

# F. ANTONIO MEDRANO

## *Curriculum Vitae*

Texas A&M University–Corpus Christi (TAMUCC)  
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Corpus Christi, TX 78412

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### EDUCATION

- Ph.D.      University of California, Santa Barbara, 2014  
                Department of Geography  
                Emphasis on Modeling, Measurement, and Computation
- M.S.      University of California, Santa Barbara, 2009  
                Media Arts and Technology Program  
                Emphasis on Multimedia Engineering
- B.S.      Harvey Mudd College, 2002  
                Engineering, *with honors*  
                Emphasis on Systems Engineering

### ACADEMIC AND RESEARCH POSITIONS

- Assistant Professor** Texas A&M University–Corpus Christi (January 2019–present)  
Department of Computer Science, Geospatial Computer Science Program  
Conrad Blucher Institute for Surveying and Science
- Postdoctoral Researcher** University of California, Santa Barbara (August 2017–December 2018)  
Bren School of Environmental Science & Management
- Co-Founder** Arogi, Inc., Santa Barbara, CA (February 2016–February 2017)
- Postdoctoral Researcher** University of California, Santa Barbara (April 2015–January 2016)  
Center for Spatial Studies, Department of Geography
- Visiting Professor** Universitat Jaume I, Castellón de la Plana, Spain (September–October 2015)  
*Geographic Information Systems I (SIW009)*

### GRANTS AND FELLOWSHIPS

- 2024–2025 TEES Annual Research Conference (TARC), Intelligent EV Charging Coordination During Natural Disasters, TAMU system seed grant PI, \$2,500
- 2020–2025 NSF AI Institute: Artificial Intelligence for Environmental Sciences, #2019758, \$2.579M TAMUCC sub-award Co-PI (\$20M total award, Senior Personnel)
- 2016 NSF SBIR Phase I: Advanced Data Analytics for Public Safety, #1549445, \$149,905
- 2010–2014 Graduate Research Assistantship, funding from Argonne National Laboratories, (Summer–Fall 2010, Fall 2011–Winter 2013, Summer–Winter 2014)
- 2010 University of California Transportation Center Graduate Fellowship, \$30,000

