

# ANTHONY R. CUMMINGS

Geospatial Information Sciences  
School of Economic, Political and Policy Sciences  
University of Texas at Dallas  
800 W Campbell Road  
Richardson, Texas 75080

## EMPLOYMENT

Assistant Professor, University of Texas at Dallas	August 2014 – present
Visiting Assistant Professor, University of Texas at Dallas	September 2013 – August 2014
Instructor, Syracuse University	Fall 2011 – Spring 2013
Teaching Assistant, Syracuse University	Fall 2010 - Spring 2011
Research Assistant, Syracuse University	Spring 2009- Summer 2009

## EDUCATION

<b>Ph.D. Geography,</b> Syracuse University, Syracuse, New York	December 2013
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<b>M.Phil. Geographical Information Systems (GIS) and Remote Sensing</b> University of Cambridge, Cambridge, UK	October 2003
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<b>M.Sc. Natural Resource Management</b> University of the West Indies, Cave Hill, Barbados, WI.	October 2002
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<b>B.Sc. Agriculture</b> Department of Agriculture, University of Guyana Turkeyen, Guyana	November 1999
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## Grants

- Resolving Conflict and Identifying Trafficking Scenarios in Guyana's Human-Big Cat Landscape, Cummings, A.R. (PI), **\$36,400**, National Geographic Society, 2018-2019.
- Measuring fine-scale forest cover change and carbon sequestration potential using unmanned aerial vehicles, Cummings, A.R. (PI), **\$5000**, EPPS Advisory Council Grant, School of Economic, Political and Policy Science, The University of Texas at Dallas, 2016-2017.
- Mapping Hotspots of Human-Jaguar Conflict and Identifying Country-Level Stakeholders for the Long Term Conflict Resolution in Guyana, Cummings, A.R. (PI), **\$6000.00**, Panthera, 2015-2016
- Man versus Cat: The Case of Jaguars-Gold Miners Interactions in Guyana, Cummings, A.R. (PI), **\$4360**, National Geographic Society – Big Cats Initiative, 2014-2015.
- Sustainable utilization of Crabwood (*Carapa guianensis*) as a non-timber forest product in the proposed Shell Beach Protected Area through the development of a community-based Management system, Arjoon, A. (co-PI) and Cummings, A.R. (co-PI), **€ 84, 000.00**, Tropical Rainforest Programme – the Netherlands Committee-International Union for the Conservation of Nature, 2002-2003.

## PUBLICATIONS

\*undergraduate/graduate student collaborator/\*\*indigenous collaborator

### *Refereed Journal Articles*

Shah, M.\* , & **Cummings, A.R.** 2018. Comparing logging and subsistence values of plants across an indigenous peoples' influenced landscape, *Ecological Indicators* (95): 165-175, <https://doi.org/10.1016/j.ecolind.2018.06.045>.

Overman, H., Butt, N., **Cummings, A.R.**, Luzar, J.B., & Fragoso, J.M.V. 2018. National REDD+ implications for tenured indigenous communities in Guyana, and their impact on forest carbon, *Forests* 9(5): 231 <http://dx.doi.org/10.3390/f9050231>.

**Cummings, A.R.**, Read, J.M. & Fragoso, J.M.V. 2018. Implications of Forest Type and Landscape Diversity on the Sustainability of Ecosystem Services Provided by Northern Amazonia's Multiple-Use Tree Species, *Landscape Ecology*, DOI: 10.1007/s10980-018-0614-3.

Paneque-Gálvez, J. Vargas-Ramírez, N., Napoletano, B.M. & **Cummings, A. R.** 2017. Grassroots innovation using drones for indigenous mapping and monitoring in Latin America, *Land* 6(4):25.

**Cummings, A.R.** & Shah, M\*. 2017. Mangroves in the Global Climate and Environmental Mix, *Geography Compass*, DOI: 10.1111/gec3.12353.

**Cummings, A.R.**, Cummings, G.R., Hamer, E., Moses, P.\*\* , Norman, Z.\*\* , Captain, V.\*\* , Bento, R.\*\* & Butler, K.\*\* 2017. Developing a UAV-Based Monitoring Program with Indigenous Peoples, *Journal of Unmanned Vehicle Systems*, <https://doi.org/10.1139/juvs-2016-0022>

**Cummings, A.R.**, McKee, A.\* , Kulkarni, K.\* & Markandey, N.\* 2017. The Rise of UAVs, *Photogrammetric Engineering and Remote Sensing*, 83 (4): 317-325.

