Magdalena I. Asborno

Civil Engineer, Ph.D. | masborno@ara.com | Magdalena.Asborno@usace.army.mil

FORMAL EDUCATION

PhD	Civil Engineering (Transportation Planning), University of Arkansas, Fayetteville, July 2020. Advisor: Dr. S. Hernandez. GPA: 4/4.
M.S.	Petroleum Refining, Gas and Marketing, Repsol Energy Superior Institute, Madrid, Spain. July 2007.
Certification	Transportation - Inspection & condition evaluation of roads and bridges in service, National University of La Plata (UNLP), Argentina. December 2003.
B.S.	Civil Engineer and Transportation Engineer, UNLP, December 2003.

HIGHLIGHTS

- Over 20 years' progressive responsibilities in multimodal transportation and public infrastructure engineering projects.
- 9+ years of engineering experience in waterborne transportation, AI/ML modeling and analysis.
- Demonstrated ability to solve complex problems. Project planning, management, and resource estimation for complex international projects to specifications of over 1B USD. Main point of contact with client.
- Highly skilled, demonstrated proficiency with Python programming, data mining, analysis via GIS, SQL, optimization, and machine learning modeling applied to freight transportation research, supporting strategic decision-making.

RESEARCH & PROFESSIONAL ACTIVITIES

Applied Research Associates — 10/05/2020 – Present

Senior Consultant – Research Civil Engineer | Vicksburg, MS.

Dedicated to the U.S. Army Corps of Engineers (USACE) Engineer Research and Developing Center (ERDC), Coastal and Hydraulics Laboratory (CHL), Coastal Engineering Branch (CEB).

- Applied research in multimodal freight data fusion, analysis, and commodity-based modeling for transportation planning.
- Dredging data mining and analysis with Artificial Intelligence. Machine learning modeling to forecast short-term dredging needs within a multivariate, multistep timeseries forecasting framework.
- Development of complex problem-solving models and tools to inform strategic decision-making in transportation infrastructure investment, focused on the waterway system.
- Main tools used: Python programming, GIS, SQL, machine learning algorithms.

Technical lead of the following work units:

- Machine learning model to forecast short-term dredging needs in Southwest Pass (python)
- Multimodal freight network model (GIS digital twin of multimodal transportation system, including routing optimization models)

University of Arkansas (UARK) — 08/15/2016 – 08/20/2020

PhD Candidate and Graduate Research Assistant at the Freight Transportation Data Lab, Civil Engineering Department | Fayetteville, AR.

Highlights:

- Multimodal freight data fusion, analysis, and commodity-based modeling for transportation planning.
- Development of optimization and machine learning models applied to freight transportation research, supporting strategic decision-making by describing and quantifying commodity flow.
- Commodity-based multimodal modeling for transportation planning. Network modeling including marine & roadways.
- Support to strategic transportation planning and investment decision-making for complex problems. National, State-wide, and local (port system) complexity geospatial analysis.
- Main tools used: GIS, SQL, python programming.

Main projects:

- Commodity-based freight activity on inland waterways through the fusion of public datasets for multimodal transportation planning.
- Combining truck and vessel tracking data to estimate the performance and impact of inland ports. Sponsored by the Maritime Transportation Research and Education Center (MarTREC).
- Evaluating the Performance of Intermodal Connectors in Arkansas. Sponsored by MarTREC.

- Locating Transload Facilities to Ease Highway Congestion and Safeguard the Environment. Sponsored by ARDOT.

Obrascon Huarte Lain (OHL) S.A. **11/01/2007 – 12/15/2015**

Project Manager | Worldwide

Main Transportation Projects:

- Doha Metro Major Stations, New Orbital Freight Highway, Jamal Abdul Naseer Street Viaduct, in Gulf Cooperation Council Countries (Middle East)
- Toronto Metro, and Highway 407 East Extension (Canada)
- Dublin Metro North (Europe)
- Punta Pereyra Multimodal Freight Terminal (South America)

Head of Estimation | Procurement & Contract Manager | Doha, Qatar 05/01/2012 – 12/15/2015

Main projects: **Doha Metro Major Stations**, **New Orbital Freight Highway**, Sheikh Khalifa Medical City, Sheikh Zayed National Museum, Sidra Medical and Research Center, and **Jamal Abdul Naseer Street Viaduct**.

