

Curriculum Vitae: Dr. Cordula A. Robinson

Education/Employment History

Education

1987-1991 UNIVERSITY COLLEGE LONDON (Physics and Astronomy Department)
Awarded Ph.D. June 19th, 1991.
Thesis Title: The Crustal Dichotomy of Mars
Supervisor Professor JE Guest
Awards (1991) Harrie Massey prize for post-graduate research in physics and astronomy

1984-1987 DURHAM UNIVERSITY
BSc (Hons) Geology, Class 2I
Subsidiary subjects: chemistry, mathematics, and computing
Awards: Varsity Letters: Durham University, 1987

1978-1984 BRADFORD GIRLS' GRAMMAR SCHOOL
Seven O-levels (including French), three A-levels (Chemistry, Geography, Physics)
Awards: bursary on entrance

Employment History

Northeastern University: Jan 2007-Present

July 2013 – present: Lead faculty, Associate Professor. GIT masters, and GIS and remote sensing certificates. Proven leader and strategic thinker. Distinguished scientist and professor known for developing innovative interdisciplinary programs around geography to include geospatial, analytics, machine learning and AI.

Curriculum design; faculty recruitment and development; program development; integrated experiential learning and student advisement.

Current research: Develop spatial plans and strategies to recognize socio-economically stressed urban areas, and reveal resulting impacts, specifically urban decay. Key variables include aging buildings, vacancy rates, poverty, and unemployment. Create platforms for region-wide analysis using GeoMESA and GeoTrellis frameworks and derive ambient geographic sentiment via OSINT. Thus, construct measures of social fragility. Ocean phenomena, machine-learning and decision-trees – using known ocean phenomena, process-flow routines are examined to develop an approach to identify clear and unambiguous ocean phenomena (e.g., ships, groundwater discharge, natural gas) and facilitate spectral training in view of absolute atmospheric correction; 3D palaeotopography: visualizing the morphology and spatial distribution of the near-surface Saharan fluvial features; and 3D change detection: combining object based image analysis,

automated feature extraction, thermal imaging, HSI/MSI, RADAR to facilitate deep learning and detection outputs in conjunction with LiDAR; community resilience and embedding data and visualizations to identify disparities and inequities that make some communities more vulnerable.

- Work with AQA (CPS), USGIF (national) and NGA-USGS (national) accreditation teams to ensure continual program evaluation
- Advise approximately 10-15 master's students through their capstone research
- Teach approximately 6-8 courses a year

Notable Achievements:

- Faculty Advisory Council, Global Resilience Institute, 2017
- Faculty Affiliate, Global Resilience Institute (June, 2017); Kostas Research Center (November, 2017)
- Technical Adviser: Boston Municipal Courts Jurisdiction mapping project with Suffolk Law
- Earned NGA-USGS Center of Academic Excellence in Geospatial Sciences Designation, June-2015-2018
- USGIF accreditation: Sept 2014-2019
- Student(s) nomination for "Excellence in Teaching Award", February 2011; February 2015
- [Center of Excellence, PCI Geomatica Geospatial software, June, 2005-2013.](#)

PREVIOUS EXPERIENCE:

- **1996-Dec 2006:** Research Associate Professor, Center for Remote Sensing, Boston University, USA. Adjunct Professor, Geography Department, Boston University, and CPS, Northeastern University, USA.

Notable Achievements: PI of two NSF Grants (SW Egypt); Co-PI: Ministry of Water Resources, Sultanate of Oman; Sharjah Electricity and Water Resources, UAE; Techno Park, Dubai, UAE. Research focus: groundwater distributions arid and semi-arid lands

- **1995-1996:** Junior Scientist, DLR Berlin, Germany.
Preparations for Mars' 1996 mission. Classification capabilities of multispectral CCD data to minimize aircraft and satellite payloads; processing of Modular Optoelectric Multispectral Stereo Scanner over Great Sand Sea Egypt.

- **1994-1995:** Consultant, Boston University, USA.
Synthetic Aperture Radar (SAR) data analysis for MENA ground-water systems

- **1991-1994:** Postdoctoral, Harvard-Smithsonian Astrophysical Observatory, Cambridge, USA.

Notable Achievement: Asteroid, 2942: Cordie. Smithsonian Astrophysical Observatory, 1993. Analyzed Magellan SAR, emissivity and altimetry data of Venusian surface alongside colleagues at Jet Propulsion Laboratory and MIT. Research focused on surface electrical properties to develop a chronology of surface processes operating on Venus.

- **1987-1991:** Demonstrator Geology Dept. Lecturing Physics and Astronomy Dept, UCL, UK.

Ph.D. research to analyze Viking image and stereo data of the Martian surface.

- *Summer 1987*: Organic chemist, Ethyl Corp., Petroleum Additives Division, St. Louis MO, USA.

