

RAEHEL A. PORTELLI

previous names: Bianchetti & White

<https://orcid.org/0000-0001-9754-7376>

Department of Geography, Environment, and Spatial Sciences | Michigan State University
673 Auditorium Road, East Lansing, MI 48823
raechel@msu.edu

PROFESSIONAL EXPERIENCE

- 2014- Assistant Professor
Dept. of Geography, Environment, and Spatial Sciences, MSU
- 2014- Adjunct Faculty
Center for Global Change and Earth Observations
- 2014- Affiliated Faculty
Environmental Science and Policy Program, MSU
- 2014 Instructor
Dutton Institute, Pennsylvania State University
- 2012-2014 Instructor
Geography Department, Pennsylvania State University

EDUCATION

- 2014 PhD, Geography, Pennsylvania State University,
Dissertation title: *Looking back to inform the future: The role of cognition in forest disturbance characterization from remote sensing imagery*
- 2010 M.S. Geography, University of Idaho,
Thesis Title: *Classification of Mixed-Conifer Forest Stands using SPOT-5 Imagery*
- 2009 B.S. Physical Geography (Geology minor), University of Idaho
- 2009 B. Env. Environmental Science (Geology and Statistics tracts), U of I
- 2010 Certificate in Statistical Science, University of Idaho
- 2008 GIS Certificate, University of Idaho

PROFESSIONAL CERTIFICATION

- 2020 FAA Part 107 sUAS license

RESEARCH ACTIVITY

EDITED BOOKS

- 2018 **White, R. A.**, Coltekin, A., Hoffman, R. eds. *Remote Sensing and Cognition: Human Factors of Image Interpretation*. CRC Press, Boca Raton, FL.

PAPERS IN REVIEW

- (in review) Portelli, R.A. and Pope, P. Remote Sensing and Human Factors Research: A Review, *Photogrammetry and Remote Sensing*
- (in review) Grady, S., Kreuze, Qiong, Portelli, Zeilinska. COVID-19 in Nursing Homes: Geographic Diffusion and Social Vulnerability in the United States. *Social Science and Medicine*

REFEREED PUBLICATIONS [SCIMAGO Rank / Impact Factor, Student Author]

- 2021 Camacho, K., **Portelli, R.A.**, Shortridge, A., Takisha, B. Sentiment Mapping: Point Pattern Analysis of Sentiment Classified Twitter Data. *Cartography and Geographic Information Science*. [Q1 / 0.81]
- 2020 **Portelli, R.A.** Don't throw the baby out with the bathwater: Reappreciating the dynamic relationship between humans, machines, and landscape images. *Landscape Ecology*, 35(4), 815-822 [Q1/4.349]
- 2019 **White, R.A.**, Piraino, K., Shortridge, A., Arbogast, A. Measurement of Forest Change in Critical Dune Sites along the Eastern Shores of Lake Michigan from 1938 to 2014 with Object-Based Image Analysis. *Journal of Coastal Research*. [Q2 / 0.915]
- 2019 **White, R.A.** Human expertise in the interpretation of remote sensing data: A cognitive task analysis of forest disturbance attribution, *Int. Jour. Applied Earth Observation* 24: 37-44 [Q1/1.62]
- 2018 **White, R.A.**, Bomber, M., Hupy, J., Shortridge, A. UAS-GEOBIA Approach to Sapling Identification in Jack Pine Stands after Fire. *Drones* 2(4). [new journal]
- 2017 **Bianchetti, R.A.** Raisz's Physiographic Method of Landform Mapping. *Progress in Physical Geography*, 41 (6), p 1-8. [Q1 / 3.375]
- 2017 Ojaghi, S., Ahmadi, F.F., Edabi, H., **Bianchetti, R.A.** Wetland cover change detection using multi-temporal remotely sensed data (A case study: Ghara Gheshlagh wetland in the southern part of Lake Urmia). *Arabian Journal of Geoscience* 10: 470. [Q3 / 0.995]
- 2017 Yang, A., Grady, S., **White, R.A.** & Messina, J. Cost-benefit Analysis of Tsetse Control in Tanzania. *Applied Geography* (3)2: 182-195 [Q1 / 2.687]
- 2016 **Bianchetti, R.A.** Describing the problem-solving strategies of expert image interpreters using graphical knowledge elicitation methods. *GIS and Remote Sensing*, p 1-17. [Q1 / 3.049]
- 2016 Singh, K.K., **Bianchetti, R.A.**, Chen, G., Meentemeyer, R. Do dominant land-cover types and pattern impact urban forest biomass? *Urban Ecosystems*, p 1-11. [Q1 / 1.90]
- 2015 **Bianchetti, R.A.**, MacEachren, A.M. Cognitive themes emerging from air photo interpretation texts published to 1960. *ISPRS Journal of GeoInformation*,

4(2), 551-571. [Q2 / 1.52]

- 2013 Robinson, A.C., Pezanowski, S., Troedson, S., **Bianchetti, R.A.**, Blanford, J., Stevens, J., Guidero, E., Roth, R.E., MacEachren, A.M. SymbolStore.org: A Web-based Platform for Sharing Map Symbols. *Cartography and Geographic Information Science*, 40(5): 415-426. [Q1 / 1.35]
- 2012 **Bianchetti, R. A.**, Wallgrün, J. O., Yang, J., Blanford, J. I., Robinson, A. C., & Klippel, A. Free classification of Canadian and American emergency management map symbol standards. *The Cartographic Journal*, 49 (4): 350-360. [Q2 / 0.83]

BOOK CHAPTERS

- (2025) **White, R.A.** South Asian Military Mapping. In: *History of Cartography: Cartography in the 19th Century*, Vol. 5. R. Kain (ed.) University of Chicago Press: Chicago, IL
- 2018 **White, R.A.** Intersectional Perspectives on the Landscape Concept: Art, Cognition, and Military Perspectives. White, R. A., Coltekin, A., Hoffman, R. eds. *Human Factors of Remote Sensing Imagery*. CRC Press, Boca Raton, FL

