

Tanya E. Catignani

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Education

DOCTOR OF PHILOSOPHY | 2017 | GEORGE MASON UNIVERSITY

- Degree in Earth Systems & Geoinformation Science
- Dissertation Title: Geospatial Analysis of the Ancient Maya Wetland Agricultural Fields of Northern Belize and Surrounding Areas
- Related coursework: Physical Principles of Remote Sensing, Hyperspectral Imaging Systems, Hyperspectral Imaging Applications, Quantitative Methods

MASTER OF ARTS | 2004 | STATE UNIVERSITY OF NEW YORK AT BUFFALO

- Degree in Geographic Information Science (GIS)
- Related coursework: Advanced Topics in GIS, Statistics, Geographic Visualization, Research Design

BACHELOR OF SCIENCE | 2002 | MERCYHURST COLLEGE

- Major: Anthropology/Archaeology

Research Interests

- Analysis and visualization of lidar data to reveal impact of past cultures on the modern landscape.
- Geospatial predictive modeling at a regional scale to understand environmental and cultural influence on areas selected for agriculture.
- Remote sensing image analysis of earth processes to model and identify archaeological features.
- Geospatial data collection, management, visualization, and online mapping.

Experience

GEOSPATIAL SUPPORT TO PROJECT PLAZA OF THE COLUMNS | 2017 - PRESENT

I support the development of an online GIS, which contains spatial datasets for archaeological feature identification, field survey, and lidar-derived digital elevation models. I regularly compile reports on the project's status to show the amount of area surveyed, number of features identified, and the overall accuracy of our feature identification methods. I assist undergraduate anthropology students in learning geospatial methods, and help them identify the most appropriate tools for their work. I also participated in the 2018 summer field season assisting in field surveys and providing GIS support. My future contributions to this project will focus on the development of datasets based on historic mapping surveys from the 1970's, the impact of the Teotihuacan urban alignment to the modern landscape, and multispectral analysis of the region using WorldView-3 imagery.

GEOSPATIAL ANALYST | DEPARTMENT OF DEFENSE | 2009 - PRESENT

In my current position, I analyze imagery and geospatial data, develop visual graphics, maps, written reports, and presentations in support of national security issues. In this role, I have also sought out opportunities to teach others in the intelligence community about the role of geospatial intelligence and have briefed graduate classes at the National Intelligence University on several occasions.

GEOGRAPHER | US CENSUS BUREAU | 2007 - 2009

In this position, I managed GIS data in the development of Census Bureau shapefiles and maps. I followed and maintained standards of geospatial data accuracy using topology tools provided in ESRI's ArcGIS software. I also developed written instructions for local governments to use while updating their boundary lines with proprietary software developed exclusively for the Census Bureau.

RESOURCE INFORMATION SPECIALIST | US FOREST SERVICE | 2002 - 2007

In this position, I was in charge of maintaining the GIS database for the office (50+ employees) and developed new datasets from GPS data collected by field technicians. I provided guidance to co-workers in the use of GIS and basic map production as required. I also designed maps for our Environmental Impact and Environmental Assessment reports. In addition to my main work role, I served as the Vice Chair of the Civil Rights Committee. I also trained as a wildland firefighter and participated in off-forest details for fire and disaster recovery efforts. In 2005, I traveled to New Orleans with a 20-person crew to assist in the Hurricane Katrina recovery efforts.

Conference Presentations & Publications

Nawa Sugiyama, Adrian Chase, Tanya Catignani, Taylor Gibson, Omar Rodriguez. 2018. *In Sugiyama, Nawa, Saburo Sugiyama, Verónica Ortega, David Carballo, and William L. Fash eds. Proyecto Complejo Plaza de las Columnas, Teotihuacan: Informe parcial de la Tercera Temporada 2017.* Site report submitted and approved by the Archivo Técnico del Instituto Nacional de Antropología e Historia, Mexico, DF, pp. 510-538.

Sugiyama, Nawa, Saburo Sugiyama, Adrian Chase, Tanya Catignani and Taylor Gibson. 2018. "Methods of LiDAR Mapping in Urban Landscapes: Introducing the Teotihuacan LiDAR Map," Paper presented at the Society of American Archaeology, Washington, DC.

Catignani, Tanya, Dr. Sheryl Luzzadder-Beach, Dr. Timothy Beach. 2015. "Geospatial Analysis of the Ancient Maya Wetland Agriculture Fields of Northern Belize," Poster presented at the GEOINT Symposium, Washington, DC.

Teaching Experience

TEACHING ASSISTANT | 2013 | GEORGETOWN UNIVERSITY

- Course: "Introduction to Environmental Science"
- Description: Taught a lab section for an undergraduate course; designed all lab projects and graded all written work from both the lab and course.

ADJUNCT INSTRUCTOR | 2006 | MERCYHURST COLLEGE

- Course: "Introduction to Geographic Information Systems"
- Description: Developed the entire course including the syllabus, lectures, labs, and exams. My lectures included coordinate systems, map projections, vector and raster data, topology, cartography, global positioning systems, and data management. I also evaluated student progress and determined final grades for the course.

TEACHING ASSISTANT | 2001 | MERCYHURST COLLEGE

- Course: "Historic Archaeology Field School"
- Description: Assisted in supervising undergraduate students during an archaeological field school excavation. I assisted my professors with photographing excavation units, plotting the location of artifacts using a total station and assisted in determining final grades.

Awards

- Cosmos Club Foundation Scholars Grant (\$3,000), **February 2016**
- US Geospatial Intelligence Foundation 2014 Scholarship (\$5,000), **August 2014**
- Alexander Goetz Instrument Support Program, **December 2013**
- Vector Study Program (Dept. of Defense), Full PhD Scholarship, **June 2012**

Technical Skills

The majority of my technical experience has been in the use of ArcGIS and several of its extensions to include Spatial Analyst, Statistical Analyst, and Publisher. I am also familiar with ArcGIS Online and its complimentary Collector smart phone app for data collection in the field. I have a considerable amount of experience using QGIS, an open source software program, and a number of plugins. In addition, I am skilled in ENVI, which I've used to perform advanced multispectral and hyperspectral imagery analysis, Excel, R, SPSS, and Google Earth.