Bid Management. Development of subcontracting packaging strategy. Development of commodity-based modeling forecasts for strategic procurement. Support to Joint Venture management strategic decision-making in complex project. Tender documentation development, consultant and subcontractor market analysis and pre-qualification. Main point of contact with Client's Commercial Manager.

Project data analysis and modeling, including freight transportation data projects. Bid manager for design-build iconic projects, in the region where OHL had its widest tendering portfolio.

Technical Manager | Montreal & Toronto, Canada 03/31/2009 – 04/30/2012

Main projects: **Toronto Metro**, **Highway 407 East Extension**, McGill University Health Centre.

Bid manager of Toronto Metro, first contract awarded to the company in Canada. Company representative in Ontario, reporting directly to North America's Executive VP. Bid management for the design-build JV. Supervision of management team (legal, planning, cost estimating, design, insurance), including supervision of data analysis and optimization models developed during planning stages of transportation project (design), among others. Main point of contact with client representative. Inter-departmental and intra-company coordination.

Civil Engineer | Dublin, Ireland; Montreal, Canada; and Buenos Aires, Argentina 11/01/2007 – 03/30/2007

Main projects: **multimodal freight port terminal** in Punta Pereyra, Uruguay; **Dublin Metro North**; McGill University Health Center; Niagara Health System Center.

Estimating manager of the design and construction JV (Dublin Metro North). Development of a project-specific cost estimation system, data fusion, and coordination of efforts made by a team of over 25 estimators from 5 different companies and countries. Development of technical documentation for submission of tenders of complex projects.

Cencosud S.A. – Jr. Project Manager | Argentina **12/16/2005 - 07/31/2006**

Client representative during construction and commissioning of retail center.

ExxonMobil – Intern & Jr Project Manager | Argentina **02/02/2004 – 12/15/2005**

Main project: reconstruction and capacity upgrade of **multimodal freight port terminal** ("Berth H"), including waterway and pipeline systems. Data mining, fusion and analysis during planning and execution stages of multimodal freight transportation project. Commodity freight-based (petroleum) analysis and modeling data.

SOFTWARE SKILLS

- Geographic Information System (GIS) (ArcGIS, QGIS) software for geospatial data analysis and mapping visualizations
- PGAdmin database management and Structured Query Language (SQL)
- Python programming development language
- Model development with KNIME (machine learning), IBM CPLEX (optimization), and MATLAB
- User of PCMiler (transportation routing), TransCAD (travel demand modeling), Presto (cost control)

SOFT SKILLS

- Self-driven, challenge-motivated, and objective-oriented
- Active listening and effective communication
- Multicultural team leadership

LANGUAGES

Spanish (native), English (proficiency), Italian (intermediate), French (lower-intermediate).

MEMBERSHPS and SERVICE

- Handling Editor of Transportation Research Record Journal. February 2023 – Present
- Paper Review Coordinator for Transportation Research Board Annual Meeting. 2024 - Present
- Member of the Transportation Research Board (TRB) Standing Committee on Inland Waterway Transportation, for the National Academies of Sciences, Engineering, and Medicine (NASEM). April 2021 – Present.
- Member of the Transportation Research Board (TRB) Standing Committee on Freight Transportation Data for the National Academies of Sciences, Engineering, and Medicine (NASEM). April 2021 – May 2025
- Peer Review of papers for scientific journals (Transportation Research Part C, Journal of Navigation, Transportation Research Record, etc.) August 2018-Present.
- American Society of Civil Engineers, Member, March 2018 – January 2021; May 2024 – Present.
- National Defense Transportation Association (NDTA). October 2023 – October 2024.
- Institute of Transportation Engineers, Member, February 2017 – January 2020.
- Tau Beta Pi Engineers' honors' society. Spring 2019 initiate at the Arkansas Alpha chapter - Present

SCHOLARSHIPS, HONORS and AWARDS (most recent)