**Cummings, A.R.**, Karale, Y.\* , Cummings, G.R., Hamer, E., Moses, P. \*\* , Norman, Z.\*\* , Captain, V.\*\* , Bento, R.\*\* & Butler, K.\*\*2017. UAV-Derived Data for Mapping Change on a Swidden Agriculture Plot: Preliminary results from a Pilot Study, *International Journal of Remote Sensing* 38 (8–10): 2066-2082.

**Cummings, A.R.**, Piquero, A.R. & Accetturo, P.W.\* 2016. Insights into the Nature and Spatial Distribution of Guyanese Crime, *Deviant Behavior* <http://dx.doi.org/10.1080/01639625.2016.1257891>.

**Cummings, A.R.** & Read, J.M. 2016. Drawing on Traditional Knowledge to Identify and Describe Ecosystem Services Associated with Northern Amazon's Multiple-Use Plants, *International Journal of Biodiversity Science, Ecosystem Services & Management*, 12 (2016): 39-56. DOI: 10.1080/21513732.2015.1136841.

**Cummings, A.R.**, Read, J.M. & Fragoso. 2015. Utilizing Amerindian Hunters' Descriptions to Guide the Production of a Vegetation Map, *International Journal of Applied Geospatial Research*, 6(1), 118-142. DOI: 10.4018/ijagr.2015010107.

Levi, T., Silvius, K. M., Oliveira, L. F. B., **Cummings, A. R.**, & Fragoso, J. M. V. 2013. Competition and facilitation in the capuchin-squirrel monkey relationship, *Biotropica*, 45(5): 636-643.

Read, J.M., Fragoso, J.M.V., Silvius, K.M., Luzar, J., Overman, H., **Cummings, A.**, Giery, S.T., & Flammarion de Oliveira, L. 2010. Space, Place, and Hunting Patterns among Indigenous Peoples of the Guyanese Rupununi Region, *Journal of Latin American Geography*, 9 (3): 213-243.

### ***Book Chapter***

Sivasailam, A.\* & **Cummings, A.R.** 2016. Does the Location of Amerindian Communities Provide Signals About the Spatial Distribution of Tree and Palm Species? In Griffith, D.A., Chun, Y. & Dean, D. J (Eds.) *Advances in Geocomputation*, Springer International Publishing, Switzerland.

### ***Other products***

Cummings, A.R. 2017. Our "Tigers" and Us. Explore Guyana, Tourism and Hospitality Association of Guyana (THAG), The Ministry of Business and Guyana Tourism Authority.

Cummings, A.R. 2015. An Updated Vision Document for Water Resource Management in Guyana, Government of Guyana and the Amazon Cooperation Treaty Organization, Georgetown, Guyana.

Cummings, A.R. 2006. Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin: National Vision Document", (<http://iwlearn.net/iw-projects/2364/reports/amazon-basin-vision/RelatorioVisaoGuiana30108.pdf>), Georgetown, Guyana.

Cummings, A.R. 2006. Spatial Analysis of a Waini Crabwood Inventory, Guyana Marine Turtles Conservation Society, Georgetown, Guyana.

### **Professional recognition and honors**

EPPS Outstanding *Teaching Comet Award winner* 2016  
School of Economic, Political and Policy Sciences  
The university of Texas at Dallas

EPPS Outstanding *Teaching Comet Award nominee* 2015  
School of Economic, Political and Policy Sciences  
The university of Texas at Dallas

EPPS Outstanding <i>Teaching Comet Award winner</i> School of Economic, Political and Policy Sciences The university of Texas at Dallas	2014
Roscoe Martin Research Grant, Syracuse University	2011
Graduate Scholar, Selwyn College, University of Cambridge	2002
Cambridge Commonwealth Trust/Shell Centenary Scholar Cambridge University	2002 – 2003

### **Invited Talks and Conference Presentations:**

#### *Invited talks/presentations*

Cummings, A.R. 2015. “Man vs Cat: Insights Into the Spatial and Temporal Encounters of Humans and Jaguars in Guyana.” National Geographic Society Headquarters, Washington D.C.

Cummings, A.R. 2015. “Man vs Cat: Spatial and Temporal Considerations.” GIS Day, The University of Texas at Dallas Richardson, Texas.

