 2022 to November 2023	$46,200
CIVIC-PG Track B: Creating the West Virginia Flood Resilience Framework for Comprehensive Disaster Response and Long-Term Community Recovery	NSF	Jamie Shinn	October 2022 to March 2023	$49,812
NSF Convergence Accelerator – Track D: Artificial Intelligence and Community Driven Wildland Fire Innovation via a WIFIRE Commons Infrastructure for Data and Model Sharing	NSF	Ilkay Altintas	Sept. 2021 to Sept. 2023	$228,652
CAREER: Mapping Anthropocene Geomorphology with Deep Learning, Big Data Spatial Analytics, and LiDAR	NSF/EPSCoR	Maxwell	Sept. 2021 to Sept. 2026	$636,785

Cooperative Agreement: Using 3D Terrestrial Laser Scanning Data and Machine Learning to Estimate Forest Fire Fuel Loads.	USDA Forest Service	Maxwell	Sept. 2020 to Sept. 2022	$64,000
StateView Program Development and Operations for the State of West Virginia	USGS/ AmericaView	Maxwell	Sept. 2018 to Sept. 2024	$141,00
			Total	$2,000,297