DOROTA A. GREJNER-BRZEZINSKA
University Distinguished Professor
University Distinguished Scholar
Lowber B. Strange Endowed Chair

College of Engineering
Department of Civil, Environmental and Geodetic Engineering
Satellite Positioning and Inertial Navigation (SPIN) Laboratory
The Ohio State University
161 Hitchcock Hall, 2070 Neil Avenue
Columbus, OH 43212
Tel: 614-688-8136
e-mail: dbrzezinska@osu.edu

EDUCATION:

Ph.D.	1995	The Ohio State University	Satellite Geodesy
MS	1995	The Ohio State University	Satellite Geodesy
MS	1988	The Agricultural and Technical University (ART) of Olsztyn, currently: University of Warmia and Mazury, Poland Surveying Engineering and Land Management *with Highest National Distinction*	

PROFESSIONAL EXPERIENCE:

Current employment: Senior Associate Vice President for Research - Corporate and Government Partnerships, The Ohio State University, January 1, 2020 - present

Associate Dean for Research, Lowber B. Strange Endowed Chair, College of Engineering, The Ohio State University, September 1, 2017 - present

Past employment:

- Lowber B. Strange Endowed Chair and Department Chair, Department of Civil, Environmental and Geodetic Engineering, The Ohio State University; June 1, 2013 – August 31, 2017
- Department of Civil and Environmental Engineering and Geodetic Science, The Ohio State University, October 1, 2008 – May 31, 2013, Professor, October 1, 2004 – September 30, 2008, Associate Professor; October 1, 1999 – September 30, 2004, Assistant Professor
- Center for Mapping - NASA Center for Space Development, The Ohio State University, October 1, 1998 – September 30, 1999, Research Specialist; April 1, 1996 – September 30, 1998, Senior Research Associate; October 1, 1995 - May 30, 1996, Post-doctoral Researcher
- Department of Geodetic Science and Surveying, The Ohio State University, September 1, 1991 – June 1, 1995, Graduate Teaching Associate
- Department of Geodesy and Land Management, The Technical and Agricultural University of Olsztyn, Poland, October 1, 1986 – August 30, 1988, Lecturer; September 1, 1988 – July 1, 1990, Senior Lecturer

Research expertise: Global Positioning System (GPS) and Global Navigation Satellite systems (GNSS), multi-sensor integration for precision navigation and tracking, GPS/inertial integration, Geospatial Intelligence and Mobile Mapping technologies, geospatial/navigation sensor and data fusion, application of space-based sensing and navigation to science and engineering applications, such as detection of earthquakes and clandestine nuclear explosions, ionosphere and troposphere monitoring with GPS-based techniques (GPS Remote Sensing), landslide detection and monitoring, intelligent transportation systems, highway safety and security, autonomous navigation, collaborative navigation in GPS-denied environments, satellite and inertial geodesy, precision orbit determination, advanced numerical methods and adjustment computations; founder and leader of the Satellite Position and Inertial Navigation (SPIN) Laboratory, co-founder of the Consortium of Ohio Universities on Navigation and Timekeeping (COUNT) sponsored by defense industry.

Teaching experience: PhD and MS level courses on: Global Positioning System and applications, advanced GPS and space-based technologies, reference systems and frames; undergraduate courses on adjustment computations for geomatic engineering, fundamentals of statistics for civil engineering, introduction to GPS and applications for civil and geomatic engineering. Numerous workshops and short courses taught for professional societies, industry, graduate and undergraduate students at various national and international universities.

Academic advising: carried to completion 16 PhD students, over 20 MS students, five senior and two honors theses; supervised 24 post-doctoral researchers and visiting scientists (2002-currently); current academic advising: 2 PhD students, 2 MS students, and a post-doctoral researcher.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- National Academy of Engineering (NAE)
- American Association for the Advancement in Science (AAAS)
- American Geophysical Union (AGU)
- American Society of Civil Engineers (ASCE)
- American Society for Engineering Education (ASEE)
- Institute of Navigation (ION)
- International Association of Geodesy (IAG)
- Royal Institute of navigation (RIN)
    - I facilitated the establishment of a formal professional collaboration between the Institute of Navigation (ION) and International Society for Photogrammetry and Remote Sensing (ISPRS), ION and FIG (International Federation of Surveyors), and ION and International Association of Geodesy (IAG) – MOUs were signed in 2005 and 2006 by the presidents of these organizations. I am a formal liaison among these organizations

HONORS AND AWARDS

- Elected to the National Academy of Engineering (NAE), class of 2019
- Appointed to the President's Council of Advisors on Science and Technology (PCAST), 2019
- Appointed to the National Space-Based Positioning, Navigation, and Timing (PNT) Advisory Board, 2019
- The Ohio State University Distinguished Professor, 2019
- The Ohio State University Distinguished Scholar, 2019

- International Association of the Institutes of Navigation (IAIN) 2018 John Harrison Award, which includes honorary membership of the Association for life. *It is a life achievement award given to one individual every three years*. I am the first woman to receive this award.
- Institute of International Education's Scholar Rescue Fund *Award for Outstanding Service*, in recognition of "support to IIE-SRE Fellow Dr. Eblal Zakzok and commitment to preserving the voices and ideas of threatened scholars worldwide", November 2017.
- Best Paper Award, 10th International Conference on Mobile Mapping Technology, Cairo, Egypt, May 6-8, 2017.
- Institute of Navigation Distinguished Service Award, for "*Extraordinary service to The Institute of Navigation*", February 2017.
- Prof. Lubomir W. Baran Award, 2016, "*For outstanding accomplishments in the field of geodetic science and engineering*", University of Warmia and Mazury, Poland.
- The Johannes Kepler Award, 2016, Institute of Navigation (ION), "*For sustained and significant contributions to satellite navigation.*"
- First place recipients of the 2016 John I. Davidson President's Award for Practical Papers published in PE&RS: "Small Landslide Susceptibility and Hazard Assessment Based on Airborne Lidar Data," *PE&RS,* 81(3), 239-247.
- Fellow, Executive Leadership in Academic Technology and Engineering (ELATE), Drexel University, 2016.
- Outstanding Achievement Award for *"Pioneering contributions in developing and promoting mobile mapping technology,"* Mobile Mapping Technology International Symposia Series Organizing Committee, December 2015.
- United States Geospatial Intelligence Foundation (USGIF) Academic Achievement Award*, "For sustained and significant contributions to advancing the state-of-the-art in GEOINT relevant to national security, and for educating future GEOINT leaders",* 2015.
- Fellow, Royal Institute of Navigation, 2014.
- American Society for Photogrammetry and Remote Sensing (ASPRS) Talbert Abrams Award, 2nd Honorable Mention, 2012.
- Fellow, Institute of Navigation, 2011.
- Semifinalist, 2011 TechColumbus Innovation Award, Outstanding Woman in Technology.
- Best Paper Award, ION GNSS meeting, Portland Oregon, September 2011.
- Semifinalist, 2010 TechColumbus Innovation Award, Outstanding Woman in Technology.
- Best Paper Award, ION GNSS Meeting, Savannah, GA, September 2009.
- Harrison Award for Excellence in Engineering Education, The Ohio State University College of Engineering, 2009.
- Lumley Research Award, The Ohio State University College of Engineering, 2008.
- Fellow, International Association of Geodesy, 2007.
- Interdisciplinary Lumley Research Award, The Ohio State University College of Engineering, 2007
- Institute of Navigation (ION) Thurlow Award "*For outstanding contributions to the science of navigation"*, 2006.

- United States Geospatial Intelligence Foundation (USGIF) Academic Research Award "*For research on a personal navigator relevant to national security"*, performed under the DoD NGA-sponsored research project, *Seamless and reliable personal navigator,* 2005.
- Environmental Science Research Institute (ESRI) Award for Best Scientific Paper in Geographic Information Systems, 2005.
- Best paper award, ION GNSS Meeting, Long Beach, CA, September 2004.
- Lumley Research Award, The Ohio State University College of Engineering, 2003.
- Best paper award, ION GPS Meeting, Portland, Oregon, September 2002.
- Kaarina and Weiko A. Heiskanen Senior Award, The Ohio State University, 2001.
- 2000 NASA New Investigator Program (NIP) Award.
- Best paper award, ION GPS Meeting, Nashville TN, September 1998.
- Kaarina and Weiko A. Heiskanen Junior Award, The Ohio State University, (Outstanding Graduate Student award of the Department of Geodetic Science and Surveying), 1993.
- Fulbright Scholarship, 1990-95.
- MS with Highest National Distinction, 1986.