REFEREED CONFERENCE PAPERS Student Author

- 2016 **Bianchetti, R.A.** A Cognitive Approach to teach a graduate-level GEOBIA course. International Society of Photogrammetry and Remote Sensing. *Annals Photogrammetry & Remote Sens. Spatial Inf. Sci.*, III-6, 3–7
- 2015 **Bianchetti, R.A.** Representation-based Knowledge Elicitation: Describing the image interpretation process of experts. *Proceedings of the 27th International Cartographic Conference*
- 2013 **Bianchetti, R.A.** Considering Visual Perception and Cognition in the Analysis of Remotely Sensed Images. *Conference on Spatial Information Theory, Doctoral Colloquium*. Rio de Janeiro, Brazil: August 27
- 2013 Robinson, A.C., Pezanowski, S., Stevens, J., Mullins, R., Blanford, J., **Bianchetti, R.A.** and MacEachren, A.M. Sharing and Discovering Map Symbols with SymbolStore.org. *Proceedings of the 26th International Cartographic Conference*. Dresden, Germany: August 26.
- 2011 **Bianchetti, R.A.** Supporting the Image Classification Process with an Improved Understanding of the Human Role in Imagery Analysis. *Conference on Spatial Information Theory, Doctoral Colloquium*

BOOK REVIEWS

- 2014 **Bianchetti, R.A.** Review of Basic Geological Mapping. *Cartographic Perspectives* 75: 59-60

EXTERNAL GRANTS AWARDED [\$3,061,935]

- 2021-2024 White, P. (PI), Dorsey (Co-PI), Reichsman (Co-PI), Stroupe (Co-PI), **Portelli, R.A.** (Co-I, \$99,833 portion). (\$2,980,040) *NSF K-12 Discovery Program*. MothEd: Authentic Science for Elementary and Middle School Students.

- 2020-21 **Portelli, R.A.** (\$5000) *NASA Michigan Space Grant Research Seed Grant*, Evaluating NASA IceSat-2 estimates of above ground biomass of early successional forests after wildfire using UAS and allometric equations
- 2020 **Portelli, R.A.** (\$3996) *Lake States Fire Science Consortium*, Comparison of UAS and IceSat 2.0 LiDAR data for canopy biomass estimates and carbon management
- 2018-20 Chandra, S. (PI) & **White, R.A.** (Co-PI) H.S. \$61,230. *Harry F. Guggenheim Foundation Research Grant*. The Violence of 1965-66 in Central and East Java, Indonesia
- 2012-14 **Bianchetti, R.A.** (supervised by Dr. A. MacEachren) \$11,669. *NSF Geography and Spatial Sciences Program- Doctoral Dissertation Research Improvement Grant*: Cognitive Aspects of Satellite Imagery Analysis.

INTERNAL GRANTS AWARDED [\$13,736]

- 2020 Grady, Ligmann-Zelinska, **Portelli, R.A.** (\$5,000) *MSU College of Social Science Small Grant Program: COVID-19*. Modeling the Potential of COVID-19 Outbreaks during the Transition Phase of the Pandemic.
- 2015 **Bianchetti, R.A.** (\$6,336) *MSU College of Social Science Faculty Initiatives Fund*. Evolving Agricultural Landscapes: Local perceptions of grasslands invaded by Red Cedar.
- 2009 **Bianchetti, R.A.** (\$2,400) *University of Idaho Student Grant Program*. Imagery Analysis for Shoreline Change Detection at Sand Point, Michigan

EXTERNAL GRANTS NOT AWARDED

- 2020 **Portelli, R.A.** (PI), White, (Co-PI), Madden (Co-PI). (\$894,081) *NASA Biodiversity*. Disturbance, Succession, and Moths: Moth movement and early succession in burned jack pine landscapes.
- 2020 **Portelli, R.A.** (US-PI), Zhang, A. (China-PI), J.Li, G. Dong, A. Ligmann-Zielinska, \$496,758 (US-portion). *NSF INFEWS China-US*. Assessing and Modeling Nexus of Inner Mongolian Mining Area-Grassland Ecosystem for Resilience.
- 2019 **Portelli, R.A.** (PI), Nyamai, P. (Co-PI), Hupy, J. (Co-PI). (\$385,000) *National Science Foundation*. Evaluating jack pine structural phenological responses to fire: Integration of new technologies and Geographic Object-Based Image Analysis
- 2019 **White, R.A.** (\$187,254) *NSF Science, Technology, and Society*. Standard Grant: Self-Perceptions of Expertise from Image Interpreters within Military Institutions during the 20th Century
- 2018 **White, R.A.** (PI) Bunting, E. (Co-PI) (\$925,443) *NSF Future of Work at the Human-Technology Frontier Overcoming Cognitive Overload during Remote Sensing Data Analytics*
- 2018 **White, R.A.** (\$403,073) *Air Force Young Investigators Program*. Situational Awareness and Image Interpretation During Collaborative Practices
- 2017 **White, R.A.**, (PI), Nyamai, P. (Co-PI). (\$439,215) *NSF Geography, Environment, Social Sciences*. Local-Scale Vegetation Recovery Post-Fire Analysis

with High Spatial Resolution Imagery and a Geographic Object-Based Analytics Approach