Scholarship/Research/Creative Activity

Publications

Refereed articles

1. Icarus Vol. 102, p. 26-39 (1992). **C.A. Robinson**, and J.A. Wood, Recent Volcanic Activity on Venus: Evidence from Radiothermal Emissivity Measurements.
2. Journal Geophysical Research (Planets) Vol. 100, No. E6. p. 11755-11763 (1995). **C.A. Robinson**, G.D. Thornhill and E.A. Parfitt, [Large-scale Volcanic Activity at Maat Mons: Can This Explain the Fluctuations in Atmospheric Chemistry Observed by Pioneer Venus?](#)
3. Earth, Moon, and Planets, Vol. 69, No. 3, p. 249-269 (1995). **C.A. Robinson**, [The Crustal Dichotomy of Mars.](#)
4. International Archives of Photogrammetry and Remote Sensing, Vol. 31, B4, Commission 4, p. 349-354 (1996). E. Hauber, J. Oberst, J. Flohrer, W. Zhang, I. Sebastian, **C. A. Robinson**, R. Jaumann and G. Neukum, [The High-Resolution Stereo Camera \(HRSC\) for Mars 96: Results of Outdoor Tests.](#)
5. Remote Sensing Journal of Egypt, Vol. 1, p. 25-56 (1998). **C.A. Robinson**, Potential and Applications of Radar Images in Egypt. (Requested paper).
6. Canadian Journal of Remote Sensing, Vol. 25, No. 3, p. 268-277 (1999). **C.A. Robinson**, F. El-Baz and V. Singhroy, [Subsurface Imaging by Radarsat: Comparison with Landsat TM Data and Implications to Ground Water in the Selima Area, Northwestern Sudan.](#)
7. Journal of Arid Environments, Vol. 44, p. 173-183 (2000). F. El-Baz, M. Mainguet and **C.A. Robinson**, [Fluvio-aeolian Dynamics in the North-eastern Sahara: Interrelation between Fluvial and Aeolian Systems and Implications to Ground Water.](#)
8. Photogrammetric Engineering & Remote Sensing (PE & RS), Vol. 66, No. 6, p. 745-753 (2000). **C.A. Robinson**, F. El-Baz, M. Ozdogan, M. Ledwith, D. Blanco, S. Oakley, and J. Inzana, [Use of Radar Data to Delineate Palaeodrainage Flow Directions in the Selima Sand Sheet, Eastern Sahara.](#)
9. Photogrammetric Engineering & Remote Sensing (PE & RS), Vol. 66, No. 6, p. 717-726 (2000). M.G. Abdelsalam, **C.A. Robinson**, F. El-Baz and R.J. Stern, [Applications of Orbital Imaging Radar for Geologic Studies in Arid Regions: The Saharan Testimony.](#)
10. Palaeoecology of Africa (Klaus Heine, editor), Vol. 27, p. 239-258 (2001). F. El-Baz, **C.A. Robinson**, M.M. Mainguet, M. Said, M. Nabih, I.H. Himida, H.A. El-El-Etr, [Distribution and morphology of palaeo-channels in southeastern Egypt and northwestern Sudan.](#)
11. International Journal of Remote Sensing, Vol. 23, No. 19, p. 4101-4113 (2002). **C.A. Robinson**, [Application of satellite radar data suggests that the Kharga Depression in Southwestern Egypt is a fractured rock aquifer.](#) (Requested paper).
12. Journal of Geological Society, Vol. 162, p. 871-888 (2005). T.M. Kusky, **C.A. Robinson** and F. El-Baz, [Tertiary-Quaternary Faulting and Uplift in the northern Oman Hajar Mountains.](#)

13. Journal of African Earth Sciences, Vol. 44, p. 229-240 (2006). **C.A. Robinson**, F. El-Baz, T.S.M. Al-Saud and S.B. Jeon, [Use of Radar Data to Delineate Palaeodrainage Leading into the Kufra Oasis in the Eastern Sahara](#).
14. Hydrogeology Journal, Vol. 15, p. 33-45 (2007). **C.A. Robinson**, A. Werwer, F. El-Baz, M. El-Shazly, T. Fritch and T. Kusky, [The Nubian Aquifer in Southwest Egypt](#), Requested paper, Vol. 15, Number 1. DOI 10.1007/s10040-006-0091-7.
15. Journal Arid Environments, Vol. 69, p. 676-694 (2007). **C.A. Robinson**, F. El-Baz, T. Kusky, M. Mainguet, F. Dumay, Z. Al Suleimani and A. Al Marjeby, [Role of Fluvial and Aeolian Processes in the Evolution and Origin of the Wahiba Sands: A Remote Sensing Perspective](#).
16. International Journal of Remote Sensing, Vol. 28, p. 1759-1772 (2007). E. Ghoneim, **C.A. Robinson** and F. El-Baz, [Radar Topography Data Reveal Drainage Relics in the Eastern Sahara](#).
17. Journal of Water Resource and Protection, Vol. 1, No. 4, Oct., *online* (2009). A. Shaban, **C.A. Robinson** and F. El-Baz, [Using MODIS Images and TRMM data to correlate rainfall peaks and water discharges from Lebanese coastal rivers](#), DOI:10.4236/jwarp.2009.14028.
18. Journal of Water Resource and Protection, Vol.8 No.10, Sept., *online* (2016). N. Nassif, L. Abou Jaoude, M. El-Hage, **C.A. Robinson**, Data Exploration and [Reconnaissance to Identify Ocean Phenomena: A Guide for In-Situ Data Collection](#) DOI: [10.4236/jwarp.2016.810076](#)
19. Journal of African Earth Sciences (2017). C.A. Robinson, H. El-Kaliouby and E. Ghoneim (2017), Special Issue Phanerozoic of Egypt, [Influence of structures on drainage patterns in the Tushka region, southwest Egypt](#). (Requested) DOI: <https://doi.org/10.1016/j.jafrearsci.2017.01.004>.
20. Journal of Hydrology (2018). M. El-Hage, C.A. Robinson, F. El-Baz, A. Shaban, Fracture-Controlled Groundwater Seeps into the Mediterranean Sea along the Coast of Lebanon, Under revision

Non-refereed articles (external only)

1. EOS Supplement, Oct. 26, 80, (1993). C.A. Stewart, M.R. Rampino and **C.A. Robinson**, Impact Shocks in the Transition Zone: Enough Energy to Trigger a Plume? Venus Coronae Linked to Missing Population of Large Venus Impact Craters?
2. Astronomy Magazine, February issue, p. 32-41 (1995). **C.A. Robinson**, The Magellan Mission to Venus.
3. Bulletin of the American Astronomical Society, Vol. 27, No. 3, 1153 (1995). E. Hauber, J. Oberst, J. Flohrer, V. Mertens, A. Zaglauer, M. Weiss, W. Schrieder, **C. A. Robinson**, W. Zhang, I. Sebastian, R. Jaumann, and G. Neukum, High-Resolution Stereo Camera Outdoor Tests: Verification of Geometric and Radiometric Accuracy.
4. Phase A1 Study, Adlex Experiment, Annex 3, 1-13 (1995). H. Hoffmann, **C. A. Robinson** and F. Trauthan, A Study of the Early Utilization of the Russian Modules on the International Space Station for Earth Observations.
5. Journal Annales Geophysicae, Supplement V14. (1996). **C.A. Robinson**, G. Neukum and G.G. Ori. Cratering Age Analysis for Ares Vallis, Mars: Implications for its Sedimentary History.