- Distinguished Engineer / Scientist, Applied Research Associates, Transportation & Infrastructure, FY 2024.
- Distinguished Member of Technical Staff, Applied Research Associates, Inc., FY 2022.
- Moffat & Nichol Best Paper Award, Western Dredging Association, July 2022.
- Student Honor Panel, Transportation Research Board's Marine Group Technical Activities Committees and the Marine Board, February 2021.
- Student Paper Award, GIS for Transportation, AASHTO, February 2020.
- Best Paper Award, Missouri Valley Section of the Institute of Transportation Engineers (MOVITE), June 2019.
- Jan Kibbe Scholarship Competition Award, (MOVITE), March 2018.
- Thomas J. Seburn Paper Competition, 2nd place, MOVITE, March 2018.
- Invitation to join Golden Key (2017), Tau Beta Pi (2019), and Gamma Beta Pi (2019) honors' societies.
- Doctoral Academy Fellowship, University of Arkansas, Fayetteville, August 2016.

DETAILED RESEARCH ACTIVITIES

Publications – Peer-Reviewed Journal Papers

- Asborno, M., Bhurtyal, S., Mitchell, N., and Peterson, S.K. (2025). **Data Fusion for Development of Freight Transload Facilities Database in the U.S.** Under review by *Transportation Research Record.*
- Asborno, M., Broders, J., Mitchell, K., Hartman, M., and Dunkin, L. (2025). **Automated Selection of Hydrological variables to Forecasting Shoaling.** Under review by *Journal of the American Water Resources Association (JAWRA).*
- Fanzhang Zeng, Zhao Zhao, Natalie P. Memarsadeghi, Charles J. McKnight, Xudong Wang, Sarah Miele, Mayank Chadha, Dania Ammar, Yichao Zeng, Magdalena Asborno, Kenneth Mitchell, Guga Gugaratshan, Michael D. Todd, Zhen Hu, and Dingbao Wang. (2025). **Hybrid Modeling for Daily Streamflow Forecasting: A Study Over the Continental United States.** Under review by *Journal of Hydrology.*
- Bhurtyal, S., Bui, H., Hernandez, S., Eksioglu, S., Asborno, M., Mitchell, K.N., and Kress, M. (2025). **Prediction of Waterborne Freight Activity with Automatic Identification System using Machine Learning.** *Computers & Industrial Engineering.* 200. https://doi.org/10.1016/j.cie.2024.110757
- Asborno, M., Broders, J., Mitchell, N., Hartman, M., and Dunkin, L. (2023). **Forecasting Short-Term Dredging Needs at Southwest Pass with Machine Learning Models.** *ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering,* https://doi.org/10.1061/JWPED5.WWENG-2009
- Asborno, M.I, Hernandez, S., Mitchell, K.N., and Yves, M. (2022). **Inland waterway network mapping of AIS data for freight transportation planning**. *The Journal of Navigation*, doi:10.1017/S0373463321000953
- Asborno, M.I, and Hernandez, S. (2021). **Assigning a commodity dimension to AIS data: disaggregated freight flow on an inland waterway network.** *Research in Transportation Business & Management,* https://doi.org/10.1016/j.rtbm.2021.100683.
- Asborno, M.I., Hernandez, S., and Yves, M. (2021). **GIS-based identification and visualization of multimodal freight transportation catchment areas.** *Transportation.* https://doi.org/10.1007/s11116-020-10155-3

- Asborno, M.I., Hernandez, S., and Akter, T. (2020). **Multi-commodity port throughput from truck GPS and lock performance data fusion**. *Maritime Economics and Logistics*. https://doi.org/10.1057/s41278-020-00154-7
- Asborno, M.I., Burris, C.G., and Hernandez, S. (2019). **Truck body-type classification using single-beam lidar sensors**. *Transportation Research Record (TRR)*. https://doi.org/10.1177/0361198118821847.
- Asborno, M.I., and Hernandez, S. (2018). **Using data from a state travel demand model to develop a multi-criteria framework for transload facility location planning.** *Transportation Research Record (TRR).* https://doi.org/10.1177/0361198118772699