## REFEREED JOURNAL ARTICLES AND BOOK CHAPTERS

- 2025 Hajiesmaeli, M., P. Tissot, F.A. Medrano, M.J. Starek. ViT-CoastDEM: A Deep Learning-Based Method to Estimate Beach Topography from Paired Non-Metric Cameras. *Submitted, pending review.*
- 2025 Church R.L., S. Wang, F.A. Medrano. A new fast-hybrid modeling approach for solving the p-median problem: CAMARO. *Submitted, pending review.*
- 2025 Vicens-Miquel, M., P. Tissot, K. Colburn, D. Williams, M.J. Starek, J. Pilartes-Congo, M. Kastl, S. Stephenson, F.A. Medrano. Machine-Learning Predictions for Total Water Levels on a Sandy Beach. *Journal of Coastal Research.* **41**(1): 57-72.  
DOI: [10.2112/JCOASTRES-D-24-00016.1](https://doi.org/10.2112/JCOASTRES-D-24-00016.1)
- 2024 Vicens-Miquel, M., P. Tissot, F.A. Medrano. Exploring Deep Learning Methods for Short-Term Tide Gauge Water Level Predictions. *Water.* DOI: [10.3390/w16202886](https://doi.org/10.3390/w16202886)
- 2024 Phadke, A., F.A. Medrano, M.J. Starek. U-SMART: Unified Swarm Management and Resource Tracking Framework for Unoccupied Aerial Vehicles. *Drone Systems and Applications.* DOI: [10.1139/dsa-2024-0007](https://doi.org/10.1139/dsa-2024-0007)
- 2024 Kesireddy, A., F.A. Medrano. Elite Multi-Criteria Decision Making—Pareto Front Optimization in Multi-Objective Optimization. *Algorithms.* **17**(5), 206.  
DOI: [10.3390/a17050206](https://doi.org/10.3390/a17050206)
- 2024 Phadke, A., F.A. Medrano, T. Chu, C.N. Sekharan, M.J. Starek. Modeling Wind and Obstacle Disturbances for Effective Performance Observations and Analysis of Resilience in UAV Swarms. *Aerospace.* **24**(11), 237. DOI: [10.3390/aerospace11030237](https://doi.org/10.3390/aerospace11030237)
- 2024 Phadke, A., F.A. Medrano. Increasing Operational Resiliency of UAV Swarms: An Agent-Focused Search and Rescue Framework. *Aerospace Research Communications.* **1**:12420. DOI: [10.3389/arc.2023.12420](https://doi.org/10.3389/arc.2023.12420)
- 2023 Phadke, A., F.A. Medrano. Examining Application-Specific Resiliency Implementations in UAV Swarm Scenarios. *Intelligence & Robotics.* **3**(3): 436-61.  
DOI: [10.20517/ir.2023.27](https://doi.org/10.20517/ir.2023.27)
- 2023 Phadke, A., F.A. Medrano, C.N. Sekharan, T. Chu. Designing UAV Swarm Experiments: A Simulator Selection and Experiment Design Process. *Sensors.* **23**(17), 7359.  
DOI: [10.3390/s23177359](https://doi.org/10.3390/s23177359)
- 2022 Vicens-Miquel, M., F.A. Medrano, P.E. Tissot, H. Kamangir, M.J. Starek, K. Colburn. A Deep Learning Based Method to Delineate the Wet/Dry Shoreline and Compute its Elevation Using High-Resolution UAS Imagery. *Remote Sensing.* **14**(23), 5990.  
DOI: [10.3390/rs14235990](https://doi.org/10.3390/rs14235990)
- 2022 Phadke, A., F.A. Medrano. Towards Resilient UAV Swarms—A Breakdown of Resiliency Requirements in UAV Swarms. *Drones.* **6**(11), 340.  
DOI: [10.3390/drones6110340](https://doi.org/10.3390/drones6110340)
- 2021 Medrano, F.A. Effects of Raster Terrain Representation on GIS Shortest Path Analysis. *PLOS ONE.* **16**(4). DOI: [10.1371/journal.pone.0250106](https://doi.org/10.1371/journal.pone.0250106)
- 2020 Medrano, F.A. The Complete Vertex  $p$ -Center Problem. *EURO Journal on Computational Optimization* **8**, 327–343. DOI: [10.1007/s13675-020-00131-y](https://doi.org/10.1007/s13675-020-00131-y).

- 2016 Lafia, S., J. Jablonski, W. Kuhn, S. Cooley, F.A. Medrano. Spatial Discovery and the Research Library. *Transactions in GIS*. **20**, 399–412. DOI: [10.1111/tgis.12235](https://doi.org/10.1111/tgis.12235).
- 2015 Medrano, F.A., R.L. Church. A Parallel Computing Framework for Finding the Supported Solutions to a Biobjective Network Optimization Problem. *Journal of Multi-Criteria Decision Analysis*. **22**, 244-259. DOI: [10.1002/mcda.1541](https://doi.org/10.1002/mcda.1541).
- 2014 Scaparra, M.P., R.L. Church, F.A. Medrano. Corridor Location: The Multi-Gateway Shortest Path Model. *Journal of Geographical Systems*. **16**, 287–309. DOI: [10.1007/s10109-014-0197-8](https://doi.org/10.1007/s10109-014-0197-8).
- 2014 Medrano, F.A., R.L. Church. Corridor Location for Infrastructure Development: A Fast Bi-Objective Shortest Path Method for Approximating the Pareto Frontier. *International Regional Science Review*. **37**, 129–148. DOI: [10.1177/0160017613507772](https://doi.org/10.1177/0160017613507772).
- 2013 Medrano, F.A., R.L. Church. “A Parallel Algorithm to Solve Near-Shortest Path Problems on Raster Graphs.” In Shi, X., Kindratenko, V. & Yang, C. eds. *Modern accelerator technologies for geographic information science*. Springer, 83–94. DOI: [10.1007/978-1-4614-8745-6\\_7](https://doi.org/10.1007/978-1-4614-8745-6_7).