6. Bulletin of the Astronomical Society, Vol. 29, No. 3, 971 (1997). **C.A. Robinson**, F. El-Baz and K.C. Seto, [The Role of the Image Processor in Planetary Instrument Definition](#).
7. Bulletin of the American Astronomical Society, Vol. 33, 1055 (2001). N. G. Barlow, T. Farr, V. R. Baker, N. Bridges, F. Carsey, N. Duxbury, M. S. Gilmore, J. R. Green, E. Grin, V. Hansen, L. Keszthelyi, P. Lanagan, R. Lentz, L. Marinangeli, P. A. Morris, G. G. Ori, P. Paillou, **C. Robinson**, and B. Thomson. [Community Decadal Panel for Terrestrial Analogs to Mars](#).
8. Water and Waste Water International, Jan. (2006). **C.A. Robinson**, F. El-Baz and M. Mainguet, Water: Quality and Quantity.
9. [Arab Water World](#), Arab Water World, September (2006). **C.A. Robinson** and F. El-Baz, Future Initiatives in Desalination Research, p. 98
10. SPIE Newsroom, Remote Sensing, February (2007). **C.A. Robinson** [Radar Data Contributes to Groundwater Exploration in the Eastern Sahara](#).
11. State of GEOINT Report, Published by The United States Geospatial Intelligence Foundation © Copyright 2015 p. 1-32 (2015), [State of GEOINT](#), Overall contributor Specific: Robinson, C. A., Flewelling, D. (2015). Human-centric Data Immersion. *State of GeoINT Report, 2015* (pp. 1-32). U.S. Geospatial Intelligence Foundation. http://usgif.org/system/uploads/3661/original/SOG_FINAL.pdf
12. State of GEOINT Report, Published by The United States Geospatial Intelligence Foundation © Copyright 2016 p. 1-52 (2016), [State of GEOINT](#), Overall contributor
13. State of GEOINT Report, Published by The United States Geospatial Intelligence Foundation © Copyright 2017, p. 1-48 (2017), [State and Future of GEOINT](#)
 - a. Specifics papers: Taming the Tedious, Overcoming the Challenging, and Simply Improving Our Daily Lives: A View of Deep Learning, By Peter Hanson; Todd M. Bacastow; **Cordula A. Robinson, Ph.D.**; Barry Tilton; Robert Albritton; David Foster; and Daniel Bonnel, p. 4-6
 - b. Geodata Analytics-as-a-Service, By Ben Conklin; Barry Tilton; Kevin Hyers; and **Cordula A. Robinson, Ph.D.**, p. 7-8
14. State of GEOINT Report, Published by The United States Geospatial Intelligence Foundation © Copyright 2018 (2018), *Under revision: An Orchestra of Machine Intelligence*, By M. Sarojak, C.A. Robinson, C.W. Gruber, D.B. Kepner, T. Rex, D. Feldman

Book chapters

1. *In: The Future of Solar System Exploration 2003-2013, Terrestrial Analogs to Mars* (2002). [Community Contributions to the NRC Solar System Exploration Decadal Survey](#). Edited by: Mark V. Sykes, p. 35-76, pp. 433. Published by: The Astronomical Society of the Pacific, ASP Conference Series, Vol. CS-272.
2. *In: [Plates, Plumes and Paradigms](#)*, edited by: G.R. Foulger, J.H. Natland, D.C. Presnall and D.L. Anderson, GSA Special Paper 388, p. 815-824, pp. 861. (2005). C. Vita-Finzi, R. J. Howarth, S. Tapper and **C.A. Robinson**, Venusian Craters and the Origin of Coronae.
3. *In: [Remote Sensing in Archaeology](#)*, Eds J. Wiseman and F. El-Baz, p. 47-70, pp. 1-554 (2007). F. El-Baz, **C.A. Robinson** and T.S.M. Al-Saud, Radar Images and

Geoarchaeology of the eastern Sahara. Publisher: Springer Science and Business Media, LLC.

Contributor (book)

1. *Digital Image Processing Contributor* to [Atlas of the State of Kuwait from Satellite Images](#). F. El-Baz and M. Al-Sarawi, editors (2000). Kuwait Foundation for the Advancement of Sciences, Safat, Kuwait. ISBN 99906-30-00-3, pp. 1-145.
2. *Definition Contributor* to [Dictionary of Geophysics, Astrophysics, and Astronomy](#), Richard A. Matzner, editor (2001). CRC Press, Boca Raton, pp. 1-526.
3. *Digital Image Processing Contributor* to [Wadis of Oman, Satellite Image Atlas](#). F. El-Baz, editor (2002). Sultanate of Oman, Office of the Advisor to His Majesty the Sultan for Cultural Affairs, pp. 1-281.

Conference Proceedings

External

Presenter unless otherwise indicated

1. LPI Tech. Report No. 90-04, 48-49, 1990. **C.A. Robinson**, Water and Evolving Magma Bodies on Mars.
2. LPSC XXI, 1025-1026, 1990. **C.A. Robinson**, The Highland-lowland Boundary Formed on Mars Between the Late Noachian and Early Hesperian.
3. LPSC XXIII, 1163-1164, 1992. **C.A. Robinson** and J.A. Wood, [Recent Volcanic Activity on Venus: Evidence from Emissivity Measurements](#).
4. LPSC XXIV, 1205-1206, 1993. **C.A. Robinson**, [Subduction on the Margins of Coronae on Venus: Evidence from Radiothermal Emissivity Measurements](#).
5. LPSC XXV, 1137-1138, 1994. **C.A. Robinson**, The Weathering Process on Venus Takes 2-3 Hundred Million Years: Evidence From Radiothermal Emissivity Signatures at Coronae.
6. LPSC XXV, 1139-1140, 1994. **C.A. Robinson** and G.D. Thornhill, [SO₂ and CH₄ Levels in the Venusian Atmosphere, Measured by Pioneer Venus: Caused by Plinian-style Volcanic Activity at Maat Mons?](#)
7. Vernadsky-Brown Microsymposium, Moscow, October 9-11 (1995). **C.A. Robinson**, H. Hoffmann, A.S. Cook and G. Neukum, Crater Count Results and Digital Terrain Models for Ares Vallis, Mars.
8. LPSC XXVII, 1081-1082 (1996). **C.A. Robinson**, A.C. Cook and W. Zeitler, [Semi-automated Extraction of DEMs for Studies of Ares Vallis Using Viking Orbiter Imagery](#).
9. LPSC XXVII, 1083-1084 (1996). **C.A. Robinson**, G. Neukum, A. Marchenko, A.T. Basilevsky and G.G. Ori. [A Suggested Geological Development for Ares Vallis, Mars](#).
10. International Geological Correlations Program (IGCP), Project 391, ROSTAS/UNESCO, 37-39 (1996). **C.A. Robinson**, F. El-Baz and K.C. Seto, Imaging Radar (SIR-C) Data of the Eastern Sahara.
11. International Geological Correlations Program (IGCP), Project 391, ROSTAS/UNESCO (1996). **R.E. Morency*** and **C.A. Robinson**, Desert Pavement as an Indicator of Ground-

water Accumulation: Evidence from Multispectral Landsat and SIR-C Radar Data.