White Papers

- Broders, J., M. Asborno, M. Hartman, K.N. Mitchell, and C. Phillips (2025). **Image based forecasting of waterway depths for channel maintenance operational management.** Journal name forthcoming. DOI forthcoming.
- M. Chadha, Y. Zeng, D. Ammar, D. Wang, M. Asborno, S. Miele, C.J. McKnight, N.P. Memarsadeghi, M.A. Hartman, K.N. Mitchell, G. Gugaratshan, M.D. Todd, and Z. Hu. (2025). **A Channel Infilling Rate Forecasting Framework for River Reaches with Varying Survey Density.** Journal name forthcoming. DOI forthcoming.
- Y. Zeng, D. Ammar, M. Chadha, D. Wang, M. Asborno, S. Miele, C.J. McKnight, N.P. Memarsadeghi, M.A. Hartman, K.N. Mitchell, G. Gugaratshan, M.D. Todd, and Z. Hu. (2025) **A Recursive Shoaling Forecasting Framework with Shifted Delays and Its Application to Southwest Pass.** Journal name forthcoming. DOI forthcoming.
- Bagchi, D., K. Bathgate, S.D. Boyles, M. Asborno, et. al. (2025). **A Dynamic Ultimate Capacity Framework for Seaport Systems.** Journal name forthcoming. DOI forthcoming.
- K. Bathgate, Bagchi, D., S.D. Boyles, et. al. (2025). **Use of AIS Data to Characterize Vessel Mix for Simulation: A Case Study at the Port of Houston**. Journal name forthcoming. DOI forthcoming.

Publications - Funded Research Reports

- Asborno, M., Mitchell, K., Brown, D., Cowan, M., and Peterson, S. (2025). **Major Freight Corridors in the U.S. Mapping of Commodity Flows on Waterborne, Rail, and Truck Networks**. FY2025-CHL-420-TR-000487. Vicksburg, MS: US Army Engineer Research and Development Center. DOI forthcoming.
- Kress, M., Asborno, M., Cowan, M., Mitchell, K.N., Savant, K., and Stickney, E. (2025). **AIS analysis of waterway utilization based on vessel type and class.** FY2025-CHL-430-TN-000540. Vicksburg, MS: US Army Engineer Research and Development Center. DOI forthcoming.
- M. Cowan, M. Kress, M. Asborno. (2025) **Leveraging Automatic Identification System (AIS) data to improve military waterborne logistics planning.** ERDC TR-##-#. Vicksburg, MS: US Army Engineer Research and Development Center. DOI forthcoming.
- Asborno, M., Hicks, C., Mitchell, K. (2025). **Quality Control for Waterway Networks**. FY2025-CHL-420-TN-000415. Vicksburg, MS: US Army Engineer Research and Development Center. DOI forthcoming.
- Asborno, M., Mitchell, K., and Kress, M. (2025) **Parameterized Statistical Distributions of Unique Origin-Destination Pairs for Major Waterborne Commodity Groups**. ERDC TR-25-20. Vicksburg, MS: US Army Engineer Research and Development Center. https://dx.doi.org/10.21079/11681/49881
- Emery, B., Theiling, C., Conover, S., Popkin, B.K., and Asborno, M. (2025). **Evaluating Transport of Stockpiled Mississippi River System Sand for Beach Nourishment and Other Uses**. ERDC TR-25-22 Vicksburg, MS: US Army Engineer Research and Development Center. https://dx.doi.org/10.21079/11681/49893
- Mitchell, K. N., Asborno, M. I., Bhurtyal, S., Peterson, S. K., Kress, M. M. December 2024. ***U.S. Freight Transload Facilities Dataset.*** CSV File and Metadata. Vicksburg, MS. US Army Engineer Research and Development Center. http://dx.doi.org/10.21079/11681/49500
- Emery, B., Theiling, C., Conover, S., Popkin, B., and Asborno, M. (2024) **Opportunities for Upper Mississippi River System Sand to Support Coastal Beach Nourishment**. USACE ERDC TN-24-7. http://dx.doi.org/10.21079/11681/49363
- Asborno, M., Conover, S., Emery, B., and DiJoseph, P. (2024) **St. Paul District Multi-Modal Assessment**. Letter Report ERDC/CHL LR 24-2. Vicksburg, MS: US Army Engineer Research and Development Center.