## CONFERENCE PROCEEDINGS

- 2024 Hajiesmaeli, M., F.A. Medrano, P. Tissot. Generation of Coastal Area DEMs Using Oblique Stereo Imagery from Non-Metric Cameras with SfM Techniques, *i-GUIDE Forum 2024*, Jackson Hole, WY, October 14-16, 2024. DOI: [10.5703/1288284317809](https://doi.org/10.5703/1288284317809)
- 2023 Phadke, A., F.A. Medrano, T. Chu, C. Sekharan, M. Starek. D2D (Drone2Drone): a search and rescue framework module for finding lost UAV swarm agents, *The 21st International Conference on Embedded Systems (ESCS23)*, Las Vegas, Nevada, July 24-27, 2023. DOI: [10.1109/CSCE60160.2023.00153](https://doi.org/10.1109/CSCE60160.2023.00153).
- 2022 Phadke, A., F.A. Medrano, S. Ustymenko, T. Chu. A Study on the Inclusion of Heterogeneous Agents in Unmanned Vehicle Swarms, *The 20th International Conference on Embedded Systems (ESCS22)*, Las Vegas, Nevada, July 25-28, 2022. (*Accepted, in press*)
- 2022 Vicens Miquel, M., F.A. Medrano, P. Tissot, H. Kamangir, M. Starek. Deep Learning Automatic Detection of The Wet/Dry Shoreline at Fish Pass, Texas, 2022 *International Geoscience and Remote Sensing Symposium (IGARSS 2022)*, Kuala Lumpur, Malaysia, July 17-22, 2022. DOI: [10.1109/IGARSS46834.2022.9884633](https://doi.org/10.1109/IGARSS46834.2022.9884633)
- 2022 Phadke, A., F.A. Medrano, T. Chu. Engineering resiliency in UAV Swarms—A bibliographic analysis, *2022 International Symposium on Intelligent Unmanned Systems and artificial Intelligence (SIUSAI 2022)*, Macao, China, April 22-24, 2022. DOI: [10.1088/1742-6596/2330/1/012007](https://doi.org/10.1088/1742-6596/2330/1/012007)
- 2022 Phadke, A., F.A. Medrano, J. Brahmbhatt, S. Ustymenko. A Framework for an Optimized Smart Energy System, *2022 International Symposium on Electrical, Electronics and Information Engineering (ISEEIE 2022)*, Chiang Mai, Thailand, February 25-27, 2022. DOI: [10.1109/ISEEIE55684.2022.00049](https://doi.org/10.1109/ISEEIE55684.2022.00049)
- 2022 Phadke, A., F.A. Medrano, S. Ustymenko. Applications of Blockchain in E-government. *2022 International Symposium on Electrical, Electronics and Information Engineering (ISEEIE 2022)*, Chiang Mai, Thailand, February 25-27, 2022. DOI: [10.1109/ISEEIE55684.2022.00035](https://doi.org/10.1109/ISEEIE55684.2022.00035)

- 2021 Phadke, A., F.A. Medrano, J. Brahmbhatt. A Conceptual Framework for a Blockchain-based Tax payment Financial Service, *2021 International Conference on Computational Science and Computational Intelligence (CSCI 2021)*, December 15-17, 2021, Las Vegas, Nevada. DOI: [10.1109/CSCI54926.2021.00296](https://doi.org/10.1109/CSCI54926.2021.00296)
- 2021 Phadke, A., F.A. Medrano, S. Ustymenko. A Review of Vehicular Micro Clouds. *2021 International Conference on Computational Science and Computational Intelligence (CSCI 2021)*, December 15-17, 2021, Las Vegas, Nevada. DOI: [10.1109/CSCI54926.2021.00139](https://doi.org/10.1109/CSCI54926.2021.00139)