Cummings, A.R. 2015. “Man vs Cat: Insights Into the Spatial and Temporal Encounters of Humans and Jaguars in Guyana.” Tech on the Tap, The University of Texas at Dallas Richardson, Texas.

Cummings, A.R. 2012. “For Logs or for Worship: The Amerindians of Southern Guyana and their relationship to multiple-use tree species,” Caribbean Week, Caribbean Studies and the Caribbean Student's Association, Colgate University.

Cummings, A.R. 2006. “Remote Sensing and GIS in the Management of the Amazon’s Watershed,” Amazon Cooperation Treaty Organization, Guyana subcommittee on Environment, Foreign Service Institute, Ministry of Foreign Affairs, Georgetown, Guyana.

Cummings, A.R. 2005. “Promoting Community Participation in the Management of Natural Resources and the Environment”, Capacity Building for the Management of Natural Resources and Environment project, Monitoring and Evaluation Workshop, Foreign Service Institute, Ramphal House, Ministry of Foreign Affairs.

Cummings, A.R. 2003. “The Use of Remote Sensing to Discriminate Ecosystems in Guyana: A Case Study of the Shell Beach Area,” United Nations Environmental Programme - World Conservation Monitoring Centre (UNEP-WCMC), Huntingdon Road, Cambridge, England.

#### *Contributed abstracts and/or oral presentations:*

Alghamdi, A. & Cummings, A.R. 2017. "Measuring Urban Change in Riyadh City Between 2004-2014", paper presented at the 113th Annual Meeting of the Association of American Geographers, Boston, MA, April 8.

Kennady, B & Cummings, A.R. 2017. "The effects of fire on indigenous landscapes in Guyana", paper presented at the 113th Annual Meeting of the Association of American Geographers, Boston, MA, April 7.

Shah, M. & Cummings, A.R. 2017. "How do plant attributes affect spatial distribution of multiple-uses across space? An ecosystem service approach", paper presented at the 113th Annual Meeting of the Association of American Geographers, Boston, MA, April 7.

Cummings, A.R., Karale, Y., Cummings, G.R., Hamer, E., Moses, P., Norman, Z., Captain, V., Bento, R. & Butler, K. 2017. "Mapping Change on Swidden Agriculture Plots Using Unmanned Aerial Vehicles", paper presented at the 113th Annual Meeting of the Association of American Geographers, Boston, MA, April 6.

Cummings, A.R. 2016. "The Role of Unmanned Aerial Vehicles in Facilitating Community Participation in REDD+: Establishing a Monitoring Network", paper presented at the 112<sup>th</sup> Annual Meeting of the Association of American Geographers, San Francisco, CA, March 30.

Cummings, A.R. 2015. "Man versus Cat: An Analysis of Jaguar-Human Interactions in Guyana". Poster presentation, 27<sup>th</sup> International Congress for Conservation Biology- 4<sup>th</sup> European Congress for Conservation Biology, Montpellier, France, August 2-6.

Cummings, A.R. & Sivasailam, A. 2015. "Does the Location of Amerindian Communities Provide Signals into the Spatial Distribution Patterns of Tree and Palm Species?" Geocomputation 2015, The University of Texas at Dallas, May 22.

Cummings, A.R., Arjoon, A., & Bollers, R. 2014. "Protecting Crabwood: An Account of Indigenous Peoples' Efforts to Map the Distribution of *Carapa guianensis* to Secure Traditional Lands", paper presented at the 110<sup>th</sup> Annual Meeting of the Association of American Geographers, Tampa, FL, March 8.

Cummings, A.R. & Read, J.M. 2014. "Landscape diversity and species distribution: Accounting for land tenure classes in the sustainable management of Amazonia's multiple-use plant species", paper presented at the 110<sup>th</sup> Annual Meeting of the Association of American Geographers, Tampa, FL, March 8.

Cummings, A.R. 2013. "Modeling the Distribution of Rare Multiple-use Plant Species in a Fragmented Northern Amazonian Landscape", International Conference on Conservation Biology, Baltimore, Maryland, July 23.

Cummings, A.R., Read, J.M., Fragoso, J.M.V. & Silvius, K.M. 2013. "An Evaluation of the Environmental Factors Associated with the Distribution of Multiple-use Tree Species", (paper

presented at the 109<sup>th</sup> Annual Meeting of the Association of American Geographers, Los Angeles, CA, April 10.