- Hernandez, S., Asborno, M., Bhurtyal, S., and Diaz-Corro, K. (2021). TRC 1904 Final Report, **Developing Evidence Based Framework for Bypass and Widening Projects and the Effects on Communitie**s. https://rosap.ntl.bts.gov/view/dot/59255.
- Hernandez, S., Asborno, M., & Yves M. (2020) MarTREC 6008 Final Report, **Combining Truck and Vessel Tracking Data to Estimate Performance and Impacts of Inland Ports**. https://martrec.uark.edu/research/completedprojects/ua_combining_accessible.pdf
- Hernandez, S., Asborno, M. I., Burris, C. G. (2018). **Evaluating the Performance of Intermodal Connectors in Arkansas** Final Report. MarTREC. https://rosap.ntl.bts.gov/view/dot/37071
- Braham, A., Hernandez, S., Kent, J., Asborno, M.I., and Smith, S. (2017). **Locating Transload Facilities to Ease Highway Congestion and Safeguard the Environment.** ARDOT. http://www.ardot.gov/TRC/Final_Report/TRC1608_Locating_Transload_Facilities_to_Ease_Highway_Congestion_and_Safeguard_the_Environment.pdf

Publications - Conference Proceedings

- Asborno, M., J. Broders, K.N. Mitchell, M. Hartman, and L. Dunkin. (2025) **Shoaling Forecasting at the Mouth of the Mississippi River with Machine Learning Models.** Coastal Engineering Proceedings, 38, management.248. https://doi.org/10.9753/icce.v38.management.248
- Mahmoudzadeh, A., Khodadadi, A., Asborno, M., Wang, B., Mitchell, N., Hartman, M., and Ma, C. (2025) **Unraveling the dynamics of shoaling rates: a statistical analysis for enhanced waterway maintenance along the Ohio River.** Transportation Research Procedia, 82 pp.2119-2136. https://doi.org/10.1016/j.trpro.2024.12.176
- Caldwell, W.C., Asborno, M., and Emery, B. (2024). **Dredged Material Classification Using Unsupervised Machine Learning**. Proceedings of the Western Dredging Association Dredging Summit & Expo ‘24, June 24-27, Tampa, FL.
- Emery, B., Asborno, M., and Mitchell, K.N. (2022). **USACE Expanded Use of Archival Dredging Data.** Proceedings of the Western Dredging Association Dredging Summit & Expo '22. July 25-28, Houston, TX.

Conference Presentations

- Asborno, M., Mitchell, K., Brown, D., Cowan, M., and Peterson, S. (2024). **Major Freight Corridors in the U.S.** Submitted for presentation to Transportation Research Board Annual Meeting, 2026.
- K. Bathgate, D. Bagchi, S.D Boyles, K.N. Mitchell, M. Asborno, M. Kress. 2025. **Characterizing Anchorage Queue Dynamics due to Channel Fog Closures at the Port of Houston.** Submitted for presentation to Transportation Research Board Annual Meeting, 2026.
- D. Bagchi, K. Bathgate, S.D Boyles, M. Asborno. 2025. **A Dynamic Ultimate Capacity Framework for Seaport Systems.** Submitted for presentation to Transportation Research Board Annual Meeting, 2026.
- Broders, H., Asborno, M., K.N. Mitchell, M. Hartman, and C. Phillips. **Forecasting dredging needs: Estimation of channel area with depths shallower than a given threshold within six weeks.** Accepted for Presentation at PIANC Smart Rivers, September 2025.
- Emery, B., Theiling, C., Conover, S., Popkin, B.K., and Asborno, M**. Evaluating Transport of Stockpiled Mississippi River System Sand for Beach Nourishment and Other Uses.** Accepted for Presentation at PIANC Smart Rivers, September 2025. Cannot present due to Fed. Travel restrictions.
- Asborno, M., K.N. Mitchell, J. Broders, M. Hartman, B. Emery, M. Hanowsky, K. Kothari, W.C. Caldwell. **Use of Machine Learning for Waterway Transportation Research at USACE.** Accepted for presentation at TRB Data and AI for Transportation Advancement, May 28-29, 2025, Seattle, WA. Could not present due to Fed. Travel restrictions.
- Asborno, M., Hicks, C., and K.N. Mitchell. **GIS Toolbox for Waterway Network Research**. Accepted for presentation at AASHTO GIS-T 2025, Portland, OR, April 2025. Could not present due to Fed. Travel restrictions.
- Asborno, M., K.N. Mitchell, B. Emery, C. Phillips, and C. Caldwell. **RMS Data Mining for Advanced Dredge Data Analysis**. USACE Coastal Summit. 14-16 January, 2025. Gulf Shores, AL.
- Bonine, N., M. Asborno, and B. Emery. **Changes in Environmental Understanding, Trawling, Relocations, Windows.** USACE Coastal Summit. 14-16 January, 2025. Gulf Shores, AL.
- Bhurtyal, Sanjeev, M. Asborno, K.N. Mitchell, S. Peterson. (2025). **Development of Transload Facilities Database in the United States.** Transportation Research Board Annual Meeting, January 2025, Washington, DC.