- 2017 Babington (PI), Boehm, McNich, Singh, **White, R.A.** (\$141,956) *Andrew Mellon Foundation*. Performing the Unfinished Work of Memory: The Transatlantic Reimagined
- 2016 **Bianchetti, R.A.** (\$17,717) *Joint Fire Science Program Graduate Research Innovation Program*. Evaluation of Unmanned Aerial Systems for Monitoring Post-Fire regrowth patterns
- 2016 **Bianchetti, R.A.** (PI) (\$90,999) *Environmental Protection Agency Education Grants Program*. Place-Based Citizen Science as a Process of Multi-generational learning about water resources in Michigan's Upper Peninsula
- 2015 Grady, Pizarro, Zeoli, **Bianchetti, R.A.** (\$248,873) *National Science Foundation Geography, Environment, and Social Sciences*. Multilevel Assessment of Population Health in Stabilized Neighborhoods and Planned Shrinkage Urban Areas

INTERNAL GRANTS NOT AWARDED

- 2020 **Portelli, R.A.** & Schultz, S. (\$33,479.75) *Michigan State AgBioResearch Project GREEN (Generating Research and Extension to meet Economic and Environmental Needs)*. UAS measurement of physiological and architecture response of grapes to environmental conditions **Pending 2021 due to COVID-19
- 2019 **Portelli, R.A.** (PI), Chitwood, D. (Co-PI), Portelli, R.A. & Chitwood, D. (\$10,000) *S3 (Science and Society @ State) Interdisciplinary Seed Grant*. Evaluation of perceptual search differences in Novice/Expert Image Interpretation Practices
- 2016 **Bianchetti, R.A.**, Nyamai, P., Aryal, J. (\$3,200) *MSU VISTA Scholars Program* Assessing Uncertainty in Multi-scale and Multi-Temporal Remote Sensing of Semi-Arid Bush Fire response to Precipitation Variability

NON-REFEREED PUBLICATIONS

- 2019 **Portelli, R.A.** What happens when a big business tries to take over and rename a neighborhood? Apr. 22
- 2018 **White, R.A.** Final Report: Remote Sensing Data for Virtual Reality Environment Development. USAF Summer Faculty Fellowship Program.
- 2016 **Bianchetti, R.A.** In a sea of satellite imagery experts' eyes are still needed. *The Conversation*. Jan. 29.
- 2015 **Bianchetti, R.A.** Humans Still matter. *GEOBlog, Blogspace of onGEO@MSU*. Nov. 17, 2015
- 2015 **Bianchetti, R.A.** Classification Methods for Remote Sensing Applications (online chapter) Department of Geography, Pennsylvania State University
- 2012 Stevens, J., Smith, J.M. and **R.A. Bianchetti**. Mapping Our Changing World, Co-Edited by: Alan M. MacEachren and Donna J. Peuquet, University Park, PA: Department of Geography, Pennsylvania State University (adaptation of online text originally written by David DiBiase beginning in 1997, with contributions at that time by James L. Sloan, Wesley Stroh, Beth Fletcher King, and many students)

- 2012 **Bianchetti, R.A.**, Robinson, A.C., and MacEachren, A.M. Opportunities for Semantic Research in Emergency Management. Report for *Map Symbolology: Standardizing Map Symbols for Critical Incidents*, U.S. Department of Homeland Security
- 2012 **Bianchetti, R.A.**, Robinson, A.C. and MacEachren, A.M. Semantic Web to Support Matching Symbolology across Agencies. Report for *Map Symbolology: Standardizing Map Symbols for Critical Incidents*, U.S. Department of Homeland Security
- 2011 **Bianchetti, R.A.**, R.E. Roth, J.I. Blanford, A.C. Robinson, and MacEachren, A.M. Multi-scale Symbolization for Emergency Mapping. Report for *Map Symbolology: Standardizing Map Symbols for Critical Incidents*, U.S. Department of Homeland Security
- 2011 **Bianchetti, R.A.**, J.I. Blanford. Report on IICD Symbolology Standardization Process Testing (Report compiled by R. Bianchetti and J. Blanford). Report for *Map Symbolology: Standardizing Map Symbols for Critical Incidents*, U.S. Department of Homeland Security
- 2009 **Bianchetti, R.A.**, Barnes, G. Using HiRISE imagery for detecting primary and secondary craters on Mars. *University of Idaho McNair Research Journal*, vol. 6, 5-10
- 2007 **Bianchetti, R.A.**, Fairley, J.P. Application of Remote Sensing in Hydrothermal Mineral Exploration of the Cuprite Mining District, Nevada. *University of Idaho McNair Research Journal*, vol. 4, 7-12

INVITED TALKS [Student Author]

- 2021 **Portelli, R.A.** A Critical Approach to Remote Sensing. Oregon State University, Geography and Geospatial Science Program, Jun. 18
- 2021 **Portelli, R.A.** Geographic Pattern Analysis of Social and Physical Geographic Data. Texas Tech University, Department of Geosciences, Mar 16
- 2021 **Portelli, R.A.** Expertise and the Geospatial Analysis of Remote Sensing. US Air Force Academy, Department of Economics & Geosciences, Mar. 7
- 2019 **Portelli, R.A.** Integration of Image-Based Phenotyping and Geographic Object-Based Image Analysis for Multiscale Vegetation Characterization, University of Miami-Ohio, Department of Geography, Nov. 19
- 2019 **Portelli, R.A.** Open-Source Methods of Geographic Object-Based Image Analysis. University of Miami of Ohio, Department of Geography, Spatial Statistics Course, Nov. 19
- 2019 **Portelli, R.A.** An Integrative Approach to Multiscale Plant Phenomics Using Geographic Object-Based Image Analysis. Nanjing Agricultural University, Oct. 25
- 2019 **Portelli, R.A.** Integrating Computational and Cognitive Image Analysis through OBIA, Capital Normal University, Jun. 5
- 2019 **Portelli, R.A.** Understanding Remote Sensing Data Using Cognitive-Inspired Models, Workshop on Ecological Remote Sensing, Beijing, China, Jun. 21
- 2018 **White, R.A.** UAS-OBIA for jack pine sapling mapping: Duck Lake Fire Case