Cummings, A.R. 2012. "Rupununi Multiple-use Tree Species: Exploring a Common and Assessing Implications for Wildlife Food Security", paper presented at the 108<sup>th</sup> Annual Meeting of the Association of American Geographers, New York, NY, February 27.

Cummings, A.R. 2004. "The Use of Remote Sensing to Discriminate Ecosystems in Guyana: A Case Study of the Shell Beach Area", Proceeding of URISA's Second Caribbean GIS Conference, Sherborne Conference Centre, Barbados, September 17.

### *Interviews*

Cummings, A.R. 2015. "Amid Gold Rush, Jaguars Clash with Miners", <http://news.nationalgeographic.com/2015/12/151204-jaguars-gold-guyana-animals-science-south-america/>, December 4, 2015.

Cummings, A.R. and Arjoon, A. 2015. "Protecting the Jaguar", Close-Up, National Communications Network, Georgetown, Guyana, July 23, 2015.

## **TEACHING EXPERIENCE**

### *United States:*

**The Global Environment (ENVR/GEOS/GEOG 2302),** Fall 2013 - present

The University of Texas at Dallas

**Remote Sensing Fundamentals (GEOS 5325/GISC 6325)** Fall 2014 - present

**Global Environmental Change (GISC)** Fall 2014

**Applied Remote Sensing (GISC 7366/GEOS 5329),** Spring 2014  
University of Texas at Dallas

**Global Environmental Change (GEO 215),** Syracuse University Summer & Fall 2011

Summer 2012/2013

**The Natural Environment (GEO 155),** University College, Summer 2010  
Syracuse University

### *Guyana:*

**Practical Computer Skills for Geoscientists,** School of Spring 2004  
Education and Humanities, Department of Social Studies,  
University of Guyana

**Introduction to Geographical Information Systems,** Spring 2004  
Department of Forestry, Guyana School of Agriculture

### *Taught as a member of a team:*

**The Global Community (MAX 132)** Fall 2012 & Spring 2013

***Teaching Assistant:***

**Environmental Remote Sensing (GEO 482/682)**

Department of Geography, Syracuse University  
(Under Dr. Jane Read)

Spring 2011

**Global Environmental Change (GEO 215)**

Department of Geography, Syracuse University  
(Under Dr. Jane Read)

Fall 2010

**The Natural Environment (GEO 155)**

Department of Geography, Syracuse University  
(Under Dr. Jacob Bendix)

Spring 2010

***Courses Taught in the Field, Guyana:***

Introduction to Community-Based Natural Resource  
Management, Iwokrama Ranger Training Course, Iwokrama  
International Centre for Rainforest Conservation and Development,  
Guyana

December 2006

Introduction to Environmental Impact Assessment,  
Iwokrama Ranger Training Course, Iwokrama  
International Centre for Rainforest Conservation and Development,  
Guyana

September 2005

**PROFESSIONAL ACTIVITIES, SERVICE AND MEMBERSHIPS**

**Conference Organization**

Member of the Scientific Committee, International Conference on Conservation Biology 2017,  
Society for Conservation Biology, Cartagena, Colombia.

**Conference session organization**

American Associations of Geographers Annual Meeting: Boston (2017), San Francisco (2016).

**Conference session chair**

American Associations of Geographers Annual Meeting: Boston (2017), San Francisco (2016),  
Tampa (2014).

**Grant Awards Committee**

Pioneer Scholarship – 2015; 2017

**Presenter:**

Workshop on Teaching Effectiveness, School of Economic, Political and Policy Sciences, The  
University of Texas at Dallas

**Professional memberships:**

Association of American Geographers (AAG) - 2011 - present

American Society for Photogrammetry and Remote Sensing (ASPRS) – 2011 – present

Society for Conservation Biology – 2012 - present

Cambridge Scientific Society – Life Member

**University Service:**

- PhD Dissertation Oral Examination outside chair: 2017 (2)

**Program Service:**

- Advisor, Geographic Information Science Student Organization (2015 – present)

**Book Publication Review**

- Springer: 2017

**Journal paper referee**

Forest Ecology and Management

Environments

Ambio

GIScience and Remote Sensing

Forests

Sustainability

Remote Sensing of Environment

International Journal of Remote Sensing

Arid Environments

Geographic Information Science and Technology Body of Knowledge

Frontiers in Earth Science

The Rangeland Journal

South African Journal of Science

Land Use Policy

Electoral Studies