- Caldwell, W.C., Asborno, M., and Emery, B. (2024). **Dredged Material Classification Using Unsupervised Machine Learning.** Proceedings of the Western Dredging Association Dredging Summit & Expo 2024, June 24-27, Tampa, FL. Presented by C. Caldwell.
- Asborno, M., Broders, J., Phillips, C., Hartman, M., and K.N. Mitchell**. Classification of shoaling forecasting to inform dredging needs in the Southwest Pass.** Accepted for Presentation at National Dredging Meeting, Atlanta, GA, USA, June 2024.
- Broders, J., M. Asborno, K.N.Mitchell, and M. Hasrtman**, Feature Selection for the Modeling of Shoaling Trends in the Southwest Pass.** USACE RD24, Vicksburg, MS, April 2024.
- **Review of GIS Representations of Waterways for Transportation Planning and Research.** AASHTO GIS-T Symposium, Atlanta, GA, April 2024.
- Emery, B., Asborno, M., and Conover, S. **Multi-Modal Transport of Upper Mississippi River System Sand to Support Coastal Beach Nourishment**. Conference on the Marine Transportation System Innovative Science and Technologies Toward Greater Sustainability, Washington, DC, June 2023. Presented by B. Emery.
- Asborno, M., Broders, J., Mitchell, K., Hartman, M., and Dunkin, L. "**Machine learning modeling to forecast short-term dredging needs at Southwest Pass**". PIANC America 2023 Conference. Fort Lauderdale, FL, April 2023.
- Mahmoudzadeh, A., Khodadadi, A., Asborno, M., Wang, B., Mitchell, N., Hartman, M., and Ma, C. "**Statistical analysis of shoaling rates in the Ohio River".** PIANC America 2023 Conference. Fort Lauderdale, FL, April 2023.
- Asborno, M., Mitchell, K., and Kress, M. "**Parameterized Statistical Distributions for Modeling Major Freight Waterway Corridors by Commodity**". Transportation Research Board Annual Meeting, Washington, DC, January 2023.
- Emery, B., Asborno, M., and Mitchell, K. "**USACE Expanded Use of Archival Dredging Data**". [Best Paper Award] Western Dredging Association (WEDA) Summit and Expo, Houston, July 25-28, 2022, Houston, TX. – Presented by B. Emery.
- Asborno, M., Broders, J., Mitchell, K., Hartman, M., and Dunkin, L. "**Machine learning modeling to forecast short-term dredging needs at Southwest Pass**". ARA Enhanced Leadership Conference, Arlington, VA, April 2022
- Asborno, M., Broders, J., Mitchell, K., Hartman, M., and Dunkin, L. "**Machine learning modeling to forecast short-term dredging needs at Southwest Pass**". USACE ERDC RD22 Conference, Virtual event, April 2022.
- Asborno, M., Mitchell, K., and Kress, M. "**Parameterized statistical distributions for modeling major waterway freight corridors by commodity**". USACE ERDC RD22 Conference, Virtual event, April 2022.
- Asborno, M., Hernandez, S., and Yves, M. "**Assigning a Commodity Dimension to Vessel Trips Derived from AIS Data on an Inland Waterway Network**". INFORMS Annual Meeting, Virtual option, October 2021.
- Asborno, M., Hernandez, S., and Yves, M. "**Assigning a Commodity Dimension to AIS data: Disaggregated Freight Flow on an Inland Waterway Network**". TRB Innovations in Freight Data Workshop, Virtual event, September 2021.
- Asborno, M., Hernandez, S., and Burris, C. "**Single Beam Lidar Detection for Truck-Body Type Classification**". Accepted for presentation at National Travel Monitoring Exposition and Conference (NATMEC), Virtual event. June 2021.
- Asborno, M., Hernandez, S., and White, D. "**Crowdsourcing tools to train and evaluate machine learning classifiers: freight data management application**" Accepted for presentation at the 2020 National Travel Monitoring Exposition and Conference (NATMEC), Virtual event. June 2021
- Asborno, M., "**GIS-based identification and visualization of multimodal freight port catchment areas**". NAVCEN AIS Forum, Virtual event, May 2021.
- Asborno, M. "**GIS-based identification and visualization of multimodal freight transportation impact areas**" [2020 Student Paper Award] AASHTO GIS for Transportation Virtual Symposium. Virtual event, April 2021.
- Asborno, M., Hernandez, S., and Yves. "**Towards multimodal freight network modeling: Geospatial map-matching of AIS data and integration with truck movements**" [Student Honor Award] Sixth Biennial Marine Transportation System Innovative Science and Technology Conference. Virtual event, March 2021.
- Asborno, M., and Hernandez, S. "**Commodity-based vessel trip characterization on an inland waterway network**", Transportation Research Board, 100th Annual Meeting. Virtual event, January 2021.