*presenter

12. Geomatics in the Era of Radarsat, 5-6 (1997). **C.A. Robinson** and F. El-Baz, A Lake Beneath the Selima Sand Sheet, Southwest Egypt: Evidence from Radarsat Data.
13. Proc. of the 12th International Conference Applied Geologic Remote Sensing, Volume I, 469-476 (1997). F. El-Baz* and C.A. Robinson, Inferences of Palaeotopography from Palaeochannels Revealed by SIR-C Data in the Western Desert of Egypt: Implications to Sand Dune Accumulation. *presenter
14. Proc. of the 12th International Conference Applied Geologic Remote Sensing, Volume I, 93-100 (1997). K.C. Seto*, **C.A. Robinson** and F. El-Baz (1997). Digital Image Processing of Landsat and SIR-C Data to Emphasize Drainage Patterns in Southwestern Egypt. *presenter
15. IGARSS, Seattle, Washington, 6-10 July, CD ISBN: 0-7803-4406-5, Paper # C0607.pdf, 1998. K.M. Bergen*, **C.A. Robinson**, R. DeRoo, L.E. Pierce, SIR-C Analysis of Desert Sabkha. *presenter
16. Radarsat ADRO Symposium, Montreal, Canada, October, 41 (1998). **C.A. Robinson** and F. El-Baz, Radarsat Images of the Eastern Sahara: Implications for Ground-water Resources.
17. Radarsat ADRO Symposium, Montreal, Canada, October, 242-243 (1998). J. Wiseman, **C.A. Robinson** and C. Stein, Archaeological Applications of Radar Imagery in Northwestern Greece.
18. GSA Annual Meeting, October 26-29, Vol. 30, No. 7.A-237 (1998). T. Kusky*, **C.A. Robinson**, F. El-Baz, P. Considine, D. Blanco, M. Ledwith and M. Ozdogan, Tertiary and Quaternary Faulting in the Northern Oman Mountains. *presenter
19. GSA Annual Meeting, October 26-29, Vol. 30, No. 7. A-288 (1998). **C. A. Robinson** and T. Kusky, Tertiary Sinistral Movement along the Maradi Fault, Oman: Evidence from SIR-C Radar Data.
20. Proc. of the 13th International Conference Applied Geologic Remote Sensing, Volume II, 381-386 (1999). **C.A. Robinson**, T. Kusky, F. El-Baz and H. El-Etr, Using Radar Data to Assess Structural Controls from Variable Channel Morphology: Examples from the Eastern Sahara.
21. Proc. of the 13th International Conference Applied Geologic Remote Sensing, Volume II, 405-410 (1999). **C.A. Robinson**, M. Mainguet and F. El-Baz, Channel Morphologies Observed in Radar Data: Implications for the Development of the Selima Sand Sheet.
22. Proc. of the 13th International Conference Applied Geologic Remote Sensing Volume II, 397-403 (1999). L.W. Fielding* and **C.A. Robinson**, Application of Integrated Directional Filtering (IDF) to Radar Data for Drainage and Structure Identification. *presenter
23. EOS Transactions, AGU Spring Meeting, April 27th, Vol. 80, No. 17, S213 (1999). **C.A. Robinson** and F. El-Baz, Relationships between Fluvial Features, Topographic Depressions and Sand Accumulations: Implications for Groundwater Reserves on Earth and Permafrost in the North Polar Region of Mars.
24. GSA Annual Meeting, October 25-28, Vol. 31, No. 7, A-176 (1999). **C.A. Robinson** and T. Kusky, Results of Structural Mapping Using Radarsat Data Obtained for the Sleetmute and Medfra Areas, Alaska.

25. GSA Annual Meeting, November 1-10, Vol. 33, No. 6, A-320 (2001). **C.A. Robinson**, [Sinistral movement along the Maradi Fault, Oman: Evidence from SIR-C radar data.](#)
26. LPSC XXXV, Abs 1564 (2004). C. Vita-Finzi*, R.J. Howarth, S. Tapper and **C.A. Robinson**, [Venusian Craters and the origin of coronae.](#) *presenter
27. 32nd, International Geological Congress, Florence, August 27 (2004). **C.A. Robinson**, F. El-Baz and M. Manguet*, The development of the Wahiba Sands, northeastern Oman: A remote sensing perspective. *presenter
28. IGARSS, South Korea, July 25th (2005). **C.A. Robinson**, F. El-Baz, S. Jeon* and M. Manguet, Role of fluvial and aeolian processes in the evolution and origin of the Wahiba Sands. *presenter
29. Geological Society of America, Salt Lake City, October 16th, paper No. 44-1 (2005). C.A. Robinson, A. Buynevich, F. El-Baz and A. Shaban, [Integrative Remote Sensing Techniques to Detect Coastal Fresh-Water Seeps.](#)
30. 8th International Conference on the Geology of The Arab World, February 13-16, p. 42 (2006). **C.A. Robinson**, A. Werwer, M. El-Shazly, F. El-Baz, A. Buynevich, T. Kusky, Effects of Fluvial and Structural Controls on the Nubian Aquifer System in SW Egypt (Western Desert).
31. 6th International Conference on the Geology of the Middle East, March 20th-23rd (2006). Shaban, A.*, **Robinson, C.A.**, El-Baz, F. and Al-Sulaimani, Z., Using thermal imagery to identify water seeps into the sea: a comparative analysis to Lebanon and the Omani Gulf-Arabian Sea coasts. *presenter
32. GSA Annual Meeting Abstracts with Programs, Vol. 38, No. 7, p. 564, October 22-25 Paper No. 223-8 (2006). **C. A. Robinson**, A. Werwer, F. El-Baz, M. El-Shazly, E. Ghoneim and H. El-Kaliouby. [Remote sensing to support a better hydrogeological understanding of the Nubian Aquifer systems in the Western Desert of Egypt.](#)
33. Space Tools and Solutions for Monitoring the Atmosphere in Support of Sustainable Development”, Graz, Austria, 11-14 September (2007). A. Shaban, **C.A. Robinson** and F. El-Baz, Using TRMM and MODIS space tools to monitor precipitation versus water flow from the Lebanese coastal rivers. *presenter
34. GSA Annual Meeting Abstracts with Programs, October 28-31, Denver, Paper No. 97-10 (2007). **C. A. Robinson**, H. El-Kaliouby, S. Hanafy, B. Nabawy and E. Ghoneim. [Influence of Structures on Drainage Patterns in the Tushka Region, SW Egypt.](#)

Presentations only, since 2013 (no proceedings)