## **RESEARCH REPORTS, DISSERTATIONS, AND OTHER PUBLICATIONS**

- 2024 Phadke, A., F.A. Medrano, C.N. Sekharan, T. Chu. An Analysis of Trends in UAV Swarm Implementations in Current Research: Simulation Versus Hardware. *Drone Systems and Applications*. **12**: 1-10. DOI: [10.1139/dsa-2023-0099](https://doi.org/10.1139/dsa-2023-0099)
- 2023 Phadke, A., J. Boyd, F.A. Medrano, M. Starek. Navigating the skies: examining the FAA's remote identification rule for unmanned aircraft systems. *Drone Systems and Applications*. **11**: 1-4. DOI: [10.1139/dsa-2023-0029](https://doi.org/10.1139/dsa-2023-0029)
- 2022 Phadke, A., F.A. Medrano. A conceptual Blockchain backed framework for Healthcare Data access – Extended abstract series. *Academia Letters*, Article 4944. DOI: [10.20935/AL4944](https://doi.org/10.20935/AL4944)
- 2021 Phadke, A., A. Medrano. A Resilient Multi-UAV System of Systems (SoS). *Academia Letters*, Article 1659. DOI: [10.20935/AL1659](https://doi.org/10.20935/AL1659)
- 2018 Church, R., F.A. Medrano. Location-Allocation Modeling and GIS. *The Geographic Information Science & Technology Body of Knowledge (3rd Quarter 2018 Edition)*, John P. Wilson (ed). DOI: [10.22224/gistbok/2018.3.4](https://doi.org/10.22224/gistbok/2018.3.4).
- 2016 Kuhn, W., M. Hegarty, A. Ballatore, K. Doehner, A. Medrano, D. Janelle. Report on the Center for Spatial Studies. *Center for Spatial Studies*, University of California at Santa Barbara. Retrieved from <https://escholarship.org/uc/item/02s8z0vv>
- 2015 Cooley, S., S. Lafia, A. Medrano, D. Stephens, W. Kuhn. Spatial Discovery Expert Meeting—Final Report. *Center for Spatial Studies and UCSB Library*, University of California, Santa Barbara. Retrieved from <https://escholarship.org/uc/item/64p820kg>
- 2014 Medrano, F.A. Corridor Location: Generating Competitive and Efficient Route Alternatives. *Ph.D. Dissertation*, Geography, University of California, Santa Barbara. Retrieved from <https://escholarship.org/uc/item/4g92536t>
- 2014 Medrano, F.A., R.L. Church. A Parallel Biobjective Shortest Path Algorithm. *Geotrans Report 2014-12-01*, University of California, Santa Barbara.
- 2013 Medrano, F.A., R.L. Church. Strahler Stream Order Inspired Gateway Shortest Path Subsets. *Geotrans Report 2013-12-01*, University of California, Santa Barbara.
- 2013 Medrano, F.A., R.L. Church. An Exact Biobjective Shortest Path Method with Gateway Heuristic and Supported Point Upper-Bounds. *Geotrans Report 2013-06-01*, University of California, Santa Barbara.
- 2012 Medrano, F.A., R.L. Church. A new parallel algorithm to solve the near-shortest-path problem on raster graphs. *Geotrans Report RP-01-12-01*, University of California, Santa Barbara.

- 2011 Medrano, F.A., R.L. Church. Transmission corridor location: Multi-path alternative generation using the k-shortest path method. *Geotrans Report RP-01-11-01*, University of California, Santa Barbara.
- 2009 Medrano, F.A. *Optical position sensors with applications in servo feedback subwoofer control*. M.S. Thesis, Media Arts and Technology Program, University of California, Santa Barbara. ([link](#)).

## TEACHING HISTORY

### Texas A&M University–Corpus Christi (TAMUCC)

- PhD level: GSCS-6331: Advanced Geospatial Computing
- MS level: GSEN-6390: Introduction to Optimization for Geographic Problems  
GSEN-6395: Geospatial Engineering Research
- BS level: GISC-2438: Web Map Development (ArcGIS Maps SDK for JavaScript)  
GISC-3421: Visualization for GIS (Cartography with ArcGIS Pro)  
COSC-3351: Internet Programming

### University of California Santa Barbara (UCSB)

- MS level: MAT-202: Mathematics for Digital Signal Processing
- BS level: GEOG-W12: Maps and Spatial Reasoning  
GEOG-191: Introduction to Optimization for Geographic Problems

### Universitat Jaume I (UJI)

- MS level: GIS-1: Geographic Information Systems I

## STUDENT MENTORSHIP

### PhD Chair

- Marina Vicens-Miquel (graduated Spring 2024, now a post-doc at the University of Oklahoma)
- Abhishek Phadke (graduated Spring 2024, now a tenure track assistant professor of computer science at Christopher Newport University (CNU))
- Adarsh Kesireddy (Summer 2021 – Summer 2024)