SIGNIFICANT SOFTWARE AND SYSTEM DEVELOPMENT

- 2012, ODOT-sponsored DBM (Digital Bridge Modeling) software for orthophoto production; at SPIN Lab
- 2011, development and implementation of a novel method of GPS-based detection of clandestine nuclear explosions, at SPIN Laboratory, OSU; this work received significant interest from the United Nations Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), American Association for the Advancement of Science (AAAS), US Government and substantial national and international press in the past two years; at SPIN Lab
- 2010, AFRL and NGA-sponsored Airborne Integrated Mapping System, AIMS™-PRO, novel multi-sensor based integrated system for navigation in GPS-denied environments; at SPIN Lab
- 2008, ODOT-sponsored Reflective linear feature extraction for strip adjustment, at SPIN Lab
- 2008, ODOT-sponsored High-accuracy dynamic highway mapping using a GPS/INS/CCD system with On-The-Fly GPS ambiguity resolution, at SPIN Lab
- 2007, NGA-sponsored multi-sensor and artificial intelligence-based personal navigator for emergency crews and dismounted soldiers; lead to NGA SBiR, and to a current collaboration with industry on underwater navigation (current project sponsored by Yotta Navigation and US Navy); at SPIN Lab
- 2005, NGS-sponsored rapid static GPS software that formed the basis for NGS OPUS-RS implementation http://www.ngs.noaa.gov/OPUS/OPUS-RS.html, at SPIN Laboratory, OSU
- 2005, NGS-sponsored Network-based RTK GPS (MPGPS), at SPIN Laboratory, OSU
- 2002, NASA-sponsored P-KOD (Precision Kinematic Orbit Determination), at SPIN Laboratory, OSU.
- 2002, AFRL-sponsored LIFT, LiDAR and Image Fusion Technology, sponsored by AFRL, at the OSU Center for Mapping
- 2000, GPSVan Data Acquisition Software, sponsored by NASA, at the OSU Center for Mapping

- 1998, NASA-sponsored Airborne Integrated Mapping System, AIMS™, Copyright TXu-857-494, 1998; at OSU Center for Mapping.
- 1995, GODIVA: precision GPS orbit and Earth Rotation Parameter determination, at OSU, Department of Geodetic Science and Surveying.

NOTEWORTHY ACHIEVEMENTS OF MY GRADUATE STUDENTS

- In the past nearly 10 years, 2-5 national awards have been awarded each year to my graduate students for their research work and published papers. The awards are sponsored by the Institute of Navigation (ION), American Society of Photogrammetry and Remote Sensing (ASPRS), American Congress of Surveying and Mapping (ACSM), and Topcon Positioning Systems (TPS).

PROFESSIONAL ACTIVITIES/SERVICE

- National Academy of Engineering 2020 Annual Meeting Forum Committee member
- Institute of Navigation (ION) Satellite division Nomination Committee (2020)
- Panel moderator, "Navigating Smart and Connected Cities", ION GNSS+ International Conference, Sept 16-20, 2019, Miami FL.
- Member, National Advisory Board on Space-based PNT (Positioning, Navigation and Timing), administered by NASA Administrator; I serve as Special Government Employees (SGE's), since May 2019
- Institute of Navigation (ION) Kepler Award Selection Committee Chair (2019)
- IAG Nominating Committee (2018)
- Panel moderator, "GNSS Remote Sensing of Our Global Environment", ION GNSS+ International Conference, Sept 24-28, 2018, Miami FL.
- Institute of Navigation (ION) Nominating Committee Chair (2018)
- Institute of Navigation (ION) Women in PNT Chair (2015-present); founder of Women in PNT, focused on professional advancement and empowerment of women in positioning, navigation, and timing (PNT) professions
- Institute of Navigation (ION) Executive Committee (1/2015-2019)
- Immediate Past President and Chair of the ION Nominating Committee (1/2017-present)
- President, Institute of Navigation (ION), 1/2015-2/2017
- International Technical Committee, 10th International Symposium on Mobile Mapping Technology, Cairo, Egypt, May 6-8, 2017.
- Co-Chair of the Scientific Committee and keynote speaker, 9th International Symposium on Mobile Mapping Technology, Sydney, Australia, December 9-11, 2015.
- Science Committee Member, *Annual of Navigation*, scientific journal of Polish Navigation Forum (2015-present)
- Executive Vice president, Institute of Navigation (ION), 2013-2015
- President, International Association of Geodesy (IAG) Commission 4, *Positioning & Applications* (2011–2015).
- Co-Chair of the Scientific Committee and workshop instructor, 3rd Summer School on Mobile Mapping Technology, Xiamen, China, April 27-29, 2015.

- Technical session chair in 2014: IEEE/ION PLANS Meeting, Monterey, CA, May 5-8, 2014; FIG Working Week 2014, Kuala Lumpur, Malaysia, 16-22 June 2014; EuroCOW Castelldefels, Spain, February 12–14, 2014.
- Vice-president, International Association of Geodesy (IAG) Commission 4, *Positioning & Applications* (2007–2011).
- Associate Editor: *ASCE Journal of Surveying Engineering* (2005-2015)
- Invited guest editor, special issue of *IAG Journal of Applied Geodesy*, Special Issue on *New Positioning Techniques*, 2010
- Editor for the on-line Tech Talk Discussion Forum, *GPS World* magazine (http://techtalk.sidt.gpsworld.com/). I was invited to serve as moderator by the Editor of the *GPS World* magazine. My job is to select topics for discussion that are related to state-of-the-art in satellite navigation algorithms, signal processing, receiver technology, etc., and either prepare a short technical write up on the subject or to find another expert, who can do that. Any questions posted by the users are handled the same way. The primary objective of the Forum is to involve the navigation professionals, academics and students in the information exchange, and to establish a reference source of easily accessible professional quality information on state-of-the-art science and engineering aspects of GPS/GNSS (Global Navigation Satellite Systems). The moderator of the Forum is considered a high-visibility position in the GPS/GNSS community (2006-2013).
- I am one of the two OSU lead PIs (J. Gupta of ElectroScience Lab is another OSU PI) in the collaborative effort with the Air Force Institute of Technology, Ohio University and Miami University, which resulted in establishing the Consortium of Ohio Universities on Navigation & Timekeeping (COUNT) in September 2006. The primary objective of this collaboration is to target large federal projects, and develop close collaboration with industry. US industry can benefit from COUNT by joining the consortium as Industrial Affiliates. As an Industrial Affiliate, the industry pays an annual membership fee to COUNT. The funds collected through the membership fee are used to develop short courses, organize short courses and workshops, sponsor student training and research. COUNT has currently four industrial affiliates with a total of $140,000 in annual memberships.
- Expert, National Academies Transportation Research Board (TRB), working on the Strategic Highway Research Program 2 (2007 – 2014)
- Expert, AFRL Sensor's Directorate Reference System Branch (2006 – 2013)
- Associate Editor, *ASCE Journal of Surveying Engineering,* American Society of Civil Engineers (since 2009)
- Editorial Board, *GPS Solutions*, Springer Verlag
- Editorial Board, *Journal of Applied Geodesy*, de Gruyter, Berlin-New York
- Editorial Board, *Journal of Navigation,* Royal Institute of Navigation, Great Britain
- Editorial Board*, The IAG Symposia Series,* IUGG Convention, Melbourne, Australia, July 30-Aug. 6, 2011
- Editorial Board, *Surveying and Land Information System (SLIS)*, American Congress of Surveying and Mapping (ACSM)
- Editorial Board, *Journal of Global Positioning Systems*, International Association of Chinese Professionals in Global Positioning Systems (CPGPS)
- Editorial Board, *Journal of Applied Geomatics*
- Editorial Board, *Geodezja i Kartografia*, Polish Academy of Sciences

