Jason T. Knowles, Ph.D.

Lecturer of Spatial Sciences
Spatial Sciences Institute, Dornsife College of Letters, Arts and Sciences
University of Southern California
Los Angeles, CA 90089-0374 ❐ jason.knowles@geoacuity.com

Education

- Ph.D.   Louisiana State University (2008); Major: Geography
- M.Sc.   Louisiana State University (2004); Major: Geography
- B.A.   California State University, Long Beach (2000); Major: Geography

Professional Experience

- **2018-   Lecturer of Spatial Sciences, Spatial Sciences Institute, Dornsife College of Letters, Arts and Sciences, University of Southern California,Los Angeles, CA.**
  Courses Taught; SSCI 588: Remote Sensing for GIS

- **2015-   Founder/CEO, GeoAcuity, Baton Rouge, LA**
  GeoAcuity is geospatial consulting firm that specializes in providing high quality Geographic Information Systems (GIS), Remote Sensing (RS), and Geospatial Intelligence (GEOINT) solutions to the environmental, municipal and federal sectors. Utilizing cutting edge technology GeoAcuity provides spatial insight and geospatial data creation services to decision makers through the full spectrum of geospatial technologies.

- **2008-16 Naval Intelligence Officer, United Sates Navy Reserve**
  Cleared for Top Secret information and granted access to Sensitive Compartmented Information (TS/SCI) based on a Single Scope Background Investigation.

- **2009-15 Senior Geospatial Scientist/Geospatial Solutions Architect, DigitalGlobe, Baton Rouge, LA**
  Senior Geospatial Scientist for DigitalGlobe's U.S. Government Technical Team. Managed and directed ArcGIS Server and ArcGIS Online implementations in the cloud utilizing Amazon Web Services. Oversaw data delivery and web based solutions via Flex, Silverlight, and JavaScript based web portals. Onsite support at U.S. Special Operations Command and its subordinate theater components where he oversaw production of multi-layered, fused, geospatial predictive intelligence analysis and modeling in direct support of USSOCOM's Irregular Warfare (IW) and Unconventional Warfare (UW) missions supporting counter-narcotics, human terrain analysis, and counter-terrorism efforts.

- **2008-09 GIS Projects Manager, Geographic Technologies Group, Davie, FL**
  Full-service local government GIS Consulting. GIS support to associated municipal departments (Fire, Police, Planning, Zoning, Utilities, Public Works, Parks, Code Enforcement, and Engineering). GIS Needs Analysis & Strategic Implementation Plans, design and implementation of enterprise wide ArcSDE based GIS systems, on-site GIS coordination, ArcGIS Server configuration and implementation, Intranet and Internet web mapping, design of Public GIS portals, inventory and infrastructure mapping, GIS integration with land records, permitting, inspections, planning, zoning, and records management systems, AutoCAD conversion to GIS, and Cartographic map production. Maintain, update and create GIS layers, Coordinate with departments and agencies, analyze data in order to prepare maps and graphics, establishing standard map formats, queries and reports

- **2005-08 GIS Analyst, Gulf Engineers and Consultants Inc., Baton Rouge, LA**
  Environmental GIS support; multi-layered geospatial analysis, cartographic design, development and implementation of 3D multi-variant predictive models, raster to vector conversion, imagery geo-rectification, creation of attributed digital GIS vector coverage's, Digital Elevation Model (DEM) and Digital Surface Model (DSM) construction and analysis, geodatabase design, bathymetric mapping and volumetric calculation and GPS data collection.

- **2002-04 Graduate Research Associate, Geography Department, Louisiana State University, Baton Rouge, LA**
  LSU Biogeography and Paleoecology Lab, paleotempestology research; identifying millennial scale changes in catastrophic hurricane landfall frequencies based on proxy evidence contained within coastal lake sediments (fossil pollen, diatoms, loss-on-ignition analysis, and the analysis of geophysical radioisotopes (^{14}C, ^{210}Pb, ^{137}Cs)). Extensive laboratory work and field experience supplying support to scientific research expeditions in Chile, Peru, Belize, Honduras, Peoples Republic of China, Kenya and many islands in the Caribbean.

- **2002-04 GIS Research Associate, Forestry Department, Louisiana State University, Baton Rouge, LA**
  School of Renewable Natural Resources, design and implementation of ArcIMS Web and Map Objects Desktop based site selection GIS applications for pine forest regeneration for the Louisiana Department of Agriculture and Forestry, School of Renewable Natural Resources.

- **2001-02 GIS Analyst, Gulf South Research Corporation, Baton Rouge, LA**
  Environmental GIS support; multi-layered geospatial analysis, cartographic design, development of 3D multi-variant predictive models, raster to vector conversion, imagery geo-rectification, geodatabase design and GPS data collection.

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Volunteer Experience

- **2005 GIS Analyst, Louisiana's Emergency Operations Center, Baton Rouge, LA**
  Geospatial intelligence support and liaison to military and multiple agencies at local, state, and federal levels for Hurricane Katrina emergency response. Data collection and data handling from multiple sources and projections, map production and cartographic design. Air photo and satellite imagery manipulation and interpretation. Geocoding of addresses with Lat-Long conversions for air/ground rescue support.