1. Synopsis “State of GEOINT what’s HOT, what’s NOT, and what’s on the HORIZON”, Oral presentation, Hyatt Dulles, USGIF Symposium, October (2014).
2. White, E., Robinson, C. A., Gale, J. Poster, "Automated Feature Extraction Techniques to Identify Flood Extent in Minot, North Dakota", ENVI Analytics Symposium, Exelis, Boulder Colorado, Conference, Non-Academic, August (2015). *Student Presenter
3. Gale, J.*, Robinson, C. A., Jackson, R. Poster, "Enhanced Situational Awareness for C4ISR: Automated Feature Extraction from Full Motion Video", Intelligence Community Academic Research Symposium, ICARS, NGA, National Academy of Sciences, Washington DC. September (2015). *presenter
4. Robinson, C. A., Kluckhuhn, C., Jackson, R., Podium Presentation (2015), "[Enabling Faster Delivery of GEOINT: Situational Awareness Via Secure Data Links, Examples](#)

[from the Boston Marathon 2015](#)", GEOINT Foreword Lightning Talks, USGIF's GEOINT Symposium.

5. C.A. Robinson, M. El-Hage, F. El-Baz and E. Beighley (2016). Poster. "Geospatial Innovation and Water Security: The Coastal MENA Region", *2nd Annual Intelligence Community Academic Research Symposium* 20-23rd Sept, Keck Center.
6. M. El-Hage*, C.A. Robinson, F. El-Baz (2016). "Geospatial Innovation and Water Security: The Coastal MENA Region". Symposium on offshore springs 7th -- 8th November 2016 Quryat Muscat Governorate, Sultanate of Oman. *presenter
7. H. El-Kaliouby*, C.A. Robinson and E. Ghoneim, (2016). Integration of Remote Sensing and Geophysics for groundwater exploration in Tushka area, Egypt, ISNET/NARSS Workshop on SAR remote sensing and Ground-penetration Radar, 27 Nov-01 Dec 2016; Cairo, Egypt. *presenter
8. C.A. Robinson (2017). Interactive Short Paper, "*Geographic Information Technology Masters Capstone Project: Northeastern University*", AAG Abstract [82889], 2017 Annual Meeting, Boston, Massachusetts
9. C.A. Robinson, P. McRoberts, T. Barr (2018). Interactive Short Paper, "Quantitative and Qualitative Approaches to Measure Urban Resiliency", Accepted AAG Abstract, NGA-ORNL session 2018 Annual Meeting, New Orleans, Louisiana

Internal

Presentations only, since 2013

1. 6th Annual Homeland Defense and Security Education Summit, September 26-28th, (2013). C.A. Robinson, "Geospatial Intelligence: What it is and how it is useful"
2. CPS Talks Faculty Development Day, Northeastern University, October 2nd (2015). Robinson, Podium Presentation, "[From Space to Earth: Enabling faster delivery of GEOINT](#)", @18mins
3. C.A. Robinson (2016). CPS Doctoral Hooding Ceremony, Faculty Speaker.
4. C.A. Robinson, M. El-Hage and F. El-Baz (2016) Poster Presentation. "Geospatial Innovation and Water Security: The Coastal MENA Region" CPS Faculty Fall Conference
5. C.A. Robinson (2017). [Multidisciplinary Geospatial for Resilience Analysis](#) Flash talk, New Alumni Center, NU

Other, since 2013

Panels

External

1. Access to Justice conference, MCLE, Boston, November 20th (2017)
2. NE-GIS, Thursday, April 27 (2017). Beyond the Classroom: Planning Your GIS Career. Warren Conference Center, Ashland MA. Moderator: Adena Schutzberg, Esri.

3. Foreword Event USGIF Symposium, June 4th (2017). Panel Discussion – [What we learned today about the changing analytical landscape](#). Moderator Dr. Chris Tucker, Yale House Ventures; Panelists: Patrick Biltgen, Vencore; Sue Salweit, Director of Analysis, NGA; Adam Maher, Ursa Space Systems; Cordula Robinson, Northeastern University; Amanda Ziemann, Los Alamos National Labs.

Internal

1. NU Panel, Career Development and Promotion, fall orientation for new full-time, nontenure-track faculty members. First offering, held Wednesday, September 2, 2015, Alumni Center.

Internal Blogs

1. C.A. Robinson (2013) [Geospatial-Intelligence: Why Should We Care?](#) College of Professional Studies, Northeastern University, New and Events, August 3rd, 2013.
2. C.A. Robinson (2014) [5 In-demand careers in Geographical Information Technology](#). College of Professional Studies, Northeastern University, New and Events, June 18th, 2014.
3. C.A. Robinson (2014) [3 Ways Geographical Information Technology Benefits the Intelligence Field](#). College of Professional Studies, Northeastern University, New and Events, June 25th, 2014.
4. C.A. Robinson (2014) [The 3 Biggest Issues in Geographical Information Technology Right Now](#), College of Professional Studies, Northeastern University, New and Events, June 25th, 2014.

News

1. USGIF News, October 8th (2014) [Northeastern University Achieves USGIF Academic Accreditation](#)
2. Trajectory Magazine, November (2015). [A Non-traditional education](#)
3. Newspaper, NGA Media Room, June 8 (2015). [Academic Institutions Selected for Centers of Academic Excellence in Geospatial Sciences Program](#)
4. Northeastern News, July 25th (2016) by Thea Singer. [Researchers Mine Tsunami of Free Data from Space](#)
5. Northeastern News, August 29th (2016) by Jason Kornwitz. [3Qs: Discovery of Earth-like Planet Suggests we “Might not be Alone”](#)

Internal Workshops

1. Organized and hosted a “Geospatial Technologies for GeoIntelligence Solutions Seminar, August 14, 2013”. Attendees: Dr. Max Baber USGIF; Terry Martin, ESRI; Brian Farr, ESRI Analytics; Kevin Jones, PCI Geomatica and Joe Guay CPS, NU.
2. Hosted NGA and USGS Site Visit. Monday, June 27th, 2016, Egan Research Center. Presenters: David Luzzi (Kostas), Chris Mallet (OEL), Cordula Robinson (CPS), Lenora Gant (NGA) and David Brostuen (USGS). Created 10-minute webinars from the NGA and USGS about our program, career outlooks and more

- a) Dr. Lenora Peters Gant of the NGA and Dr. Cordula Robinson
https://nuonline.mediaspace.kaltura.com/media/Cordula+Robinson+and+Dr.+Lenora+Peters+Gant/1_6morinkb
- b) David Brostuen of the USGS and Dr. Cordula Robinson
https://nuonline.mediaspace.kaltura.com/media/Cordula+Robinson+and+David+Bros-tuen/1_jb7y4ujq

