

ANDREW J. MARX
Associate Professor of the Practice of Spatial Sciences
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POSITIONS

- Aug 2017 – Present Associate Professor of the Practice of Spatial Sciences, Spatial Sciences Institute, Dornsife College of Letters, Arts and Sciences, University of Southern California, Los Angeles, CA
- Apr 2015 – Aug 2017 Assistant Professor, Center for Information Systems & Technology, Claremont Graduate University, Claremont, CA
- Sep 2006 – Jan 2014 Senior Foreign Affairs Analyst, U.S. Department of State, Office of the Geographer, Washington, DC
- Feb 2013 – May 2013 Research Fellow, Center for the Prevention of Genocide, U.S. Holocaust Memorial Museum, Washington, DC
- Jan 2010 – May 2012 Graduate Research Assistant, University of Maryland, College Park, MD
- Jan 2002 – Dec 2003 Graduate Research Assistant, Institute for Urban and Regional Development, University of California, Berkeley, CA
- Jun 2000 – Jun 2003 Political Analyst, U.S. Air Force, Pearl Harbor, HI
- Jun 1998 – Jun 2000 Operational Analyst, U.S. Air Force, Cambridge, England
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EDUCATION

Degrees

- 2009 – 2013 Ph.D. Geographical Sciences, University of Maryland, College Park, MD
- 2003 – 2005 Master City Planning, University of California, Berkeley, CA
- 1999 – 2002 M.A. Humanities, California State, Dominguez Hills, CA
- 1993 – 1997 B.S. Humanities, Air Force Academy, Colorado Springs, CO
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RESEARCH INTERESTS

Interdisciplinary geospatial and remote sensing analysis informing environmental and international policy

Digital image processing of satellite, aerial and drone imagery and algorithm development in ENVI IDL and Esri ArcPy

Spatiotemporal data analysis and visualization in Python and IDL programming environments

AWARDS

2018. “Evaluating Peer Effects of Turf Removal Program”. Metropolitan Water District of Southern California. **\$33,000**. (PI: 100%)
2017. “The Impact of Place in Rural Economic Mobility”. Fletcher Jones Foundation. **\$7,258**. (Co-PI: 50%)

2016. "Informing Conservation-Based Water Rate Structures in California through Remote Sensing". Resources Legacy Fund. **\$72,426**. (PI: 100%)

2016. "Detecting Adjacency Effects of Turf Removal Rebates". Metropolitan Water District of Southern California. **\$27,961**. (PI: 100%)

2016. "Southern California's Response to the Drought: A Landcover Assessment". Multon Niguel Water District. **\$32,536**. (PI: 100%)

2016. "LA's Urban Forest Since 1985, Understanding the Drought through Historical Satellite Data". U.S. Forest Service. **\$18,518**. (PI: 100%)

2016. "Improving Estimates of the Marian Cratering Rate". Microsoft Azure. **\$20,000**. (PI: 100%)

2016. "Connecting Imagery-Based Data Science with Environmental Analysis". Blais Challenge Award with the Claremont College's Keck Sciences Department. **\$22,518**. (PI: 100%)

2016. "Developing Campus-Wide UAV ("drone") Policy and Capacity." Claremont University Consortium's Consortial Fund for Cross-Campus Projects. **\$2,724** (Co-PI: 50%)

SERVICE

Faculty Hiring Committee. University of Southern California, Spatial Sciences. (2017-Present).

Faculty Research Committee. Claremont Graduate University. (2016-2017).

Reviewer, ISPRS Journal of Photogrammetry and Remote Sensing (2016-Present).

Reviewer, International Journal of Remote Sensing (2015-Present)

PUBLICATIONS

Marx, A. J., Caceres, C. and McFarlane, D. (2017). "Understanding the Impact of Drought on Los Angeles' Urban Forests through Historical Satellite Data." *Restoration Ecology*, *Under Review*.

Marx, A. J., (2017). "Satellite Monitoring of Phenological Changes to Guanacaste Trees in Costa Rica's Mixed Forests through Satellite Imagery: A Case Study at the Hacienda Barú Refuge." *Under Review*.

Marx, A. J., (2017). Using Satellites to Detect Mass Human Rights Violations: A Call to Implement an Early-Warning Detection System In S. Totten (Ed.), *Last Lectures* London, England: Routledge.