### PhD Committee

- Mahmoud Eldefrawy (graduated Spring 2024)
- Evan Krell (graduated Fall 2024)

### MS Chair

- Mona Hajiesmaeli (graduated Fall 2024)
- Gabriel Ibiassi Nambila (graduated Summer 2023)

### MS Committee

- Sabin Pandey (graduated Summer 2025)
- Regmi Pratikshya (graduated Summer 2023)
- Rafael Gabriel-Jose (graduated Spring 2022)

## MERITORIOUS STUDENT ACCOMPLISHMENTS

- 2024 Spring TAMUCC Three Minute Thesis (3MT) Competition, Third Place and People's Choice Award, Abhishek Phadke, \$500
- 2023-2024 TAMUCC Division of Research and Innovation Student Research Competition, Abhishek Phadke, \$800
- 2023 Spring TAMUCC Three Minute Thesis (3MT) Competition, Third Place and People's Choice Award, Abhishek Phadke, \$500
- 2022 AGU Fall Meeting Outstanding Student Presentation Award, Marina Vicens-Miquel, for:
  - Vicens-Miquel, M., F.A. Medrano, P.E. Tissot, H. Kamangir, M. Starek. Generalized Model for Wet/Dry Shoreline Detection and Total Water Level Elevation Using Deep Learning. *Poster presentation at the AGU Fall Meeting 2022*, Chicago, IL, USA, December 12-16.
- 2021-2022 TAMUCC Division of Research and Innovation Student Research Competition, Abhishek Phadke, \$775
- 2021 Spring TAMUCC Three Minute Thesis (3MT) Competition, Third Place and People's Choice Award, Abhishek Phadke, \$500
- 2020-2021 TAMUCC Division of Research and Innovation Student Research Competition, Marina Vicens Miquel, \$800

## CONFERENCE PRESENTATIONS AND INVITED TALKS

- 2022 F.A. Medrano. "The Complete Vertex  $p$ -Center Problem." *University of Oklahoma Industrial and Systems Engineering Graduate Seminar*, Norman, OK. February 4, 2022.
- 2019 F.A. Medrano. "The Complete Vertex  $p$ -Center Problem: An Exact Set Covering Method with Brute Force Combinatorics." *INFORMS Annual Meeting*, Seattle, WA. October 20–23, 2019.
- 2019 F.A. Medrano. "The Complete  $p$ -Center Problem: A Planning Tool for Urban Location Coverage Optimization." *International Workshop on Urban Operations Research (IWUOR 2019)*, Nagoya, Japan, July 19–21, 2019.
- 2019 F.A. Medrano. "The Complete Vertex  $p$ -Center Problem: An Exact Set Covering Method." *30th European Conference on Operational Research (EURO)*, Dublin, Ireland, June 23–26, 2019.
- 2019 F.A. Medrano. "A Set Covering Trade-Off to Solve the Complete Vertex  $p$ -Center Problem." *25th International Conference on Multi-Criteria Decision Making (MCDM)*, Istanbul, Turkey. June 16–21, 2019.
- 2019 F.A. Medrano. "Effects of Raster Terrain Representation on GIS Spatial Network Analysis." *International Network Optimization Conference (INOC)*, Avignon, France, June 12–14, 2019.
- 2019 F.A. Medrano. "Brute Force Spatial Optimization: When It's Okay." *American Association of Geographers (AAG) Annual Meeting*, Washington DC. April 3–7, 2019.