International Research Experience

- 2002-06 Field Research Lead: Honduras, Belize, Turks and Caicos, Jamaica, Barbados, Anguilla, St. Martin, Antigua and Barbuda, Bahamas. Paleotempestology research; investigating changes in prehistoric hurricane activities from geologic proxies in lake/lagoon sediment cores for the Central American and Caribbean basin. Lake coring, site GPS, air photo analysis, core analysis, loss-on-ignition analysis, satellite imagery and basemap construction, and cartographic design.
- 2005-07 Field Research: Lake Baringo Ecosystem, Kenya and Western Tibet, China. Paleo-environmental reconstruction from lake sediment cores. Lake coring, modern pollen and soil collection, site GPS, fossil pollen laboratory preparation, satellite imagery analysis (vegetation change detection), map creation, and cartographic design.
- 2004   Field Research: Quelccaya Ice Cap (19,000'), Peru. Paleo-environmental reconstruction from ice samples. Ice coring and collection, collection of high alpine pollen samples, modern pollen and soil collection, site GPS, satellite imagery analysis, and cartographic design.
- 2001   Field Research: Atacama Desert, Chile. Spatial analysis of vegetation distribution. GPS mapping of plant location, spatial and topological analysis of vegetation along an altitudinal gradient, GIS theme construction, layout design, map design and figure creation, assisting with biological methodologies, nitrogen pressure bombing, peromitry reading, measuring and weighing samples.

Publications / Presentations

- 2012   Knowles, J.T. CENTCOM/SOCOM Defense and Intelligence User Group Meeting August 13–14, 2012 Tampa, Florida. Advanced Geospatial Analysis Supporting DoD: LRA Case Study
- 2009   McCloskey, T.A., and Knowles, J.T. Migration of the Tropical Cyclone Zone throughout the Holocene. In Elsner, J.B., Jagger, T.H, (eds) Hurricanes and Climate Change, Springer, New York.
- 2007   Knowles, J.T., and Leitner, M. Visual Representations of the Spatial Relationship Between Bermuda High Strengths and Hurricane Tracks. Cartographic Perspectives 56: 16-30
- 2007   McCloskey, T. A., Knowles, J. T. "The ITCZ, the Bermuda High and Tropical Cyclones: Their Relationships over the Holocene" ", (Poster) 1st International Summit on Hurricanes and Climate Change, Heraklion, Greece.
- 2007   Ward, S. M., and Knowles, J.T. Spatial Modeling of Hillside Seepage Bogs: Ft. Polk, Louisiana. The 23rd Annual Louisiana Remote Sensing & GIS Workshop, Lafayette Louisiana
- 2006   Knowles, J.T. Visual representations of the spatial correlation between Bermuda High strengths and tropical cyclone tracks. Remote Sensing and GIS specialty group student illustrated paper competition. Association of American Geographers (AAG) Annual Meeting. Chicago, Illinois.
- 2006   Liu, K.B., Reese, C.A., Cochran, D.M, Knowles, J.T., and McCloskey, T.A. "Paleotempestology and cultural response to hurricane hazards among indigenous populations on the Mosquitia Coast of Eastern Honduras." Paper presented in the 102nd Annual Meeting of the Association of American Geographers, Chicago, March 7-11, 2006.
- 2004   Knowles, J.T. Coastal Lake-Sediment Records of Prehistoric Hurricane Strikes in Honduras and Turks and Caicos Islands of the Caribbean Basin. Thesis. Louisiana State University. Baton Rouge, LA.
- 2004   Liu, K.B., Knowles, J.T., and McCloskey, T.A. "Paleotempestological investigations in Central America and the Caribbean region". Paper presented at The 2004 RPI (Risk Preventative Initiative) Research Update Workshop, Bermuda Biological Station for Research, Bermuda, September 23, 2004.
- 2003   Knowles, J.T. Reconstructing past hurricane activities for Central America and the Caribbean from coastal lake sediment stratigraphies, Abstract. Association of American Geographers (AAG) 100th Annual Meeting. Philadelphia, Pennsylvania.
- 2003   Thompson, M. V., Palma, B., Knowles, J. T., and Holbrook, N. M. Multi-annual climate in Parque Nacional Pan de Azúcar, Atacama Desert, Chile. Revista Chilena de Historia Natural 76: 235-254.

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Certifications

- 2012-Present   Certified Geographic Information Systems Professional (GISP #23990). Geographic Information System Certification Institute (GISCI).
- 2016-Present   Small Unmanned Aircraft System (sUAS) Remote Pilot Certificate, Federal Aviation Administration (FAA) Code of Federal Regulations (14CFR) Part 107. Certificate number #3922858.

Skills Summary

- Project Management
- Business Development
- Online and Web Mapping
- GIS Administration
- GIS Needs Analysis & Strategic Implementation
- Enterprise GIS Design & Implementation

- Geospatial Intelligence Analysis
- 3D Modeling and Visualization
- Pattern & Predictive Analytics
- Complex Geospatial Modeling & Design

- Spatio-Temporal & Multi-Variate Analysis
- Cost Surface Modeling
- Remote Sensing (Air Photo and Satellite Imagery) Analysis
- Cartographic Visualization
- Field GPS Data Collection and Support

References: Available on request