- Editorial Board, *Technical Sciences*, University of Warmia and Mazury, Poland
- Reviewer for the *Journal of Geodesy*, *Journal of Applied Geodesy, GPS Solutions, Journal of the Global Positioning System, Navigation, several IEEE Transactions, ASCE Journal of Surveying Engineering*, *Journal of Geophysical Research*, *Photogrammetric Engineering and Remote Sensing*, *Computer-Aided Civil and Infrastructure Engineering, Surveying and Land Information Systems, Earth, Planets and Space, Survey Review, Journal of Astronautical Sciences* and *Polar Geography*
- Proposal reviewer for National Science Foundation (NSF), National Geodetic Survey (NGS), Australian Research Council (ARC), GEOIDE - Canadian Research Council, National Aeronautic and Space Administration (NASA), Air Force Research Laboratory (AFRL), Department of Transportation, and for U.S. Civilian Research and Development Foundation (CRDF)
- Co-Chair of the Scientific Committee and workshop instructor, 2nd Summer School on Mobile Mapping Technology, Tainan, Taiwan, National Cheng Kung University, Tainan, Taiwan, June 9-13, 2014.
- Co-Chair of the Scientific Committee and workshop instructor, 1st Summer School on Mobile Mapping Technology, National Cheng Kung University, Tainan, Taiwan, June 11-15, 2012.
- Co-Chair of the Scientific Committee, 8th International Symposium on Mobile Mapping Technology, Tainan, Taiwan, May 1-3, 2013.
- Session chair, ION Pacific PNT Conference, Honolulu, HI, April 22-25, 2013
- Session chair and workshop presenter, 26th Scientific Conference of the Argentinian Association of Geophysics and Geodesy and the 1st Workshop on Geomatics in Earth Sciences, San Miguel de Tucumán, Tucumán, Argentina, November 5-9, 2012.
- General Chair, ION GNSS International Meeting, 2012, Sept. 2012, Nashville, TN
- Program Chair, ION GNSS International Meeting, 2011, Sept. 2011, Portland, Oregon
- Chair, ION Membership Committee (2009-present)
- Chair, IAG Sub-Commission 4.1, *Multi-sensor Systems* (2007–2011)
- Chair of the Scientific Committee, 7th International Symposium on Mobile Mapping Technology, Cracow, Poland, June 13-16, 2011
- Chair of the Scientific Committee, 6th International Symposium on Mobile Mapping Technology, the University of Sao Palo, Brazil in July 2009
- Chair, Membership Committee, Institute of Navigation (ION) Council (2009–2010)
- Eastern Region Vice-President, Institute of Navigation (2007–2008)
- General Chair, Institute of Navigation (ION) National Technical Meeting, January 22-24, 2007, San Diego California
- Track Chair for ION/IEEE PLANS 2008 Meeting (in charge of six technical sessions), May 5-8, 2008, Monterey, CA
- Member, Science Committee, 13th FIG Symposium on Deformation Measurements and Analysis and 4th IAG Symposium on Geodesy for Geotechnical and Structural Engineering, LNEC, Lisbon, Portugal, 2008, May 12-15
- Co-chair, Scientific Committee, 5th International Symposium on Mobile Mapping Technology, May 28-31, 2007, Padova, Italy

- Writing team member, *The Global Geodetic Observing System: Meeting the Requirements of a Global Society on a Changing Planet in 2020, The Reference Document GGOS 2020,* Global Geodetic Observing System (GGOS) of the International Association of Geodesy (IAG)
- Member, Technical Committee of the 4th Workshop on Positioning, Navigation and Communication 2007 (WPNC'07), Leibniz University of Hannover, Germany, March 22, 2007
- Science Committee, The 3rd IAG Symposium on Geodesy for Geotechnical and Structural Engineering, and 12th FIG Symposium on Deformation Measurements, May 22-26, 2006, Baden, Austria.
- Program Chair, ION National Technical Meeting 2006, January 18-20, 2006, Monterey, California
- Technical Track Chair (in charge of six technical sessions), ION GNSS 2005 Meeting, September 13-16, Long Beach, California
- Chair of ION Sub-committee on Cooperation w/ Other Professional Societies (2005- current)
- Eastern Region Member-at-Large, Council of the Institute of Navigation (2005-2007)
- Land Representative, Council of the Institute of Navigation (2003-2005)
- Chair, International Association of geodesy (IAG) Sub-Commission 4.1, *Multi-sensor Systems* (2003-2007)
- Co-Chair, IAG Special Commission 4, WG5: Pseudolite Applications in Engineering Geodesy (2003-current)
- Chair, International Federation of Surveyors (FIG) Task Force 5.3.1 *Mobile Mapping Systems* (2002-2006)
- External reviewer for promotion and tenure, University of Calgary, University of Pittsburgh, Miami University
- Session moderator at numerous conferences/symposia of the American Congress of Surveying and Mapping (ACSM), the Institute of Navigation (ION) and International Mobile Mapping, ISPRS Congress and Commission meetings
- Member of the Science Committee, 2nd Symposium on Geodesy for Geotechnical and Structural Engineering, Berlin, Germany, May 2002
- Member, Organizing Committee of the 3rd International Mobile Mapping Symposium, Kunming, China, March 28-31, 2004
- Member of the Science and Organization Committee and a Session Chair: Instrumentation on Moving Platforms, Heiskanen Symposium in Geodesy, Columbus, Ohio, October 2002
- Chair of ION Sub-committee on Cooperation w/ Other Professional Societies (2005- current)
- Eastern Region Member-at-Large, Council of the Institute of Navigation (2005-2007)
- Chair of IAG Sub-Commission 4.1, *Multi-sensor Systems* (2003-2007)
- Land Representative for the ION (Institute of Navigation) Council (2003-2004)
- Chair of the IAG Study Group 4.1 on *Pseudolite Applications in Positioning and Navigation* (2003-2007)
- Chair of the IAG Special Commission 4 WG5, *Pseudolite Applications in Engineering Geodesy* (2001-2003)
- Chair of the Task Force 5.3.1 *Mobile Mapping Systems* of FIG (Federation Internacionale des Geometres) WG 5.3 (2002-2006)
- Member of the IAG Commission 4, WG1 *Mobile Multi-sensor systems* (2000-2003)
- Member, Organizing Committee of the 3rd International Mobile Mapping Symposium, Kunming, China, March 2004

- Session Chair: *Surveying, Geodesy, and Mapping*, Annual Meeting of the Institute of Navigation, Albuquerque, New Mexico, June 2003
- Session Chair: *Surveying, Geodesy, and Mapping*, Annual Meeting of the Institute of Navigation, Albuquerque, New Mexico, June 2002
- Member of the Science Committee, 2nd Symposium on Geodesy for Geotechnical and Structural Engineering, Berlin, Germany, May 2002
- Session Chair, *Real-time Mobile Multi-Sensor Systems and Their Applications in GIS and Mapping,* 2nd Symposium on Geodesy for Geotechnical and Structural Engineering, Berlin, Germany, May 2002
- Session Chair, *New Measurement Techniques,* 2nd Symposium on Geodesy for Geotechnical and Structural Engineering, Berlin, Germany, May 2002
- Session Chair, *Integrated Navigation Systems*, Institute of Navigation (ION) GPS, September 2001
- Session Chair, *Sensor Orientation, Integration and Calibration/Reliability Aspects of Direct Georeferencin*g, 3rd International Workshop on Mobile Mapping Cairo, January 2001
- Session Chair, *Integrated Navigation Systems*, Institute of Navigation (ION) GPS, September 2000
- Session Chair, *Mapping, Charting and Geodesy*, Institute of Navigation Technical Meeting, January 2000
- Session Chair, *Marine Navigation* Session, Institute of Navigation Annual Meeting, June 1999
- Session Chair, *Mobile Mapping Session*, American Congress of Surveying and Mapping (ACSM) Annual Conference, June 1998

SPONSORED RESEARCH

1. Scalable collaborative swarm mapping in GNSS-denied environment, National Geospatial-Intelligence Agency (NGA), 09/30/2019 - 09/29/2021, ($188,346, co-PI)
2. Photogrammetry Support for Planetary Mapping, US Geological Survey, 2017 – 2018, (phase 1: $50K, 5-year projects with annual budget $100K, co-PI).
3. Autonomous vehicles: performance standards and public policy; SPIN Lab/Teradata Project with OSU CAR Consortium, CAR/COE/TRC, 2017-2018, $70K, PI.
4. Live Site Demonstration of Advanced Geolocation Technology to Support Classification Level EMI Data Collect in GPS-challenged Areas, US DoD/ESTCP, 2014-2019, ($780,000, PI)
5. Consortium of Ohio Universities on Navigation and Timekeeping (COUNT), Industrial consortium, 2010-2017 ($325K, PI), continuing; new funds added every year.
6. Using combined GPS and low-frequency radio interferometry data to discriminate traveling ionospheric disturbances from large chemical and underground nuclear explosions, Navy Research Lab, pilot project, 1/2015-9/2015 ($40K, PI)
7. GNSS-derived height study, National Geodetic Survey (NGS), 2/2014-1/2015, ($133K, PI).
8. State of Ohio geodetic advisor, ODOT and Ohio Dept. of Administrative Services, 2015 ($71K, PI)
9. Probabilistic Use of LiDAR Data to Detect and Characterize Landslides – Phase 2, Ohio Department of Transportation, 2013-2014, ($225,797, PI)
10. CROWN: Compression in Real-time of Waveform Networks: A Robust LiDAR Compression Technology: From Sensing to Information Extraction – Phase II, National Geospatial-Intelligence Agency (NGA), 10/2012-10/2014, ($149,908, PI)