Grants

External

1. National Environmental Research Council (NERC) Ph.D. grant, 1987-1990. UCL. Full-time
2. University College London supporting Ph.D. fund, half year, 1991. UCL. Fulltime
3. Venus Data Analysis program: A Study of the Electrical Properties and Mineralogy of the Surface of Venus, 1991-4. CoI. Harvard_Smithsonian Center for Astrophysics. Fulltime; Supervisor Dr. John A Wood (NAS)
4. DARA: Mars 1996 HRSC Airplane Experiment over Etna, 1996. CoI. DLR, Berlin Germany; Part-time; Supervisor Dr G. Neukum
5. USGS Venture Capital Fund: Synthetic Aperture Radar as an aid to Reconnaissance Geologic Mapping in Alaska, 1998. CoI, \$10k. Boston University. PI Dr T. Kusky
6. Boston University-Omani Ministry of Water Resource proposal: "Utilizing Satellite Images for Groundwater Exploration in the Sultanate of Oman," 1996-2000. CoI. Boston University. Fulltime. PI Farouk El-Baz
7. Boston University-U.A.E. project: "Use of Space Images for Groundwater Exploration in the Northern United Arab Emirates," June 2001 – June 2005. Project funded by the "Sharjah Electricity and Water Authority" (SEWA). CoI, Boston University. Fulltime, PI Farouk El-Baz
8. Ports, Customs and Free Zone (PCFZ) Corporation Project, Advising the PCFZ regarding the Dubai Technology Park and environmental change remote sensing studies of Dubai. February 2004-February 2007. CoI Boston University. Fulltime, PI Farouk El-Baz
9. NSF S&T fund, U.S.-Egypt Joint Board. "Near-surface drainage within a groundwater basin in southwest Egypt using radar images". Sept 2004-Sept-2006. PI, Boston University.
10. NSF S&T fund, U.S.-Egypt Joint Board. "Influence of structures on drainage patterns in the Tushka region, southwest Egypt", Sept 2005-Sept 2008. PI. Boston University.
11. SOAR (Science and Operational Applications Research for Radarsat-2). "Radarsat-2 multi-polarization data for groundwater exploration, Darfur, Sudan." May 2006-2010. PI, Boston University. Data only.
12. DRU (Radarsat-1 Data for Research Use Canadian Space Agency). "Using Radarsat-1 SAR Data to detect and monitor the Jieh Oil Spill off the Lebanese Coast." October 2006-October 2007. CoI. Boston University. Data only.
13. "Desertification in Saudi Arabia: studying the phenomena and its remediation" project to King Abdulaziz University, Jeddah, KSA, Civil Engineering Department, 2007-2008. Consultant. Boston University.

14. Workshop Committee: US-Egypt Workshop on Supercomputing Apps in Climate Sciences and Remote Sensing, NSF, 2007-2009. Consultant. Boston University
15. Jan 2007-2015: Education Alliance agreement with PCI Geomatica contributed to the software options available to students and CPS goals for fundraising and development, estimated at \$832,500.
16. USGIF Self-Study, USGIF accreditation. Approved and effective September 1st, 2014 - 2019. PI. Northeastern University. *Ongoing*
17. NGA-USGS Geospatial Center of Excellence proposal. Approved and effective: June 2015-2018. PI. Northeastern University. *Ongoing*
18. Response Title: The USAID ME Water Security BAA; BAA Addendum Name/Number: BAA- MWSI-ME-2015, September (2015) “Geospatial Innovation to Create a Groundwater Potentiality Map for the MENA Region (Lebanon, Jordan, Morocco and coastal Egypt) and Guide Sustainable Practices to Secure Water for Food” CoPI
**Unsuccessful*. Northeastern University
19. Response Title: The USAID Securing Water for Food's 4th Global Call for Innovations, October (2016). “Geospatial Innovation to Identify Groundwater Potentiality Zones Linked with Irrigation Systems for the MENA Region: Securing Water for Food” CoPI
**Unsuccessful*. Northeastern University
20. RFI October (2017). “Developing Algorithms on Geospatial Data” National Geospatial-Intelligence Agency

Internal

1. CenSSIS Homeland Security (Northeastern) - The Center for Subsurface Sensing and Imaging Systems -Advanced Location of Explosive-Related Threats, March 2007. Contributor
2. CATs Fund Feb, #238075 March 24th (2015). USGIF symposium travel and support lightning talk at GEOINT Foreword and “Crisis Mapping for Humanitarian Action: Applications of New Information Communication Technologies” training and education session. PI, \$5k
3. Faculty Fund, February 29th (2016). “Geospatial Innovation to Create a Groundwater Potentiality Map for the MENA Region (Lebanon, Jordan, Morocco, West Bank and coastal Egypt) and Guide Sustainable Practices to Secure Water for Food” Fulbright, exchange trip to Beirut, Lebanon. PI, \$2,615.
4. Faculty Fund, January 4th (2017). “Large-scale GIT Initiative” to support of work for Dr Max Baber to assist in program redesign, rebrand and dissemination. PI, \$10,49

Teaching and Advising

Courses

Curriculum leadership initiatives since 2013:

1. USGIF Accreditation, Sept 2014- Sept 2019
2. NGA-USGS Geospatial Center of Academic Excellence, June 2015- June 2018

3. Master's Program Curriculum Rebrand and Name Change (2017-present). Primary author of program name change to Geospatial services, Geospatial Analytics concentration proposal, in effect.
4. Master Teacher: GIS5101 (Introduction to GIS); GIS5102 (Fundamentals of GIS Analysis); RMS5105 (Fundamentals of Remote Sensing); Designed and developed all aspects of the course, material creation, implementation and best practices. For six other classes (RMS6250 (Remote Sensing of Vegetation); RMS6215: Unmanned Aerial Systems for Geospatial Analysts; RMS6280: Automated Feature Extraction for the Geospatial Professional; RMS6240 Introduction to RADAR and LiDAR; GIS6394 Crisis Mapping for Humanitarian Action; GIS6320 Use and Applications of Free and Open-Source GIS Desktop Software; and GIS6395 Geospatial Analysis of Crime), my role as a teacher is to mentor to new instructors; help with design course curriculum; developing activities, signature assignments and rubrics; enhance instructional quality of the courses, and share best practices.