- Study, University of Michigan Dearborn GIS Day Colloquium. Nov. 14
- 2018 **White, R.A.** History of Remote Sensing and Air Photo Interpretation. Geography 221 Introduction to Geographic Information. Nov. 12
 - 2018 **White, R.A.** Imaging the Past: Using Technical Documents and Personal Accounts: Remote Sensing and Our History, University Interdisciplinary Colloquium, Michigan State University Center for Interdisciplinary, Oct. 26
 - 2018 **White, R.A.** The Future of Human Research in Remote Sensing Analytics. Cognitive Forum, Michigan State University Psychology Department, Oct. 19
 - 2017 **White, R.A.** Making Sense of the Aerial Photograph: Visualization and Understanding Our Environment. Visualization Community Speaker Series. Michigan State University Library. Oct. 20
 - 2017 **Bianchetti, R.A.** Human-Computer Symbiosis: The importance of visualization in facilitating reasoning with geographic data. Central Michigan University, Department of Geography Colloquium Series. Feb. 17
 - 2015 **Bianchetti, R.A.** Rooting Cognitive Research in Remote Sensing Image Analysis in Historical Research. Department of Geography, University of Zurich. Sept. 8
 - 2015 **Bianchetti, R.A.** From the Backwoods of the UP to MSU: The story of how I became a geographer. Geography 480 Senior Seminar. Nov. 13
 - 2013 **Bianchetti, R.A.** Cognitive Task Analysis and TimeSync. Oregon State University, LARSE Meeting. Nov. 12
 - 2012 **Bianchetti, R.A.** Beyond the Pixel. The Pennsylvania State University Geography Department Coffee Hour. Nov. 4
 - 2011 **Bianchetti, R.A.** Cognitive Aspects of Image Analysis. Geography 497E course Human Factors in Geographic Information Science.

CONFERENCE PRESENTATIONS

- (accepted) **Portelli, R.A.** Mapping the Impacts of the September 30th Movement. North American Cartographic Information Society, October 15
- 2020 Pope, P., **Portelli, R.A.**, Sharma, J.B. Geo-Ontology: What is it and Why Should I Care? ASPRS GeoWEEK 2020, June 25
- 2019 **Portelli, R.A.** Image-based Phenotyping with UAS in China: A recent case study, ASPRS Eastern Great Lakes Meeting, Cincinnati, OH, Nov. 1
- 2019 **White, R.A.** Unity 3D: Overcoming challenges in virtual world development with remote sensing data. ASPRS National Meeting, Denver, CO, Jan. 29
- 2018 **White, R.A.** Translating Expertise: Adapting Human Reasoning for Geographic Object-Based Image Analysis. AAG National Meeting, New Orleans, LA, Apr. 13
- 2018 **White, R.A.** Human Factors Influencing Image Interpretation: 100 years in the making. ASPRS National Meeting, Denver CO, Feb. 7
- 2017 **White, R.A.** Current Status of Human Factors Research in Remote Sensing. ASPRS Eastern Great Lakes Winter Meeting, Columbus, OH, Dec. 1
- 2017 **White, R.A.** Exploration of World War I aerial imagery and their

interpretations using modern image analysis. American Association of Geographers, Boston, MA, Apr. 7

- 2016 **Bianchetti, R.A.** A Cognitive Approach to teach a graduate-level GEOBIA course. International Society for Photogrammetry and Remote Sensing, Prague, Czech Republic, Jul. 14
- 2016 Nelson, P., Kennedy, R.E., Nolin, A.W., **Bianchetti, R.A.**, O'Connell, K., Morrell, P. Stories from dynamic Earth: developing your sense of place through Landsat-based citizen science. American Geophysical Union, San Francisco, CA. Dec.
- 2015 **Bianchetti, R.A.** Representation-based Knowledge Elicitation: Describing the image interpretation process of experts, International Cartographic Association, Rio de Janeiro, Brazil, Aug. 28
- 2015 **Bianchetti, R.A.**, Grady, S. The Potential of Remote Sensing Science for Assessing the Effects of Health-related Environmental Treatments (Invited Talk), Florence, Italy, Sept. 11
- 2015 **Bianchetti, R.A.** The Rise of the Orthophoto Map! AAG National Meeting, Chicago, IL, Apr. 23
- 2014 **Bianchetti, R.A.** Explaining the concept of Geography to K-12 students using abstraction process. ASPRS Pecora Conference, Denver, CO, Nov. 18
- 2014 **Bianchetti, R.A.** Examining novice misconceptions of satellite imaging. North American Cartographic Conference, Pittsburgh, PA, Oct. 8-11
- 2014 **Bianchetti, R.A.**, and MacEachren, A.M. Land cover disturbance analysis: Developing a model of expert image analyst reasoning. AAG National Meeting, Tampa, Florida, Apr. 8-12
- 2013 **Bianchetti, R.A.** Extracting infrastructure information from images to support human interpretation. American Society for Photogrammetry and Remote Sensing Meeting, San Antonio, TX, Oct. 22
- 2013 **Bianchetti, R.A.**, Singh, K.K. Human Interpretation vs. Object-Oriented Image Analysis for identifying distinguishing characteristics of nuclear power facilities. National Cartographic Information Society National Meeting, Greenville, NC, Oct. 9-13
- 2013 **Bianchetti, R.A.** The role of psychology in early texts on aerial photograph interpretation. AAG National Meeting, Los Angeles, California, Apr. 9-13
- 2012 **Bianchetti, R.A.** The effect of symbol abstraction on map reader conception. Middle States AAG Conference, Shippensburg, PA, Nov. 2
- 2012 **Bianchetti, R.A.**, Roth, R.E., Blanford, J., Robinson, A., MacEachren. Defining the typical Department of Homeland Security map. NACIS Annual Meeting. Portland, OR, Oct. 18
- 2012 Robinson, A., Pezanowski, S., **Bianchetti, R.A.**, Stevens, J., Guidero, E., Blanford, J., MacEachren, A.M. SymbolStore.org – An open resource for map symbols. NACIS Annual Meeting. Portland, OR, Oct. 19
- 2012 Robinson, A., Pezanowski, S., **Bianchetti, R.A.**, Guidero, E., Stevens, J., Blanford, J., MacEachren, A. Sharing map symbology for emergency management.