11. ADVANCE Institutional Transformation Award: Comprehensive Equity at Ohio State (CEOS), NSF, 1/2008-8/2015 ($3.56M, co-PI)
12. Height Modernization Program and Subsidence Study in Northern Ohio, OPREP, Ohio Department of Transportation (ODOT) and National Geodetic Survey (NGS), 8/2012-11/2013, ($220,000, PI)
13. Impacts of Lakeside Subsidence on Benchmark Reliability, Ohio Department of Transportation (ODOT), 8/2012-11/2013, ($62,600, PI)
14. Exploitation of Full-Waveform LiDAR to Characterize/Exploit Under Canopy Targets-Foliage Penetration (FOPEN), US Army, 2012-2015, ($210,000, co-PI)
15. Airborne LiDAR-Derived Surface Error Characteristics versus Surface Complexity, National Geospatial-Intelligence Agency (NGA), 6/2010-9/2011, ($100,000, Co-PI)
16. Collaborative Research and Development Effort on Precision GPS/EO Nav/ Navigation Fusion – Task Order 1, WPAFB Sensor's Directorate Reference System, 6/2008-5/2010, ($100,000, Co-PI)
17. Naval Special Warfare (NSW) Underwater Secure Text Messaging and Diver Locator, ONR/Yotta Navigation, April 2012 – March 2013, $99,000 (phase I), additional 36 months approved with a total of $350,000 (PI).
18. Probabilistic Use of LiDAR Data to Detect and Characterize Landslides, ODOT, 8/2011-9/2013, $368,000 (PI).
19. Data Collection and Processing for All-Source Positioning and Navigation (ASPN) Program, DARPA/AFRL, 7/2011-6/2012, $380K (PI).
20. Airborne LiDAR-Derived Surface Error Characteristics versus Surface Complexity, NGA, 7/2010-6/2011, $100K (PI).
21. CROWN: Compression in Real-time of Waveform Networks a Robust LiDAR Compression Technology: From Sensing to Information Extraction, NGA NURI, 9/2009 – 9/2011, $470,000.
22. Performance assessment of collaborative navigation of underwater dynamic sensor network, NRL (as academic partner of Yotta Navigation), SBiR phase 1, $21k (PI).
23. Integrated GPS/INU Simulator for Enhanced Traffic Safety, FHWA, in collaboration with CAR, 7/2010 – 6/2012, $600K (co-PI)
24. Rapid Orthophoto Development System, Ohio Department of Transportation, 2007-2010, (co-PI, $1,507,066)
25. Airborne LiDAR Reflective Linear Feature Extraction for Strip Adjustment and Horizontal Accuracy Determination, Ohio Department of Transportation, 2006-2008, ($98,525, co-PI)
26. Air-borne rapid mapping data co-registration technology, Electronics & Telecommunications Research Institute, Korea, 07/01/2007 - 06/30/2008 ($50,000, PI).
27. System design of a multiple camera imaging sensor assembly with GPS/IMU support, Pan-Asia Engineering, 02/01/2008 - 07/31/2008, ($37,000, co-PI).
28. Airborne rapid mapping data co-registration technology, ETRI Korea, 07/01/2007 - 06/30/2008, ($50,000, PI).
29. Consortium of Ohio Universities on Navigation & Timekeeping – COUNT, Industrial membership share, 9/30/2007 – 8/30/2011 ($20,000, PI).
30. High-Accuracy Multisensor Geolocation Technology to Support Geophysical Data Collection at MEC Sites, SERDP (DOD/DOE), 5/15/2007 – 11/22/2012, ($1,390,643, PI).
31. Support for the WPAFB Sensor's Directorate Reference System Branch, General Dynamics, 5/11/2007-3/15/2008, ($62,500, PI)
32. Expert support to LEGAND and WASPS program for WPAFB Sensor's Directorate Reference System Branch, Wyle Laboratories, 1/31/2007-12/31/2007, ($25,000, PI).

33. Performance of GEOID03 for height conversion in Ohio, Ohio Department of Transportation (ODOT), 11/15/2006 – 11/14/2007, ($70,509, PI).
34. DHB-Origins and development of tribal social identities and territorial behaviors in ancient southern Arabia, National Science Foundation (NSF), 10/1/2006 – 9/30/2010, ($749,880, co-PI).
35. Development of numerical integrator for precise satellite orbit determination, National Oceanic and Atmospheric Administration (NOAA)/National Geodetic Survey (NGS), 10/1/2006 – 3/31/2008, ($128,518, PI).
36. Airborne LiDAR reflective linear feature extraction for strip adjustment and horizontal accuracy determination, ODOT, 10/1/2006 – 9/30/2007, ($98,525, co-PI).
37. Time Synchronization System for Multi-Sensor Applications, ETRI Korea, 01/06/2006 – 12/31/2006, ($100,000, PI)
38. Automated Geospatial-Intelligence Analysis (AGA): rapid city modeling from precisely georeferenced LIDAR/HSI data using closed-feedback error loop, National Geospatial-Intelligence Agency (NGA/DOD), NGA University Research program (NURI), 1/7/2006 – 31/10/2010, ($490, 578, PI).
39. Flash LADAR: A New Technology Supporting Separation of Static and Non-Static Ground Features, DAGSI, 01/07/2006 – 30/06/2008, ($118,649 (faculty plus student allowances), PI).
40. Research and analysis of software parameters used in processing LIDAR data, ODOT, 01/01/2006–10/31/2006 ($20,000, co-PI)
41. Performance analysis of the rapid-static module of the OPUS (On-Line Positioning User Service) software, NGS, 01/01/2005–12/31/2006 ($47,383, PI).
42. Seamless and reliable personal navigator, NGA, 09/01/04 - 08/31/10 ($458,673, PI)
43. Airborne Laser Swath Mapping of the Southern San Andreas Fault, NSF, 7/1/2004–6/30/2006 (376,000, co-PI)
44. The analysis of the ambiguity resolution, error modeling techniques and the support infrastructure for nationwide three-frequency real-time kinematic (RTK) GPS positioning, National Geodetic Survey (NGS), 4/1/2004–3/31/2005 ($79,450, PI).
45. Developing rapid-static module for the OPUS software, National Geodetic Survey (NGS), 10/01/2004–09/30/2006, ($86, 930, PI)
46. Study of RTK technology and support infrastructure suitable for long-range instantaneous, centimeter-level positioning as related to the US NSRS network, National Geodetic Survey (NGS), 09/01/02–08/31/05, ($184,483, PI)
47. Study on the impact of accurate gravity compensation on GPS/INS-based direct sensor orientation and targeting, National Intelligence and Mapping Agency (NIMA), NIMA University Research program (NURI), 10/01/2003–9/31/2006, ($419,805, PI).
48. Airborne LiDAR: A New Source of Traffic Flow Data, ODOT, 10/2003–9/2004, ($50,245, PI).
49. Transantarctic mountains deformation network: GPS measurements of neotectonic motion in the Antarctic Interior, National Science Foundation, 7/1/2003–6/30/2007 ($547,949, co-PI).
50. Proposal to Acquire Precision Navigation and Positioning Instrumentation System, AFOSR/Department of Defense and the Ohio Board of Regents (DURIP program), 4/1/2002–3/31/2004 ($346,000, PI)
51. Geo-Referenced Digital Acquisition and Processing System Using LIDAR Technology, Ohio Department of Transportation, 6/1/2002 –10/31/2004 ($1,385,700, Co-PI)