Teaching

2013-PRESENT Virtual Campus Only

Student(s) nomination for "Excellence in Teaching Award", 2014. (February 9, 2015.).

*Owing to rapid development in field, instances that required a course rewrite are noted

Course #	Course Name	Quarter Year
RMS6110	Digital Image Processing	Spring 2017
GIS6980	Capstone	Winter 2017
GIS5101	Introduction to GIS	Winter 2017
RMS6110	Digital Image Processing	Fall 2016
RMS5105	Fundamentals of Remote Sensing	Fall 2016
GIS6980	Capstone	Fall 2016
RMS6110	Digital Image Processing	Spring 2016
RMS5105	Fundamentals of Remote Sensing	Spring 2016
RMS6270	Remote Sensing for Disaster Management	Winter 2016
GIS5101	Introduction to GIS	Winter 2016
GIS6980	Capstone	Winter 2016
RMS6110	Digital Image Processing	Fall 2015
GIS6980	Capstone	Fall 2015
GIS5101	Introduction to GIS	Summer 2015
RMS5105	Fundamentals of Remote Sensing (<i>undergrad version</i>)	Spring 2015
RMS5105	Fundamentals of Remote Sensing (<i>grad version</i>)	Spring 2015
RMS6110	Digital Image Processing	Spring 2015
GIS6980	Capstone	Winter 2015
GIS5101	Introduction to GIS	Winter 2015
GIS5102	Fundamentals of GIS Analysis	Winter 2015
GIS5978	Independent Study	Winter 2015
RMS6110	Digital Image Processing	Fall 2014
RMS5105	Fundamentals of Remote Sensing	Fall 2014

RMS6110	Digital Image Processing	Spring 2014
RMS5105	Fundamentals of Remote Sensing	Spring 2014
GIS5101	Introduction to GIS (G / UG)	Winter 2014
GIS5102	Fundamentals of GIS Analysis (G / UG)	Winter 2014
RMS6250	Remote Sensing of Vegetation	Fall 2013
RMS6110	Digital Image Processing	Fall 2013
RMS5105	Fundamentals of Remote Sensing (G/ UG)	Fall 2013
RMS6110	Digital Image Processing	Spring 2013
RMS5105	Fundamentals of Remote Sensing (G / UG)	Spring 2013
GIS5101	Introduction to GIS (G / UG)	Winter 2013
GIS5102	Fundamentals of GIS Analysis (G / UG)	Winter 2013

*prior classes included remote sensing of vegetation; Physical Geography; RADAR remote sensing; Planetary Geology with geomorphology; Structural Geology

*upcoming: Remote Sensing of Archaeology; Automated Feature Extraction for the Geospatial Professional

Advising

Fulbright Scholars

1. July 2014-February 2015, Professor Nadine Nassif, Beirut Lebanon. “Marine pollution and legal protection of the Mediterranean: The DNA provided by Remote Sensing and GIS”
2. August 2015 - October 2015, Professor Mhamad El-Hage, Tripoli Lebanon. “Geospatial Innovation and Water Security: The Coastal MENA Region”.

Master’s Capstones

Winter 2015

1. Stan Bosarge (USGIF Student Assistant): Underwater Remote Sensing and the Fisheries-Independent Ecosystem Survey: Examining Spatial Relationships of Red Snapper and Reef Habitat off Coastal Alabama. [USGIF Academic Research Award, 2015](#)
2. Kevin Boyle: Boston Massachusetts Fatal Accident Analysis, 2001 - 2012
3. Chris Nowak: Breaking and Entering in Bothell, Washington, 2006-2015

Fall 2015

1. Amin Al-Hassan (USGIF Student Assistant): Web application for Monitoring Polling Station Corruption, Tamale Metro, Ghana
2. Robert Ashley: Joint Land Use Study Fort Gordon, Georgia
3. Devin Johnson: Burn Severity Analysis of the Carpenter Road Wildfire, Washington State
4. Azucena Krobatsch: Bell County Initiative, Texas
5. Kevin Murphy: Integrative Geospatial (weather, vegetation, terrain) for Wildfire Risk Map Creation, California
6. Kelsey Reid: Analysis of Crime on the New York City Campus

7. Britta Sherman: Data Correlations to Determine how Deforestation in the Amazon Impacts Local Communities Growing Crops
8. Lou Walker: Have the Demographics of the Fenway Neighborhood, Boston MA, changed due to Institutional Expansion?

Winter 2016

1. Rachael Brady: Identifying Serial Arson Behavior Geospatially, CA
2. Casey Erickson: Impact of Drought on Agricultural Farming in the San Joaquin Valley, California
3. Brian Guarante: 2015 Nepal Earthquake: The Influence of Terrain on Population
4. Juie Muly: Spatial Analysis of Lead Contamination, Flint, Michigan,
5. Holly O'Brien: Interactive Mapping Comes to Bangor, Maine Traffic Application Available to Commuters

Fall 2016

1. Dustin Christensen: GIS for Response and Planning
2. Payden McRoberts (USGIF student assistant): Creating Clearfield Small Area Plans: A Data-driven Approach to Neighborhood Planning

Winter 2017

1. Angelo Cacciatore: 30 Year Study Graying population in the Continental US (Population aged 65 or older); Also XN CPS Experiential Excellence Award
2. Michael Gale: Sea Level Rise Impact on the Town of Ipswich, Massachusetts
3. Madison Gribbon: Risk Terrain Mapping of Crime in the Nation's Capital: Washington, D.C (USGIF student assistant, **second-place USGIF student poster competition**)
4. Fran Hutton Lee: [Bookmapping](#) (NU News, Meet the Graduates)
5. Colin Johnson: Building Change Detection from LiDAR Point Clouds (USGIF student assistant, **first-place USGIF student poster competition**)
6. Geoff Ricciardelli: Drug Crime in Harford CT (USGIF student assistant)

Students before Northeastern (undergraduates noted)

1. Asmin Pathare, Harvard University (1992). Senior thesis (undergraduate): Reflections on Venus: A study of the emissivity-altitude relationship of Maxwell Montes using data from Magellan. June 1995.
2. Cynthia Phillips, Harvard University (1995). Senior thesis (undergraduate): Anomalous Low-Emissivity Impact-related Parabolas on the surface of Venus. June 1995.
3. Susie Brown, Harvard University (1995). Senior thesis (undergraduate): An examination of Geological Features of Imdr Regio Based on Magellan SAR data.
4. Irina Harris (Ph.D. student), Boston University (2000). Directed Study: The radar image interpretation of the terrain features within the Black Lands Area, Kalmykia, Russia.
5. Students under my supervision in Oman Ministry of Water Resource Project, Boston University (1996-2000): Daniel Blanco, Mutlu Ozdogan, Jennifer Inzana and Susan Oakley. I provided advice on remote sensing and GIS techniques throughout the duration of the project. *Paper #8 published
6. Artem Buynevich (Masters Student), Boston University (2003). Directed Study: Using Remotely Sensed Data as a Road Mapping Tool.