GeoCarto, New Zealand, Aug. 30

- 2012 **Bianchetti, R.A.** Visualization variables in cartography and aerial photo interpretation. Cartography Specialty Group Student Honors Paper Competition, AAG National Meeting, New York, NY, Feb. 24-28
- 2011 **Bianchetti, R.A.**, Yang, J., Li, R., Blanford, J., Hardisty, F., Robinson, A., Klippel, A., MacEachren, A. Comparing cartographic point symbol design with card sorting methods. North American Cartographic Information Society National Meeting. Madison, WI, Oct. 23-28
- 2011 **Bianchetti, R.A.**, Blanford, J., Robinson, A., MacEachren, A. Critical evaluation of international emergency management symbology. American Association of Geographers Annual Meeting, Seattle, WA, Apr. 12-16
- 2011 Pezanowski, S., Robinson A.C., E Guidero, E., **Bianchetti, R.A.**, Hardisty, F., Blanford, J., Roth, R., and MacEachren, A. An interactive, web-based tool for discovering and sharing map symbols. American Association of Geographers Annual Meeting, Seattle, WA: Apr. 12-16
- 2010 **Bianchetti, R.A.**, Humes, K.S., Jennings, M., Williams, C. (2010) Conifer forest species mixture classification using remotely sensed spectral and ground data. American Association of Geographers Annual Meeting, Washington, DC, Apr. 13-18
- 2009 **Bianchetti, R.A.**, Humes, K.S. (2009) Impact of reflectance calculations on identification of sandy beach areas along Sand Point, Michigan. University of North Texas Annual McNair Symposium, Denton, TX, Feb. 19-21
- 2009 **Bianchetti, R.A.**, Humes, K.S. IKONOS Imagery for coastal delineation along Sand Point, Michigan. 4th Annual University of Puerto Rico in Humacao McNair Symposium, Old San Juan, PR, May 19-21
- 2009 Jensen, J.L.R., **Bianchetti, R.A.**, Humes, K.S. Evaluation of single vs. integrated sensor algorithms to estimate Leaf Area Index in complex forest environments. American Society of Photogrammetry and Remote Sensing Annual Conference, Baltimore, MD, Mar. 9-13
- 2009 **Bianchetti, R.A.**, Humes, K.S. Comparing imagery analysis techniques for coastal erosion monitoring along Sand Point, Michigan. American Association of Geographers Annual Meeting, Las Vegas, NV, Mar. 22-27

CONFERENCE POSTERS

- 2019 **Portelli, R.A.** Geographic Image Object Analysis of UAS imagery for plant structure extraction. *International Plant Phenotyping Symposium*, Nanjing, China. Oct. 27
- 2018 **White, R.A.** Human Factors of Remote Sensing Image Analysis. *Broadening Participation in Visualization Workshop CRA-W*. Purdue University, West Lafayette, IN, Jul. 12
- 2016 Haga J., **Bianchetti, R.A.** Novice Differences in Differentiating Between Arid and Drought-Affected Environments. Michigan State University. *University Undergraduate Research and Arts Forum*, East Lansing, MI, Apr. 8

- 2013 **Bianchetti, R.A.**, MacEachren, A.M. Deepening our understanding of cognitive aspects of image analysis: Relationships between medical image processing and earth observation. *Conference on Spatial Information Theory*, Scarborough, UK, Sept. 2-6
- 2013 Smithwick, E.A.H., Naithani, K.J., Davis K.J., Kennedy R.E., **Bianchetti, R.A.**, Parker L., Baldwin D.F., Keller K., Masek J.G. Incorporating disturbance and associated uncertainty into diagnostic terrestrial carbon flux upscaling. *NASA Terrestrial Ecology Science Team Meeting*, La Jolla, CA, Apr. 30-May 2
- 2011 **Bianchetti, R.A.**, Becker, J., and MacEachren, A. A user interface for aiding in recreational activity decision making. *International Cartographic Conference*, Paris, France: Jul. 3-8
- 2007 **Bianchetti, R.A.**, Fairley, J.P. Mineral Pattern Identification at Two Hydrothermal Areas Using ASTER Data. *Geological Society of America Annual Meeting*, Denver, CO, Oct. 28-31.

MEDIA INTERVIEWS

- Bump, Philip. Here's why the resolution of satellite images never seems to improve. *Washington Post*. Apr. 21, 2017

MEDIA COVERAGE

- Quigley, K. Using drones and image analysis to monitor jack pine regeneration after fire. Lake State Fire Science Consortium, *Research Brief for Forest Managers*. December 2019
- Companies sometimes drive efforts to rename neighborhoods. AAG, *SmartBrief Weekly Newsletter*. April 25, 2019

PUBLISHED CARTOGRAPHIC PRODUCTS

- Chandra, S. (2019) Glimpse of Indonesia's 1965 Massacre through the Lens of the Census: The Role of Trucks and Roads in "Crushing" the PKI in East Java. *Ithaca* (108): 1-21.
- Chandra, S. Mapping the Killings in East Java. *Inside Indonesia*. Sept. 26, 2019. <https://www.insideindonesia.org/mapping-the-1965-66-killings-in-east-java>
- Chandra, S. Mapping the 1965-66 killings in Java. *New Mandala*. Sept. 30, 2019. <https://www.newmandala.org/mapping-the-1965-66-killings-in-java/>