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54. Remote Sensing Data Acquisition for Traffic Flow Estimates (part of the National Consortium for Remote Sensing in Transportation – Flows), Federal Department of Transportation, 3/31/2000-2/28/2004 ($165,000, PI).
55. Development of High-Accuracy Geo-Referenced Data from Selected Tucson Sites, Federal Department of Transportation (NCRST-F), 1/1/2002-3/31/2003 ($28,000, co-PI).
56. GPS/INS/Pseudolite Integration for Precise Positioning and Attitude Determination, 2001 Seed Grant of The University of New South Wales, Australia, 1/1/2001- 12/31/2002 ($14,000, Co-PI)
57. High-Accuracy Direct Aerial Platform Orientation with Tightly Coupled GPS/INS System, Ohio Department of Transportation, 1/1/2001 – 1/10/2002, ($279,000, PI)
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59. Multiple Sensor Fusion for Surface Extraction and Robust Geolocation, Department of Defense Dual Use Technology (DUST) Program, 4/1/2000-6/30/2004 ($403,000, Co-PI)
60. Airborne Integrated Mapping System (AIMS), NASA, 1996 -1998 ($2,480,000, Co-I)
61. Simulation of Descent Imagery Collection for Mars Surveyor Mission with GPS/INS/CCD System, NASA/Jet Propulsion Laboratory, 1999, total: $28,000 (Co-PI)
62. DEM Extraction from GPS/INS Geo-Referenced High-Resolution Direct Digital Imagery (AIMS™), Florida Department of Transportation, 1998, $25,000 (Co-PI)
63. Airborne Digital Mapping of the MIT Campus, Massachusetts Institute of Technology, 1998, $10,000 (Co-PI)

Total research funds as PI/co-PI: over $22.5 million

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1. Contributor (2020) to SAE International SAE EDGE™ report on *Unsettled Topics in the Application of Satellite Navigation technology to Air Traffic Management*, author: Jim Farrel; https://www.sae.org/publications/technical-papers/content/epr2020010/
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INVITED PRESENTATIONS, KEYNOTES AND WORKSHOP INSTRUCTOR

1. *COE – a research overview*, presented at the Technion University, Haifa, Israel, January 20, 2020.
2. *PNT Research at OSU College of Engineering*, presented at the Technion University, Haifa, Israel, January 20, 2020.
3. *Automated and autonomous vehicles: unsettled technologies, validation and deployment challenges*, keynote presented at Israel Navigation Workshop and Exhibition (INWE20), Daniel Hotel, Herzliya, January 27, 2020
4. Challenges associated with the deployment of autonomous vehicles, Cognizant Autonomous Systems for Safety Critical Applications Conference: PNT for Unmanned Systems
5. September 16-17, 2019 Miami, FL
6. *Challenges associated with deployment of autonomous vehicles*, invited panelist, The 10th China Satellite Navigation Conference (CSNC), May 22-25, 2019, Beijing, China.
7. *Smart mobility in smart cities – are we ready for autonomous driving?* keynote, The 10th China Satellite Navigation Conference (CSNC), May 22-25, 2019, Beijing, China.
8. *How Research and Technology Convergence is Shifting the Deformation Monitoring Paradigm*, keynote, The 4th*Joint International Symposium on Deformation Monitoring* (JISDM), May 15th – 17th, Athens, Greece.
9. *Smart mobility in smart cities – are we ready for autonomous driving?* invited presentation, The 16th World Congress of the International Institutes of Navigation (IAIN), November 28- December 1,

2018, Tokyo, Japan.

10. *Is technology making us dumber or smarter?* Invited panel presentation, ION GNSS+ International Conference, September 24-28, 2018, Miami, FL.
11. *Sensor integration for Personal Navigation,* invited workshop presented at ION GNSS+ International Conference, September 24-28, 2018, Miami, FL.
12. *Navigation/localization Performance of Autonomous Vehicles,* invited presentation, High Performance Computing (HPC) User Forum September 4-6, 2018, Detroit, MI.
13. *PNT in smart cities – are we ready for autonomous driving?* Keynote presented at IGNSS 2018, February 5-9, Sydney, Australia.
14. *The value of partnerships: academe, governemtb and industry,* invited presentation, FHWA/MORPC Multi-Jurisdictional Coordination for the Great Lakes Region, Workshop, February 22, 2018.
15. *Image-based Perceptual Learning Algorithms for Autonomous Driving*, invited presentation, International Navigation Conference (INC), Brighton, UK, November 27-30, 2017.
16. *Smart mobility in smart cities – are we ready for autonomous driving?* Keynote presented at Baltic Geodetic Congress, June 21-23, 2018, Olsztyn, Poland
17. *From smart bombs to smart phones: how did we get here and what's next?* Keynote presented at the Cartographic Sciences Graduate Program Alumni Meeting, Faculdade de Ciências e Tecnologia July 27-28, 2017, Presidente Prudente, SP, Brazil
18. *From smart bombs to smart phones: GPS, GNSS and much more,* invited presentation, XXVIII Assembly of Argentinian Association of Geodesy and Geophysics (AAGG), La Plata, Argentina, April 17-21, 2017.
19. *Paradigm shift in navigation philosophy: from GPS to GNSS and beyond*, Electrical and Computer Engineering Colloquium Series, University of California at Riverside, March 6, 2017.
20. Keynote: *50 years of accelerating tomorrow: from GPS to GNSS and beyond*, International Symposium on GNSS, Tainan, Taiwan, December 5-7, 2016.
21. Toth C., D. Grejner-Brzezinska (presenter), Z. Koppanyi: *Estimation of the Aircraft Departure from the Runway Centerline using LiDAR-derived Point Clouds*, International Navigation Conference, November 8–10, 2016, Glasgow, UK.
22. Invited presentation: *50 years of accelerating tomorrow: from GPS to GNSS and beyond*, 16th Polish-American Conference on Science and Technology, Warsaw, Poland, May 15-17, 2016.
23. Keynote: *On multi-sensor PNT technologies applied to mobile mapping and other emerging applications*, 9th International Symposium on Mobile Mapping Technology, Sydney, Australia, December 9-11, 2015.
24. Keynote: *Multi-sensor Navigation Systems: Concepts, Evolution, Trends and Applications*, IAIN World Congress, October 20 – 23, 2015, Prague, Czech Republic
25. Keynote: *A brief history of a few things*, 15th Polish-American Conference on Science and Technology, Columbus, OH, May 28-29, 2015.
26. Keynote: *Future trends in geolocation technology: can we deliver resilient PNT*?, Geomatics Indaba 2015, Johannesburg, South Africa, August 11-13, 2015.
27. Keynote: *On Multi-Sensor Navigation Systems and Resilient PNT*, 2nd International Symposium on Computer Vision on Remote Sensing, Xiamen, China, April 28-30 2015.
28. Invited workshop: *Sensor Integration for Personal Navigation*, D. A. Grejner-Brzezinska and C. Toth, ION Pacific PNT, April 20, 2015, Honolulu, HW.
29. Keynote: *Multi-sensor Navigation Systems: Concepts, Evolution, Trends and Applications*, International Navigation Conference, Manchester, UK, February 24-26, 2015.