- 2018 F.A. Medrano. “The Complete Vertex p-Center Problem: A Fast Set Covering Method.” *American Association of Geographers (AAG) Annual Meeting*, New Orleans, LA. April 10–14, 2018.
- 2018 F.A. Medrano “GIS Data For Spatial Analysis: What To Avoid At All Costs!”, *Bren School of Environmental Science & Management Seminar*, University of California, Santa Barbara. March 5, 2018.
- 2018 F.A. Medrano. “Understanding the Effects of Attribute Scale and Connectivity on GIS Raster Network Analysis.” *Western Regional Science Association Annual Meeting (WRSA)*, Pasadena, CA. February 11–14, 2018.
- 2017 F.A. Medrano. “The Complete p-Center Problem: A Fast Set Covering Method.” *64th Annual North American Meetings of the RSAI (NARSC)*, Vancouver, BC. November 8–11, 2017.
- 2017 F.A. Medrano. “GIS Data for Spatial Analysis: What to Avoid at All Costs!” *Environmental Studies Department seminar*, Zamorano University, Honduras. March 24, 2017
- 2017 F.A. Medrano. “Spatial Analysis.” *GIS course guest lecture*, Zamorano University, Honduras. March 24, 2017
- 2016 F.A. Medrano. “The Clarity of Disruption.” *TEDx Santa Barbara*, Santa Barbara, CA. August 20, 2016. (<https://tedxsantabarbara.com/2016/antonio-medrano/>)
- 2016 F.A. Medrano. “Attribute Scale on GIS Raster Data: What to Avoid at All Costs!” *ThinkSpatial brownbag seminar at the Center for Spatial Studies*, University of California, Santa Barbara. January 26, 2016.
- 2015 F.A. Medrano and R.L. Church. “GIS Raster Data for Multi-Objective Shortest Path Analysis: The Elephant in the Room.” *62nd Annual North American Meetings of the RSAI (NARSC)*, Portland, OR. November 11–14, 2015.
- 2015 F.A. Medrano and R.L. Church. “Spatial Data for Multiobjective Shortest Path Analyses: Small Decisions with Large Consequences.” *INFORMS Annual Meeting*, Philadelphia, PA. November 1–4, 2015.
- 2015 F.A. Medrano. “Modeling Wicked Spatial Problems: Lessons Learned from my Ph.D. Dissertation.” *Invited talk at the Center for Spatial Studies*, University of California, Santa Barbara, February 18, 2015.
- 2014 F.A. Medrano. “Corridor Location: Generating Competitive and Efficient Route Alternatives.” *Ph.D. Defense Presentation*, University of California, Santa Barbara, December 5, 2014.
- 2014 F.A. Medrano and R.L. Church. “A Simple Framework for Parallel Multi-Objective Optimization using Java.” *61st Annual North American Meetings of the RSAI (NARSC)*, Bethesda, MD. November 12–15, 2014.
- 2014 F.A. Medrano and R.L. Church. “A Simple Framework for Parallel Multi-Objective Optimization using Java” *INFORMS Annual Meeting*, San Francisco, CA. November 9–12, 2014.
- 2014 F.A. Medrano and R.L. Church. “A Simple Framework for Parallel Multi-Objective Optimization using JAVA.” *20<sup>th</sup> Conference of the International Federation of Operational Research Societies (IFORS)*, Barcelona, Spain. July 13–18, 2014.

- 2013 F.A. Medrano and R.L. Church. "Fast Generation of Spatially Diverse One-To-One Shortest Path Options." *60th Annual North American Meetings of the RSAI (NARSC)*, Atlanta, GA. November 13–16, 2013.
- 2013 F.A. Medrano and R.L. Church. "Between Terrain and an NP-hard Place: Challenges of Solving Multiobjective Shortest Paths on GIS Networks." *INFORMS Annual Meeting*, Minneapolis, MN. October 6–9, 2013.
- 2013 F.A. Medrano and R.L. Church. "Improved Upper Bounds for a Two-Phase Biobjective Shortest Path Algorithm." *International Conference on Multi-Criteria Decision Making (MCDM)*, Málaga, Spain. June 16–21, 2013.
- 2013 F.A. Medrano and R.L. Church. "Corridor Location for Infrastructure Development: Solving For The Pareto-Frontier Of Solutions." *Western Regional Science Association Annual Meeting (WRSA)*, Santa Barbara, CA. February 24–27, 2013.
- 2013 F.A. Medrano and R.L. Church. "New Methods for Solving the Bi-Objective Shortest Path Problem." *13th INFORMS Computing Society Conference (ICS)*, Santa Fe, NM. January 6–8, 2013.
- 2012 F.A. Medrano. "Gateway to Computationally Efficient Corridor Location." *Invited Talk at Argonne National Laboratory*, Lemont, IL. November 28, 2013.
- 2012 F.A. Medrano and R.L. Church. "A Parallel Algorithm to Solve Near-Shortest Path Problems on Raster Graphs." *MAT4GIScience 2012 (workshop associated with GIScience 2012)*, Columbus, OH. September 18, 2012.
- 2012 F.A. Medrano and R.L. Church. "An Efficient Heuristic for Generating Unsupported Non-Dominated Solutions in a Bi-Objective Shortest Path Problem." *International Symposium on Location Decisions (ISOLDE XII)*, Nagoya & Kyoto, Japan. July 19–24, 2012.
- 2011 F.A. Medrano and R.L. Church. "Modeling Corridor Location Alternatives: New Methods and Future R&D Needs." *Invited talk at the Department of Energy Headquarters*, Washington DC. November 1, 2011.
- 2010 F.A. Medrano and R.L. Church. "Transmission Corridor Location: A Wicked Public Problem." *Invited talk at Argonne National Laboratory*, Lemont, IL. November 18, 2010.
- 2009 F.A. Medrano and R.L. Church. "Differentiated Least Cost Path Selection on Raster Networks." *Colloquium for the Department of Geography*, University of California, Santa Barbara. October 30, 2009.
- 2009 F.A. Medrano. "Optical Position Sensors with Applications in Servo Feedback Subwoofer Control." *Masters Defense Presentation*, University of California, Santa Barbara. February 13, 2009.