FIELD EXPERIENCE

- 2019- Remote Sensing of Grazing Impacts on Grasslands in Inner Mongolia
- 2017- Remote Sensing for Monitoring Regrowth in Michigan's Jack Pine Forests
- 2012-14 Applications of Remote Sensing to Understand Indicators of Urban Poverty
- 2012-14 Representing Uncertainty in Remote Sensing and Carbon Flux Modeling
- 2010-12 Department of Homeland Security Map Symbology Standardization
- 2010 EPSCOR: SLOSH Hurricane Modeling for Sarasota County, Florida
- 2007-10 Remote Sensing of Natural Resources of Nez Perce Reservation, Idaho

TEACHING ACTIVITY

MSU COURSES (SIRS SCORE: 1 BEST / 5 WORST)

- GEO 326 Map design (3 credits)
 - SIRS 2015 [6 students]: 2.07
 - SIRS 2016 [13 students]: 2.09
 - SIRS 2017 [17 students]: 1.19
- GEO 426 Thematic Cartography (4 credits, *taught as GEO 490 SP2018*)
 - SIRS 2015 [10 students]: 1.32
 - SIRS 2016 [10 students]: 1.82
 - SIRS 2017 [7 students]: 2.24
 - SIRS 2019 [7 students]: 1.19
 - SIRS 2020 [5 students]: *none, due to COVID*
 - SIRS 2020 [10 students]:
- GEO 826 Geographic Object-Based Image Analysis (3 credits, *taught as 874 SP2020*)
 - SIRS 2015 [10 students]: 1.47
 - SIRS 2017 [10 students]: 1.38
 - SIRS 2020 [8 students]: *none, due to COVID*
- GEO 986 Theory and Philosophy of Geography (3 credits)
 - SIRS 2019 [18 students]: 1.28
- Independent Studies (Design and Supervision)
 - GEO 890 Advanced Reading: Fall 2016 (Michael Bomber, Michigan Forests)
 - GEO 892 Advanced Research: Spring 2016 (Quiong Zhang, Health/Remote Sensing), Spring 2018 (Connor Plensdorf, Urban/Remote Sensing), Fall 2020 (Breaunte Brown, Health/Cartography)
 - GEO 498 Internship: Spring 2016 (Joshua Haga), Spring 2018 (Luke Gerber)

INTERNATIONAL TEACHING

- 2019 Co-Instructor, Remote Sensing Big Data and Artificial Intelligence, Capital Normal University, Beijing, China, May 27- June 22
- 2021 Instructor, Workshop on Geographic Object Based Image Analysis, Autonomous University of Nuevo León, Mexico, February 26, 2021

TEACHING PRIOR TO MSU (INSTRUCTOR *, TA **, ONLINE ^)

- 2014 GEOG 480 Exploring Imagery and Elevation Data in GIS Applications*^
- 2012-13 GEOG 160 Mapping our Changing World*
- 2009 GEOG 385 GIS Primer**
- 2009 GEOG 524 Hydrologic Application of GIS and Remote Sensing**^
- 2006-08 Tutor, University of Idaho Tutoring and Academic Assistance Programs

NEW COURSES DESIGNED

- 2020 GEO 874: Cognitive Factors of Geographic Information Science
- 2019 GEO 986: Theory and Philosophy of Geography
- 2018 GEO 490: GeoVisual Analytics for Digital Humanities Scholarship

- 2016 GEO 892: Medical Applications of Remote Sensing
- 2015 GEO 826: Geographic Object-Based Image Analysis
- 2015 GEO 326: Map Design
- 2015 GEO 426: Thematic Mapping
- 2012 GEO 160: Mapping our Changing World

STUDENT COMMITTEES [*CHAIR]

- 2020-21 Bailey, Connor, MS, Entomology
- 2018-20 Michelle Church, MS*
- 2018-20 Ken Camacho, MS*
- 2017-19 Thomas Bilintoh, MS
- 2017-19 Connor Plensdorf, MS*
- 2016- 18 Michael Bomber, MS*
- 2016-17 Nick Ronnei, MS
- 2015-17 Toni Walkowiak, MS*
- 2014-16 Anni Yang, MS

RESEARCH MENTEES [*UNDERGRADUATE]

- 2021 Sophie Gabrysiak*
- 2020-21 Syed Kamoonpuri, MS Economics
- 2020 Sam Floriano*
- 2018-19 Camille North*
- 2018-19 Luke Gerber*
- 2017-18 Michelle Church*
- 2017 MacNamara, Derrek*
- 2015-16 Haga, Joshua*

ADVISEE AWARDS

- 2019 Church, M. Michigan Sea Grant-MSU Extension Graduate Fellow, \$500
- 2018 Gerber, L., Provost Undergraduate Research Initiative Program, Fall \$1500
- 2017 Church, M., Provost Undergraduate Research Initiative Program, \$1500
- 2015 Haga, J., Provost Undergraduate Research Initiative Program, \$2,000
- 2016 Bomber, M., Academic Achievement Graduate Assistantship, \$27,938
- 2016 Walkowiak, T., Rose Graduate Fellowship for Water Research, \$1000

AWARDS

2019

- Air Force Summer Faculty Fellowship. Cognitive Task Analysis of Expert Change Detection in High-Resolution Commercial Satellite Imagery. Wright Patterson Air Force Base Human Factors Research Laboratory. Visual Analytics. (\$15,000-declined to participate in trip to China)

2018

- Air Force Summer Faculty Fellowship. Cognitive Task Analysis of Expert Change Detection in High-Resolution Commercial Satellite Imagery. Wright Patterson Air Force Base Human Factors Research Laboratory. Visual Analytics. (\$15,000)
- Computing Research Association- Women (CRA-W) Travel award for 3rd Biennial Broadening Participation in Visualization Workshop (Travel)