30. Invited presentation: *Advanced geolocation technology for dynamic classification of EMI data collection in GPS-challenged environments*, D. A. Grejner-Brzezinska, C. Toth, G. Jozkow and S. Ostrowski, SAGEEP 2015, Austin, Texas, March 22-26, 2015.
31. Interviewed by *GIM International*: Navigating the Future of Geospatial and Geomatics Sectors, *GIM International,* 12(28) December 2014, pp. 12-15.
32. Invited presentation: *PNT: Concept Evolution, Future Trends and Applications*, PECORA 2014, International Association of Geodesy (IAG) Special Session – ISPRS TC I, Denver CO, November 17-20, 2014.
33. ION GNSS Plenary Speaker: GNSS - Our Strongest Asset or Weakest Link?, ION GNSS+, International Meeting of ION Satellite division, September 9, 2014, Tampa, FL.
34. Keynote: *The future of GNSS integrated systems*, GNSS Futures in the Asia-Pacific Region, Sydney, Australia, July 7, 2014.
35. Workshop instructor: *Sensor Integration for Personal Navigation*, IEEE/ION PLAN Tutorials, Monterey, CA, May 5, 2014.
36. Workshop instructor: *Multi-sensor navigation: concept, evolution, future trends and challenges*, 2nd Summer School on Mobile Mapping Technology, Tainan, Taiwan, National Cheng Kung University, Tainan, Taiwan, June 9-13, 2014.
37. Invited workshop: *Network-Based RTK GPS and Precise Point Positioning*, Nanyang ENC, Singapore, January 7-8, 2014.
38. Invited workshop: *Integrated multisensory navigation systems*, Nanyang ENC, Singapore, January 7-8, 2014.
39. Invited presentation, *Navigation challenges and trends in mobile mapping and personal navigation*, EuroCOW Castelldefels, Spain, February 12–14, 2014.
40. Invited presentation, *Sensor orientation/navigation: challenges and trends,* LARS - Latin American Remote sensing Week 2013, Santiago, Chile, October 23–25, 2013
41. Keynote: *Filling in the navigation gap: navigation alternatives for GPS/GNSS-challenged environment*, Workshop, The Polish Air Force Academy, Dęblin, March 19□21, 2013.
42. Keynote: *Modern geolocation: ubiquitous technology of the 21st century, The* 9th Mobile Mapping Symposium, May 1-3, 2013, Tainan, Taiwan.
43. Grejner-Brzezinska, D. A., Park. J., J. Helmboldt, R.B. von Frese, Y. Morton, *Unlikely New Tools for Spotting Clandestine Nuclear Tests*, press conference presentation, AGU Fall Conference, San Francisco, Dec. 3, 2012.
44. Park. J., J. Helmboldt, D. A. **Grejner-Brzezinska**, R.B. von Frese, Y. Morton, T. Wilson, *Joint GPS and radio astronomical observations of underground nuclear explosions*, AGU Fall Conference, San Francisco, Dec. 3-7, 2012.
45. Workshop instructor: *Collaborative navigation: concept and preliminary performance assessment*, National Chung Hsing University, Taiwan, June 14, 2012
46. Workshop instructor, *Mobile Mapping Systems: what are they and why are they becoming a mapping standard?* 1st Mobile Mapping Summer School, National Cheng Kung University, Tainan, Taiwan, June 11-15, 2012.
47. Park. J., D. A. **Grejner-Brzezinska**, R. B. von Frese, Y. Morton, *On traveling ionospheric disturbances induced by underground nuclear explosions and earthquakes: case study*□, IGS Workshop, Olsztyn, Poland, July 23-27, 2012.
48. Workshop instructor on *Mobile Platforms: Concept, Sensors and Calibration Techniques*, COUNT Short Courses, Dayton, OH, June 5, 2012.

49. Workshop instructor on *Sensor Integration for Personal Navigation*, IEEE/ION PLANS Meeting, Myrtle Beach, SC, April 24-26, 2012.
50. Grejner-Brzezinska, D.A., Toth, *High-Accuracy Multisensor Geolocation Technology to Support Geophysical Data Collection at MEC Site,* Strategic Environmental Research and Development Program, Department of Defense (SERDP DOD), Annual SERDP project reviews, Washington D.C., May 23-24, 2012.
51. Grejner-Brzezinska, D.A., Toth C.K., *Overview of Research Activities at The Ohio State University SPIN Laboratory*, presented at 6th Annual COUNT Workshop Columbus, OH April 12-13, 2012.
52. *Detecting nuclear testing: Can GPS locate clandestine nuclear explosions?* invited presentation at Columbus Rotary Club, February 6, 2012.
53. Workshop instructor on *Cooperative Navigation: Concept, Sensors and Integration Techniques*, presented at the University of New South Wales, Sydney, Australia, July 14, 2011.
54. Workshop instructor on *Collaborative Navigation & Imaging Sensor Calibration*, MITRE Corp., Boston, MA, Dec. 13, 2011.
55. Grejner-Brzezinska, D. A. C. K. Toth and J. Nikki Markiel, *Seamless navigation in transitional environments*, European Navigation Conference London, United Kingdom, November 28 – December 1, 2011.
56. Park, J., R.B. von Frese, D. A. **Grejner-Brzezinska**, Y. Morton, *Ionospheric Disturbances Locate the 2009 North Korean Underground Nuclear Test*, 2011 AGU Fall Meeting, Dec. 5-19, 2011.
57. Grejner-Brzezinska, D.A., Toth, C.K., *PNT Related Research Activities at OSU SPIN Laboratory*, presented at DARPA, Washington D.C., September 25, 2011.
58. Park, J., D.A. Grejner-Brzezinska, Ralph R.B. von Frese, Jade Morton (2011): Ionospheric Effects of Underground Nuclear Explosions, presented at ION Dayton Section Monthly Luncheon, October 13, 2011.
59. Grejner-Brzezinska, D.A., Toth C.K. (2011): *SPIN Lab Research Overview: NGA-Related Research*, presented at OSU Annual NGA Project Review, November 11, 2011.
60. Grejner-Brzezinska, D.A., Toth, C., J. Oh: *Automated Geospatial-Intelligence Analysis (AGA): Rapid City Modeling from Precisely Georeferenced LiDAR/HSI Data Using Closed-Feedback Error Loop*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Aug 29-Sept. 1, 2011, CD ROM.
61. Dedes G., S. Wolfe, D. Guenther, B. Park, J. So, K. Mouskos, D. **Grejner-Brzezinska**, C. Toth, X. Wang, G. Heydinger (2012): *Integrated GNSS/INU, Vehicle Dynamics, and Microscopic Traffic Flow Simulator for Automotive Safety*, 3rd International Conference on Road Safety and Simulation, Indianapolis, September 14-16, 2011.
62. Grejner-Brzezinska, D. A., Toth, C. K. (2011): *CROWN: Compression in Real-Time of Wavelet Networks, A Robust LiDAR Compression Technology*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Aug 29-Sept. 1, 2011.
63. Grejner-Brzezinska, D. A., Toth, C. K. (2011): *SPIN Lab: Current Research and FY2012 Proposal*, COUNT and RY Joint PNT Research Review, Dayton, OH, August 18, 2011.
64. Grejner-Brzezinska, D. A., Toth, C. K. and G. Retscher, *Application of Artificial Intelligence and Multi-sensor Systems in Navigation and Engineering Geodesy*, IUGG General Assembly, Melbourne, Australia, June 28 – July 7, 2011.
65. Grejner-Brzezinska, D. A. C. K. Toth, J-K. Lee, X. Wang and A. Keally, *Collaborative navigation in GPS-challenged environments*, IUGG General Assembly, Melbourne, Australia, June 28 – July 7, 2011.

66. Park, J., Dorota A. **Grejner-Brzezinska**, Yu Morton, Ralph R. B. von Frese, Luis R. Gaya-Pique, *Ionospheric Disturbance Detection of the Recent North Korean Underground Nuclear Test*, Comprehensive Nuclear-Test-Ban Treaty (CTBT) Science and Technology 2011 Conference (S&T2011), Hofburg Palace in Vienna, Austria, 8 -10 June 2011.
67. Workshop instructor on *Collaborative Navigation & Imaging Sensor Calibration*, COUNT Short Course Dayton, OH, June 6, 2011.
68. Grejner-Brzezinska, D.A., J-K. Lee and C. K. Toth, *Positioning and Navigation in GPS-challenged Environments: Cooperative Navigation Concept*, FIG Working Week 2011, Marrakech, Morocco, 18-22 May 2011.
69. Grejner-Brzezinska, D.A., Toth, *High-Accuracy Multisensor Geolocation Technology to Support Geophysical Data Collection at MEC Site,* Strategic Environmental Research and Development Program, Department of Defense (SERDP DOD), Annual SERDP project reviews, Washington D.C., May 9-12, 2011.
70. Workshop instructor: *Cooperative Navigation in GPS-challenged Environment*, presented at XV Brazilian Remote Sensing Symposium, Curitiba, Paraná State, Southern Brazil, April 30 - May 5, 2011
71. Toth, C.K. and D.A. **Grejner-Brzezinska**, *Compressing LiDAR Waveform Data: Surface Classification and Peak Detection*, ASPRS Annual Conference, Milwaukee, WI, May 1–5, 2011.
72. Grejner-Brzezinska, D.A., Toth C.K., *Overview of Research Activities at The Ohio State University SPIN Laboratory*, presented at 5th Annual COUNT Workshop Dayton, OH April 5-6, 2011.
73. Keynote speaker: *Image-based and Artificial Intelligence techniques for personal and collaborative navigation in GNSS-denied environments, UPINLBS, Kirkkonummi, Helsinki, Finland, October 14-15, 2010.*
74. Park, J, Ralph R.B. von Frese, Dorota A. **Grejner-Brzezinska**, Jade Morton, *Ionospheric effects of underground nuclear explosions*, AGU Fall meeting, Dec. 13-17, 2010.
75. Markiel, J.N. (Nikki), J. Hui, D. *Grejner-Brzezinska* , C. Toth, *Comparison of Algorithms for Navigation and Positioning via 3D Laser Ranging Technology*, *ION 2010 Autonomous* Weapons Summit and GNC Challenges for Miniature *Autonomous* Systems Workshop, October 25 - October 27, 2010.
76. Grejner-Brzezinska, D.A., Toth C.K., *Seamless and Reliable Personal Navigator*, presented at OSU Annual NGA Project Review, Aug 10, 2010.
77. Grejner-Brzezinska, D.A., Toth C.K. and J. Gupta, *Collaborative Navigation for Ground Vehicles in GPS-Challenged Environments*, presented at OSU Annual NGA Project Review, Aug 10, 2010.
78. Grejner-Brzezinska, D.A., Toth, C., J. Oh: *Automated Geospatial-Intelligence Analysis (AGA): Rapid City Modeling from Precisely Georeferenced LiDAR/HSI Data Using Closed-Feedback Error Loop*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Sept. 14-17, 2010.
79. Grejner-Brzezinska, D. A., Toth, C. K., Moafipoor, S., *Seamless and Reliable Personal Navigator*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Sept. 14-17, 2010.
80. Grejner-Brzezinska, D. A., Toth, C. K., *CROWN: Compression in Real-Time of Wavelet Networks, A Robust LiDAR Compression Technology*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Sept. 14-17, 2010.
81. Workshop instructor on *Sensors, integration techniques and systems used in personal navigation*, IEEE/ION PLANS 2010, May 3, Indian Wells, CA.