Research Assistants

1. Student research assistants for UAE SEWA project (2003): Irina Harris (Ph.D. student), Artem Buynovich (Masters Student), Katie Swanson (Masters Student). SEWA Project.
2. Student research assistants in the UAE PCFZ project (2004-2005): Sung Bae Jeon (Ph.D. candidate).

Service and Professional Development

Service, 2013 – present

Department

1. **Program Admin 2013-present**, Geospatial Program Faculty Lead: Manage and lead 11 part-time instructors. Ensure curriculum content and design meets NEASC, USGIF and NGA standards via mapping of student competencies. Faculty recruitment and development, hiring faculty with appropriate expertise. Weekly GIT progress meetings with program directors; monthly meetings with GIT program manager and adviser; monthly meetings with AQA; monthly staff meetings.
Ongoing Other program administration on an as-needs basis including secondary application reviews; Support marketing team; Support members of the enrollment management team (Inside Tract) in development of the new executive search recruitment model
2. **Accreditation compliance** Three governing bodies NEASC / AQA; USGIF and NGA-USGS.
 - AQA: Lead the AQA efforts for the GIT program. Apply standards as established by the college-wide program evaluation; program-specific evaluation; professional development aligned with geospatial trends. Participate in continuous improvement plans, including systematic data collection and analysis.
 - USGIF, 196pp: *September 2014 - August 2019*. Initiated, led and completed USGIF accreditation self-study report and accreditation for the period fall 2014- Fall 2019. GIT is one of 12 accredited academic programs. Accreditation is designed to ensure a robust geospatial workforce.
 - NGA-USGS, 49pp (plus supporting material): *June 2015 - May 2018*. One of 17 new academic programs selected for the Centers for Academic Excellence in Geospatial Sciences. Demonstrate how GIT curriculum maps to the Center of Academic Excellence Knowledge Units (KUs) Conducted organizational self-study and curriculum mapping using prior-learning assessments and knowledge units to attain designation.
3. **Public / Private Partnerships, 2013-present** Formalize public and private partnerships in conjunction with XN and/or Ellen Stoddard's team.
4. **Alumni Map 2015-present** Co-created an alumni map for data collection and prospective student viewing. Students populate upon graduation for real-time updates using: <http://arcg.is/111eXrP> . Resultant map with popups: <http://arcg.is/1nLSIjd>

College

- **Routine college commitments, *Ongoing*.** Annual attendance at graduation; graduate open house; and winter employee open house etc.
- **Faculty Academic Council Working Group, 2014:** Original member
- **Faculty Promotions Committee, *September 2013 – July 2016*.** As Chair *2015-2016*: Ensure candidate assessment based on the evidence presented in the dossier and referee's feedback. Review and assesses all aspects of promotion dossiers and make recommendations for promotion to the Dean of the College.
- **Professional Standards Committee, 2014 –present.** The Committee makes recommendations to the Faculty Academic Council of CPS on matters related to principles and standards of professional practice. 2015, secretary. 2016. 2017, elected vice chair to Joe Griffin.

Joint Task Force

May 2015 - December 2015: Task Force Member, Examined faculty issues on load, overload, service, and scholarship to make recommendations on policies, definitions, communication, and procedures.

University

- **Campus-wide GIT Network 2013-2016,** University-wide GIT network initiative for synergistic activities to strengthen and complement existing geospatial resources and avoid redundancy.
- **Panel New NTT Faculty Orientation *Sept, 2015*** Panelist on career development and promotion, first-time offering NTT FT faculty orientation as per Faculty Senate's FT faculty committee suggestion.
- **Global Resilience Institute (GRI):** College Faculty Affiliate and Faculty Advisory Council *2016-2017* Participate in inauguration sessions, contribute text for the original proposal, encourage CPS faculty involvement; review initial seed grant applications; participate in upcoming GRI events; open to engaging in new collaborations and initiatives.

Profession

- **MLAIWG,** Machine Learning and Artificial Intelligence Working Group, USGIF (October 2017)
- **URISA,** PEM-C Committee (October 2017)
- **ConnectED:** Volunteer for ConnectED GeoMentor Community, GeoMentor, Boston, MA, USA. Initiative designed to enrich K–12 education.
- **Reviewer:** Periodic reviewer for Hydrogeology Journal, Journal of Applied Geophysics, Journal of African and Earth Science; Egyptian Journal of Remote Sensing and Space Sciences, as time permits
- **Focus Groups: 2014,** USGIF / National System for Geospatial-Intelligence: served on the USGIF BoK focus group. Subject Matter Experts engage in structured activities to generate documentation of the knowledge and skills needed for the geospatial intelligence (GEOINT) workforce.

Professional Development 2013-present

1. Active member of 3 professional societies: The American Association for the Advancement of Science (AAAS and Trellis); The Royal Geological Society of London (fellow); and the American Society of Photogrammetry and Remote Sensing (ASPRS).
2. GRI - Exploring seed grant option plus NU's Sean Gallagher and Albert-Laszlo Barabasi (physics) for multidisciplinary geospatial for resilience analysis.
 - MOOCs / webinars: routinely attend online webinars and MOOCs as relating to software advances and technological changes. E.g.: Earth Imagery at Work: Esri. Feb-March, 2017; Maps and the Geospatial Revolution. Penn State. April 2015 - May 15, 2015; Geospatial Intelligence & the Geospatial Revolution. Penn State. Feb 2015 – March, 2015.
3. USGIF Academic Summit, October 2015, 2015 and 2016: Mandatory to USGIF accreditation, annual attendance at the Academic Summit in Herndon VA. Affords immersion in developments in the field, and feedback loop with academic partners, industry and government players.
4. USGIF Symposium 2014 (Tampa, FL), 2015 (Washington DC) and 2017 (San Antonio)
5. ICARS Workshop, September, 2015 "Intelligence Community Academic Research Symposium", NGA, Academic Research Program, Washington D.C., Maryland, USA.
6. Beirut, Lebanon, June (2016): continue Fulbright alliance and relationship building.
7. April 2017: [Annual Association of Geographers](#) annual meeting, Boston MA. Presenter.