2016

- Best Young Author Paper Award, ISPRS XXIII ISPRS Congress, Commission VI. A Cognitive Approach to teach a graduate-level GEOBIA course. ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences. (\$2,000)

2015

- U.S. National Committee to the International Cartographic Association Travel Grant for “Representation-based Knowledge Elicitation: Describing the image interpretation process of experts.” (\$1,800)

2014

- Saarinen Student Paper Competition Winner for “Land Cover Disturbance Analysis: Developing a Model of Expert Image Analyst Reasoning “(\$250)
- Miller Graduate Student Fellowship in Geography (Tuition and stipend of \$9587)

2013

- Middle States Division -AAG World GeoBowl Team Member (\$300)
- Ronald F. Abler Award in Geography (\$90)
- Ruby S. Miller Endowment Fund (\$300)

2012

- USGIF Doctoral Scholarship (\$5,000)
- Rodney Erickson Award (\$403) for “Defining the Typical Department of Homeland Security Map.”
- AAG Cartography Specialty Group Student Paper Finalist (\$155) for “Visualization Variables in Cartography and Aerial Photo Interpretation.”

2011

- Pennsylvania Space Grant Consortium Graduate Student Fellowship (\$10,000)
- US National Committee of the ICA Young Scholar Travel Grant to present “A user interface for aiding in recreational activity decision making.” (\$1,500)
- Ronald F. Abler Award in Geography (\$100) to present “A user interface for aiding in recreational activity decision making.”
- Ruby S. Miller Endowment Fund (\$180) to present “Supporting the Image Classification Process with an Improved Understanding of the Human Role in Imagery Analysis”

2009

- U of I Graduate and Professional Student Association Travel Grant (\$800)
- A.H. Featherstone Scholarship (\$1,500)
- U of Idaho Geography Department, Meritorious Service Award (\$100)

2008

- 2nd place Undergraduate Research Poster Competition (\$100)
- Ben A. Harrison Scholarship (\$1,500)
- James Magnuson Scholarship (\$1,000)
- NSF STEM Bridge to Graduate Study Scholarship (\$2,000)

2007

- NASA Idaho Space Grant Consortium Scholarship (\$2,000)
- ASUI Student Achievement Awards in Leadership and Service
- Harry and Shirley Caldwell Endowment Scholarship (\$1,000)

2006

- Harry and Shirley Caldwell Scholarship (\$1,500)
- Ben A. Harrison Scholarship (\$2,000)
- James E. West Scholarship (\$500)
- Idaho Tuition Scholarship (\$5,000/4yr)
- UI Science Tuition Scholarship (\$23,000/4yr)

SERVICE ACTIVITIES

UNIVERSITY SERVICE

- 2020-21 Geography Chair Search Committee
- 2019-21 University Military Education Advisory Committee
- 2018-19 Geography Department By-Laws Committee
- 2018-21 Geography Department Faculty Advisory Committee
- 2018 Faculty Chaperone, GeoCamp Grad Student Orientation Trip
- 2018-19 Geography Department Undergraduate Student Awards Committee
- 2017-19 Humanities and Arts Research Program Grants Review Committee
- 2017 Geography Department Undergraduate Student Awards Committee
- 2017 Geography Department Graduate Student Funding Committee
- 2017 Member of Geography Dept. Faculty Award Nomination Committee
- 2016 Geography Department Graduate Student Admissions Committee
- 2016 Participant, College of Social Science Brand Alignment Focus Group
- 2015- Faculty Adviser, Supporting Women in Geography Student Org.
- 2015 Faculty Adviser, Broad Writing Residency Program, Trevor Paglen
- 2012 Organizer, Instructor, Supporting Young Women in Geography
- 2012 Fundraising Coordinator, PSU No Boundaries Student Conference

PROFESSIONAL SERVICE (SG = SPECIALTY GROUP, SAC=STUDENT ADVISORY COUNCIL)

- 2020 Director, Remote Sensing Applications Division, ASPRS
- 2017- 20 Board Member, ASPRS Eastern Great Lakes Division
- 2019-21 Technical Program Committee, International Cartographic Association, Abstraction Workshop
- 2018-19 Technical Program Committee ASPRS National Meeting, Denver, CO
- 2018-19 Technical Program Committee IEEE-ISPRS JURSE (Joint Urban Remote Sensing Event) Symposium
- 2018-20 Assistant Director, Remote Sensing Applications Division, ASPRS
- 2018 Session Organizer, Human Influence in Remote Sensing, ASPRS
- 2018 Meeting Organizer, Eastern Great Lakes ASPRS Meeting, Ann Arbor, MI
- 2018 Mentor, Women Mentoring Workshop, AAG National Meeting
- 2017 Judge, AAG Remote Sensing SG Student Illustrated Paper Competition
- 2015 Program Committee Member, GeoVis 2015, ISPRS Geospatial Week
- 2014-17 Editorial Board Member, *Cartographic Perspectives*
- 2014-16 Academic Director, AAG Environmental Perception and Behavior SG
- 2014 ASPRS Education and Professional Development Committee
- 2014 Session Organizer, ASPRS Membership K-12 Outreach Showcase, ASPRS
- 2013 Organizer: AAG Environmental Perception and Behavior Group Saarinen Paper Competition and Student Travel Grant Competition
- 2013 Session Organizer, Strategies for Winning ASPRS Scholarships, American

- Society for Photogrammetry and Remote Sensing 2013, Annual Meeting
- 2013 Session Organizer, Advice for obtaining graduate student funding from NSF, ASPRS Annual Meeting
- 2013 Session Organizer, Emerging Research Trends in Emergency Management, ASPRS Annual Meeting
- 2013 Co-Organizer, CaGIS/ASPRS Fall Student Map Competition
- 2013 Student Officer, AAG Environmental Behavior and Perception SG
- 2013 Councilor, Education and Professional Development. ASPRS SAC
- 2013 Conference Assistant, ASPRS National Meeting
- 2012 Deputy Councilor of Education and Professional Development, ASPRS SAC
- 2012 Database Entry Volunteer, ASPRS Glossary of Mapping Science