82. Workshop instructor on *Mapping and Surveying* at the 2nd International Workshop: *Satellite Navigation Science and Technology for Africa*, sponsored by UN and ION, International Center for Theoretical Physics, Trieste, Italy, 6-24 April 2010.
83. Workshop instructor on *Ubiquitous Multi-Sensor Fusion: The Holy Grail of Locating, Tracking and Geolocation*, National Geodetic Survey Headquarters, Bethesda, MD, January 21, 2010.
84. Workshop instructor on *Ubiquitous Multi-Sensor Fusion: The Holy Grail of Locating, Tracking and Geolocation*, Army Research Lab, Aberdeen Proven Grounds, MD, January 19, 2010.
85. Workshop instructor on *Sensors, integration techniques and systems used in personal navigation*, COUNT 4th Annual Short Courses, Dayton, OH, June 3, 2010.
86. Workshop instructor: *Modern integrated navigation systems - current and future trends: personal navigation, image–based navigation and cooperative navigation*, presented at University of Warmia and Mazury, Olsztyn, Poland, May 26, 2010.
87. Grejner-Brzezinska, D.A., Toth, *Overview of Research Activities at The Ohio State University SPIN Laboratory*, presented at 4th Annual COUNT Workshop Dayton, OH April 20-21, 2010.
88. Keynote speaker: *Indoor navigation supported by image-based and Artificial Intelligence techniques*, International Global Navigation Satellite Systems Society IGNSS 2009 Symposium, Surfers Paradise, QLD, Australia, 1-3 December, 2009.
89. Panelist, *Beyond GPS*, International Global Navigation Satellite Systems Society IGNSS 2009 Symposium, Surfers Paradise, QLD, Australia, 1-3 December, 2009.
90. Workshop instructor: *Mobile mapping technology: paradigm shift and future trends*, presented at the State University of Sao Paulo, Brazil, July 21, 2009.
91. Grejner-Brzezinska, D.A., Toth, C., J. Oh: Automated Geospatial-Intelligence Analysis (AGA): *Rapid City Modeling from Precisely Georeferenced LiDAR/HSI Data Using Closed-Feedback Error Loop*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Sept. 29- Oct. 1, 2009, CD ROM.
92. Grejner-Brzezinska, D. A., Toth, C. K., Moafipoor, S.: *Seamless and Reliable Personal Navigator*, presented at National Geospatial Intelligence (NGA) University Research Program (NARP) Symposium, Washington D.C., Sept. 29- Oct. 1, 2009, CD ROM.
93. Toth, C.K., **Grejner-Brzezinska**, D. (2009): *LiDAR Data Processing Alternatives: Compressive Sampling Applied to Waveform*, ASPRS/MAPPS Specialty Conference, San Antonio, TX, November 16 –19, 2009.
94. Toth, C.K., **Grejner-Brzezinska**, D., Czarnecka, K. (2009): *Mobile LiDAR Systems*, Geodesy for Planet Earth, IAG Scientific Assembly, Buenos Aires, Argentina, August 31-September 4, 2009.
95. Toth, C.K., Ozguner, U., Redmill, K., **Grejner-Brzezinska**, D. (2009): *Autonomous Vehicle Navigation: Moving to Urban Areas*, 6th International Symposium on Mobile Mapping Technology (MMT'09), July 21-24, 2009, Presidente Prudente, Brazil, CD ROM.
96. *Novel sensing techniques, sensor models and integration algorithms supporting various navigation tasks*, presented at OSU ISS Seminar Series, Feb. 4th, 2009 (invited).
97. Toth C. and **Grejner-Brzezinska** D.: *Using GIS Data to Simultaneously Support Georeferencing of High-resolution Imaging Sensors and Improve Feature Extraction*, ISPRS Hannover Workshop on High Resolution Earth Imaging and Geospatial Information, Hannover, Germany, June 2-5, 2010.
98. Workshop: Mapping and Surveying, *Satellite Navigation Science and Technology for Africa*, sponsored by UN and ION, International Center for Theoretical Physics, Trieste, Italy, March 23 - April 9, 2009

99. Keynote speaker: *Application of Artificial Intelligence in Personal Navigation*, 1st International IAG Workshop: Application of Artificial Intelligence in Engineering Geodesy, Dec. 1, 2008, Vienna, Austria.

100. von Frese, R.R.B., J.W. Kim, H. R. Kim, T. E. Leftwich, E. Rangelova, J. Park, and D. A. **Grejner-Brzezinska,** *Regional geopotential field effects of underground nuclear explosions*, International Scientific Studies Conference, Vienna, Austria, June 10-12, 2009.

101. Workshop: *Sensor integration for personal navigation*, presented at the State University of Sao Paulo, Brazil, November 19, 2008 (invited).

102. Workshop: *Terrain-based navigation: LiDAR- and terrestrial scanner-supported navigation concept*, presented at the State University of Sao Paulo, Brazil, November 18, 2008 (invited).

103. Workshop: *Network-Based RTK GPS and Precise Point Positioning*, presented at the State University of Sao Paulo, Brazil, November 17, 2008 (invited).

104. Workshop: *Application of Modern Multi-sensor Integrated Systems in Geodesy and Navigation*, presented at Warsaw Polytechnic, Warsaw, Poland, November 6, 2008 (invited).

105. Workshop: Network-Based RTK GPS and Precise Point Positioning, presented at the University of New South Wales, Sydney, Australia, August 2008.

106. Invited speaker, *Overview of Research Activities at The Ohio State University Satellite Positioning and Inertial Navigation (SPIN) Laboratory*, Chinese Academy of Surveying and Mapping, July 10, 2008, Beijing, China.

107. Workshop: *Terrain-based navigation: LiDAR- and terrestrial scanner-supported navigation concept*, presented at the Land Survey of New Zealand, June 2008 (invited).

108. Workshop: *Sensor integration for personal navigation*, presented at the Land Survey of New Zealand, June 2008 (invited).

109. Workshop: *Personal navigation using artificial intelligence concept*, University of Melbourne, Australia, June 2008 (invited).

110. Toth, C., **Grejner-Brzezinska**, D.A., *Sensor Performance Analysis for Navigation of Miniature Autonomous Systems*, GNC Challenges for Miniature Autonomous Systems Workshop, Fort Walton Beach, FL, October 20-22, 2008.

111. Invited presentation *Global Navigation Satellite System (GNSS): future applications to public health and environmental sensing*, presented at 32nd International Symposium on Remote Sensing of Environment, Ramada Plaza Herradura International Convention Center, San Jose, Costa Rica, June 25–29, 2007.

112. Invited presentation *Seamless and Reliable Personal Navigator*, presented at GEOINT 2007 Symposium, San Antonio, TX, October 21-24, 2007 (**one of the six academic presentations invited nationwide**).

113. *Airborne laser altimetry: DEM production and feature extraction* (co-presented with Charles Toth), workshop presented at 5th International Symposium on Mobile Mapping Technology, Padova, Italy, May 28, 2007.

114. *Societal Requirements, Maintaining a Modern Society*, Chapter 4 (C. Rizos, D. Brzezinska, R. Forsberg, G. Johnston, D. Smith), presented at Global Geodetic Observing System (GGOS) of the International Association of Geodesy (IAG) Writing Team Meeting and Retreat, Oxnard, California, February 19-21, 2007

115. Invited presentation *Multi-sensor personal navigator: system design and calibration*, Joint symposium of Seoul Metropolitan Fora & Second International Workshop on Ubiquitous Pervasive and Internet Mapping, October 23-25, 2006, Seoul, Korea.