## CONFERENCE ORGANIZATION

- 2019 Program committee, The 2nd AAG Symposium on GeoAI and Deep Learning for Geospatial Research, AAG Annual Meeting, Washington DC, April 2019
- 2015 Spatial Information for Human Health (with M. Castro, M. Duckham and W. Kuhn) Santa Barbara, CA. December 9–11, 2015.
- 2015 Expert Meeting on Spatial Discovery (with D. Stephens and W. Kuhn) Santa Barbara, CA. June 17–18, 2015.

## **CERTIFICATIONS, AWARDS, AND HONORS**

Tau Beta Pi engineering honor society, Omega chapter, member  
State of California, Engineer in Training, #EIT115948  
California Non-Residential Title 24-2001 Certified Energy Plans Examiner

## **PROFESSIONAL SOCIETY MEMBERSHIPS**

Association of American Geographers (AAG) – *lifetime member*  
- Spatial Analysis and Modeling (SAM)  
University Consortium for Geographic Information Science (UCGIS) – *TAMUCC delegate*  
Institute for Operations Research and the Management Sciences (INFORMS)  
- Section on Location Analysis (SOLA)  
- Multiple Criteria Decision Making (MCDM) Section  
Regional Science Association International (RSAI)

## **UNIVERSITY SERVICE & COMMITTEES**

- TAMUCC Faculty Senate, Representative (Fall 2021 – Spring 2024)
- CoECS Steering Committee, Member (Fall 2022 – Summer 2025)
- CoECS Library Committee, Member (Fall 2022 – Summer 2025)
- TAMUCC Ad-Hoc Course Evaluation Committee, Member (Fall 2021 – Spring 2022)
- Science & Engr. Research Enhancement Committee, Member (Fall 2020 – Spring 2022)
- Wes Tunnel Distinguished Lecturers Selection Committee (Fall 2019 – Spring 2021)
- Hiring Committee, Department of Computer Science, TAMUCC (2019–2024, various positions)
- Hiring Committee, Conrad Blucher Institute, TAMUCC (2019)

## **JOURNAL REVIEWER**

*ACM Transactions on Spatial Algorithms and Systems*  
*Computers, Environment and Urban Systems*  
*Computers & Operations Research*  
*Geographic Information Science & Technology Body of Knowledge*  
*Geographical Analysis*  
*International Journal of Geographic Information Science*  
*Journal of Geographical Systems*  
*MDPI Aerospace*  
*MDPI Drones*  
*MDPI Electronics*  
*MDPI Journal of Marine Science and Engineering*  
*MDPI Remote Sensing*  
*Networks and Spatial Economics*  
*Operations Research for Healthcare*  
*PLOS ONE*  
*Socio-Economic Planning Sciences*  
*The Professional Geographer*  
*Transactions in GIS*