OUTREACH

- 2019, 20 Instructor, Content Developer, MSU Upward Bound Math & Science
- 2018 Presenter, MSU Science Fest, Geospatial Revolution
- 2018 Presenter, R-Ladies East Lansing Chapter, “Geospatial Data”
- 2017 Presenter, MSU Graduate Women in Science Girls’ Math and Science
- 2013 Workshop Instructor, Supporting Young Women in Geography Day
- 2012, 13 Instructor, Upward Bound Math and Science: SEEMS PSU
- 2012 Judge, Pennsylvania State-level National Geographic Geography Bee
- 2011 Workshop Instructor, Supporting Young Women in Geography, Day
- 2009 Judge, Idaho TECH K-12 Competition Presentations
- 2009 Judge, Idaho Scholastic Bowl
- 2009 Workshop Instructor, GIS Day, for Moscow High School Students
- 2007 Geographic Education Volunteer, Adventure Club Elementary School

REVIEWS [ARTICLE*, PROPOSAL, COUNT]**

- 2021 Canadian Journal of Forestry [1]
- 2021 Cartography and GIScience Journal [1]
- 2021 NSF Grant Review Panel [15]**
- 2020 Forests* [1]
- 2020 Interacting with Computers* [1]
- 2020 Landscape Ecology* [1]
- 2020 Remote Sensing* [5]
- 2020 International Journal of Geo-Information* [1]
- 2019 Computers, Environment and Urban Systems* [1]
- 2019 Forests* [1]
- 2018 IEEE-ISPRS Joint Urban Remote Sensing Event Symposium* [5]
- 2019 US Army Engineer Research and Development** [2]
- 2018 Australian Research Council** [2]
- 2017 GIS & Remote Sensing* [1]
- 2017 Journal of Cleaner Production* [1]

- 2016 GIS and Remote Sensing* [1]
- 2016 Journal of Geographical Information Science* [1]
- 2015-Australian Research Council** [11]
- 2015 Cartography and Geographic Information Science* [1]
- 2015 The Cartographic Journal* [1]
- 2015 Remote Sensing of Environments* [1]
- 2015 Remote Sensing* [1]

PROFESSIONAL DEVELOPMENT

- 4/2020 AAG, Metrics that Make A Difference Workshop by Dr. Gil Pontius
- 10/2019 Image-based Plant Phenotyping, International Plant Phenotyping Training
- 6/2018 3rd Biennial Broadening Participation in Visualization Workshop, Computing Research Association
- 2/2018 Introduction to Google Earth Engine, N. Gorelick
- 7/2017 Workshop for Early Career Geoscience Faculty, National Association of Geoscience Teachers (*partial attendance due to family emergency*)
- 1/2017 MSU Write Winning Grant Proposals with Grant Writers'
- 8/2016 eCognition Developer Fundamentals, Trimble Inc. Training Workshop
- 8/2016 eCognition Analysis Strategies, Trimble Inc. Training Workshop
- 6/2016 National Center for Faculty Dev. and Diversity Faculty Success Prog.
- 2/2016 Beyond CTRL+F: Text Mining Across Disciplines, Uni. of Michigan
- 5/2015 Geographic Object-Based Image Analysis Workshop, ASPRS
- 3/2013 Looking Above the Terrain: Lidar for Vegetation Assessment, ASPRS
- 11/2011 Advanced Hyperspectral Sensing for Terrestrial Environment, ASPRS

MSU PROFESSIONAL DEVELOPMENT

- 2020 Online Instructional Readiness for Educational Excellence
- 2020 Conceptualizing and Assessing the Broader Impacts of Your Research
- 2018-19 Digital Humanities Pedagogy Training, MSU Digital Scholarship Lab
- 2/2015 NIH Funding for Non-Medical Projects
- 2/2015 Survive and Thrive in the MSU Tenure System
- 2/2015 Lily Teaching Seminar: Creative Teaching
- 1/2015 iCER Training: Introduction to Parallel Computing
- 11/2014 MSU Libraries Digital Humanities: Text Analysis
- 10/2014 MSU Advancement: Building a Budget
- 9/2014 College of Social Science New Faculty Orientation
- 9/2014 MSU Advancement: Seeking Support from Private Foundations

ACADEMIC AFFILIATIONS

- 2011 Gamma Theta Upsilon Geographic Honor Society Member
- 2006 McNair Program Scholar
- 2006 Golden Key International Honor Society Member

- 2006 Alpha Sigma Lambda National Honor Society Member

PROFESSIONAL AFFILIATIONS

- 2020- National Cartographic Information Society
- 2020- Women and Drones
- 2020- American Geophysical Union
- 2019- Cartographic and Geographic Information Society
- 2019- IEEE Geoscience & Remote Sensing Society
- 2019- Earth Science Women's Network
- 2019- 500 Women Scientists
- 2007- American Society of Photogrammetry and Remote Sensing
- 2007- American Association of Geographers

REFERENCES

- Dr. Sue Grady gradys@msu.edu
Associate Professor of Geography
Michigan State University
- Dr. Marguerite Madden mmadden@uga.edu
Professor of Geography
Director Center for Geospatial Research, Department of Geography, University of Georgia
Fellow, International Photogrammetry and Remote Sensing Society
- Dr. David Butler db25@txstate.edu
Texas State University System Regents' Professor of Geography Emeritus
University Distinguished Professor of Geography Emeritus
Fellow, American Association of Geographers
- Dr. Alan MacEachren maceachren@psu.edu
Professor Emeritus
Department of Geography
Pennsylvania State University