116. Workshop *Integrated Multi-Sensor Systems for Direct Georeferencing and Navigation*, September 20, 2006, University of New South Wales, Sydney, Australia.
117. Keynote speaker, *The Institute of Navigation: Advancing Modern Navigation Technologies*, ISPRS Commission I Symposium, Paris–Marne-la-Vallee, France, July 3-6, 2006.
118. Invited presentation *Multi-sensor personal navigator: system design and calibration*, ION Dayton Section luncheon, May 18, 2006, WPAFB.
119. Workshop instructor *Network-Based RTK GPS and Precise Point Positioning*, IEEE/ION PLANS 2006 Meeting, April 24, in San Diego, California.
120. Invited workshop *Multisensor System for Automatic Monitoring of Highway Linear Features: Design, Calibration and Performance Evaluation*, presented at Electronics and Telecommunications Research Institute, Telematics/USN Research Division, Daejeon, Korea, November 4, 2005.
121. Invited workshop *Georeferencing Concept and Airborne Imaging Sensors Supporting Geospatial Information Acquisition*, Joint USGS/NSF Workshop on Geospatial Solutions for Antarctic Research, Baltimore, MD, March 7-8, 2005.
122. Invited presentation, *From Mobile Mapping to Telegeoinformatics: Paradigm Shift in Geospatial Data Acquisition, Processing and Management*, presented at Surveying Week, Korean Society of Surveying, Geodesy, Photogrammetry and Cartography, Seoul, Korea, November 3, 2005.
123. Invited workshop *The role of the Center for Mapping at The Ohio State University as a national incubator for commercialization of research in mobile mapping technology,* presented at Cooperative Research Centre for Spatial Information Commercialization Workshop, University of Melbourne, Melbourne, Australia, September 12-13, 2005.
124. Invited presentation *Accuracy Assessment of Long-Range RTK GPS as a Function of Ionospheric Conditions and Ionospheric Models Used,* Space Weather Week, April 6-8, 2005, Broomfield, Colorado.
125. Invited presentation *Georeferencing Concept and Airborne Imaging Sensors Supporting Geospatial Information Acquisition*, Joint USGS/NSF Workshop on Geospatial Solutions for Antarctic Research, Baltimore, MD, March 7-8, 2005.
126. Invited 2-day workshops *Integrated Systems for Mobile Mapping* presented at the University of New South Wales, Sydney, Australia, December 13-14, 2004.
127. Invited seminar, *GPS Research in Antarctica*, Remote Sensing Data Seminar, organized by Program in Spatial Statistics and Environmental Sciences, and Byrd Polar Research Center, February 25, 2003
128. Invited seminar, *How to find your position with Global Positioning System,* presented at Intel Science Fair, May 16, 2003, Cleveland, OH.
129. Grejner-Brzezinska (2003): GPS/INS Integration for Direct Geo-referencing of Imaging Sensors, invited seminar presented at ODOT Office of Aerial Engineering, March 12.
130. Workshop instructor for the NASA/OhioView workshop for K-12 teachers, held at NASA Glenn Research Center, June 15-19, 2002.
131. *Multisensor Systems for Airborne and Land-based Mapping*, presented at Department of Geomatics *Engineering, University of New South Wales, Sydney, Australia, July 5, 2001.*
132. *Welcome to the World of Earth Satellites*, workshop presented at OSU Take a Daughter to Work Day, April 26, 2001.
133. *Integrated Approach to Precise GPS/LEO Orbit Determination in Support of GPS Meteorology*, lecture presented at Wright Patterson Air Force Base, April 12, 2001.

134. *Integrated GPS/INS/CCD System for Airborne Image Data Acquisition*, lecture presented at National Chiao Tung University, Hsing-Chu, Taiwan, January 4, 2000.
135. *Integrated GPS/INS System in Support of Direct Geo-referencing*, lecture presented at National Cheng Kung University, Tainan, Taiwan, January 5, 2000.
136. *Airborne Integrated Mapping System (AIMS™) and Land-based Applications of GPS/INS/CCD Sensor Assembly*, lecture presented at National Cheng Kung University, Tainan, Taiwan, January 5, 2000.
137. *Multi-sensor Integration and Calibration Aspects*, lecture presented at National Cheng Kung University, Tainan, Taiwan, January 6, 2000.
138. *GPS: Past, Present and Future*, presented to the Columbus Ophthalmological and Otolaryngological Society, October 4, 1999.
139. Workshop instructor on *Airborne Remote Sensing Multi-Sensor System: Development, Testing and Applications*, GPS in Forestry: Western Workshop, November 16-18, Kelowna, BC.
140. *Large Scale Mapping with AIMS™,* 8th Annual Ohio GIS Conference, October 21-23, 1998, Columbus, OH.
141. Workshop instructor on *Integrated Geospatial Data Acquisition Systems* at the ISPRS Commission III Symposium, July 6-9, 1998, Columbus, OH.
142. *Where in the World Are You? GPS Can Help*, presented at Columbus Center of Science and Industry, May 4, 1998.
143. Workshop instructor *on GPS: Theory and Practice*, at the Symposium on the Application of Geophysics to Environmental and Engineering Problems, March 26, 1998, Chicago IL.
144. *Airborne Integrated Mapping System (AIMS*), 7th Annual Ohio GIS Conference, October 8-10, 1997, Columbus, OH.
145. *High Accuracy Airborne Integrated Mapping System*, presented at IAG Scientific Assembly, Rio De Janeiro, Brazil, September 3-9, 1997 (invited).

OTHER ACTIVITIES AND SERVICE

- Executive Leadership in Academic Technology and Engineering (ELATE), Drexel University, 2015-2016
- Committee on Institutional Cooperation (CIC) – currently, the Big Ten Academic Alliance - Leadership Workshop 2015
- Promotion and tenure reviewer, University of Calgary and University of New Brunswick, Canada, University of Pittsburgh, Miami University, University of Maine, University of Connecticut, University of Texas at Austin, University of New South Wales and University of Melbourne, Australia, University of Khartoum, Sudan, Vienna University of Technology, Austria.
- External PhD reviewer, University of Calgary and University of New Brunswick, Canada, University of New South Wales and University of Melbourne, Australia, Vienna University of Technology, Austria.
- University Discovery Themes Faculty Advisory Committee, 2014-16

- COE Executive Committee and COE Research Committee, 2014-prsent
- OSU Senate alternate, 2006-2010
- OSU Gateway Committee: Global Strategies and International Affairs, Central and East European Faculty Advisory Committee, 2010-2011
- OSU College of Engineering (COE) Strategic Planning Task Force – Aerospace, Aviation and Flight, 2011-2012
- OSU COE Strategic Planning Task Force – Sensing, 2012
- OSU COE Promotion and Tenure Committee, 2009-2011
- The Ohio State University President and Provost Leadership Institute, 2005-2007
- OSU COE Experiment Station Council, since 2009
- OSU COE College Research Committee, since 2008
- OSU COE Diversity Excellence Council, 2008-2010
- OSU COE Performance Plan Acceleration Task force (PPAT) Evaluation Subcommittee, 2009
- OSU COE Strategic Planning Committee: Budget, 2005–2006
- OSU COE Strategic Planning Committee: Graduate Studies, 2005–2006
- OSU COE Strategic Planning Committee: Computation and Information Research Thrusts, 2005–2006
- OSU COE Strategic Planning Subcommittee: Financial Aid for Graduate Education, 2006
- OSU COE Institute of Sensing Systems (ISS) Advisory Board, since 2007
- OSU COE Engineering Honors Committee, 1999-2008
- OSU COE Undergraduate Studies Committee, 1999-2008
- OSU COE Core Curriculum and UG Services, 1999–2000
- Judge in the Engineering Science Area for the Denman Undergraduate Research Forum, May 18, 2000
- Promotional Session with the freshman engineers, October 3 and November 16, 2000
- Chair, Graduate Studies Committee Geodetic Science and Surveying, 2004-2007
- CEEGS Chair Search Committee, 2000/2001, and 2005
- Geomatics Faculty Search Committee, 2006/2007
- Image Understanding Faculty Search Committee, 2006
- Judge for district and state Science Fair, Ohio Academy of Sciences, since 2001

REFERENCES: available upon request