Marx, A. J. & Rogers, M. (2017). Analysis of Panamanian DMSP/OLS nightlights corroborates suspicions of inaccurate fiscal data. **Remote Sensing Applications: Society and Environment** **8**, 99-104.

Marx, A. J., et al. (2017). UAV data for multi-temporal Landsat analysis of historic reforestation: a case study in Costa Rica." **International Journal of Remote Sensing**: 1-18.

Lahza, H, Alhasawi, Y., & Marx, A. J. (2016). The Power of Social Media in Supporting Warehouse Location Decisions for Online Retailers Using GIS. **Proceedings of the 22nd ACIS**.

Marx, A. J. (2016). Detecting urban destruction in Syria: A Landsat-based approach. **Remote Sensing Applications: Society and Environment**, 4, 30-36.

Marx, A. J. (2013). Employing Moderate Resolution Sensors in Human Rights and International Humanitarian Law Monitoring. Retrieved from Digital Repository at UMD. (Pub No. 0117E 14359).

Marx, A. J. & Loboda, T. V. (2013). Landsat-based early warning system to detect the destruction of villages in Darfur, Sudan. **Remote Sensing of Environment**, 136, 126-134.

Marx, A.J. & Goward, S. (2013). Remote Sensing in Human Rights and International Humanitarian Law Monitoring: Concepts and Methods. **Geographical Review**, 103(1), 100-111.

Goward, S. N., Chander, G., Pagnutti, M., Marx, A., Ryan, R., Thomas, N., & Tetrault, R. (2012). Complementarity of ResourceSat-1 AWiFS and Landsat TM/ETM+ sensors. **Remote Sensing of Environment**, 123, 41-56.

COURSES

Spatial Computing

GIS Programming and Customization

GIS Essential Concepts

GIS Practicum

Advanced GIS Practicum

Drones and UAVs for GIS

Environmental Applications of Drones and GIS

Applied IT Writing and Business Communication

PROFESSIONAL AWARDS AND CERTIFICATIONS

Oct 2016: **FAA Remote Pilot Airman License**

Jun 2014: **Franklin Award**: Remote Sensing Research on Syrian Conflict

May 2012: **Meritorious Honor Award**: Sudan Survey Research

2008 – 2010: **Pat Roberts Intelligence Scholar's Program**

2006 – 2008: **Presidential Management Fellow**

SELECTED PRESS AND PRESENTATIONS

Knickmeyer, Ellen. "In California, a \$350 Million Social Experiment over Lawns." Associated Press. 31 October 2016.

"California Irrigated Landscape Algorithm." Water Data Summit. Stanford Graduate School of Business, Stanford, CA. 9 September 2016.

Hernandez, Roberto. "Drones: Studying Reforestation in Costa Rica." Flame Magazine. 1 July 2016.

"Pixel and Object-Based Classification: NAIP Irrigable Area Estimates." Metropolitan Water District, Los Angeles, CA. 6 April 2016.

"Detecting Human Rights Violations in Syria; a Landsat-Based Approach." American Association of Geographers, San Francisco, CA. 29 March 2016.

Hernandez, Roberto. "Collecting Visual Data with Drones". Flame Magazine. 28 March 2016.

Hernandez, Roberto. "Detecting Human Rights Violations with Satellites". Flame Magazine. 7 January 2016.

"Transdisciplinary Research Applying Big-Data, Big-Processing Approaches to NASA's Remotely-Sensed Data." Claremont Graduate University Board of Trustees, Claremont, CA. 3 December 2015.

"Time-Series Analysis of Earth Observatories for Activity Tipping and Queuing." ENVI Analytics,

Andrew J. Marx: Curriculum Vitae

Symposium, Boulder, CA. 26 August 2015.

Martinez, Barbara. "Spotting the Early Warning Signs of Humanitarian Crisis." Holocaust Museum Magazine, Spring 2014. Vol. 2 No. 2.

Irons, James R. "Using Landsat to Detect Human Rights Violations." Landsat Science. 30 October 2013.

Schutzberg, Adena. "Using Landsat Data to Detect, Rather than Confirm, Mass Human Rights Violations." Directions Magazine: All Things Location. 10 October 2013.