- Asborno, M., and Hernandez, S. "**Multi-Commodity Port Throughput from Truck GPS and Lock Performance Data Fusion**" in Transportation Research Board, Innovations in Freight Data Workshop. April 9-10, 2019, Irvine, CA http://onlinepubs.trb.org/onlinepubs/circulars/ec255.pdf
- Asborno, M., and Hernandez, S. "**Identification of distance thresholds for freight mode choice using Commodity Flow Survey Public Use Microdata (CFS PUM) and machine learning tools**". Transportation Research Board, 98th Annual Meeting. Washington, DC, January 2019.
- Asborno, M., Burris, C. and Hernandez, S. "**Truck body-type classification using single-beam Lidar sensors**". Transportation Research Board, 98th Annual Meeting. Washington, DC, January 2019.
- Hernandez, S., Asborno, M., and Burris, C. "**Evaluating the Performance of Intermodal Connectors in Arkansas**". Jack Buffington Poster Session, Maritime Transportation Research & Education Center. Fayetteville, AR, November 2018.
- Asborno, M., Burris, C. and Hernandez, S. "**Truck body-type classification using single-beam Lidar sensors**". Institute of Transportation Engineers, Missouri Valley Section Fall Meeting. Lenexa, KS, October 2018. (2nd place Best Student Paper Award in 2018 Thomas J. Seburn Student Paper Competition).
- Asborno, M., Burris, C. and Hernandez, S. "**A proof-of-concept, non-intrusive Lidar sensor for truck body type classification**". Southern Plains Transportation Center and Oklahoma Department of Transportation Summer Symposium. Oklahoma, OK, August 2018.
- Asborno, M., and Hernandez, S. "**Use of State Travel Demand Models to Develop a Multi-Criteria Framework for Facility Location Planning**". Transportation Research Board, 97th Annual Meeting. Washington, DC, January 2018.
- Hernandez, S., Asborno, M., and Burris, C. "**Evaluating the Performance of Intermodal Connectors in Arkansas**". Poster at the Jack Buffington Poster Session, Maritime Transportation Research & Education Center. Fayetteville, AR, November 2017.
- Asborno, M. Southern Plains Transportation Center Summer Symposium. Oklahoma, OK. Lectern: "**Use of State Travel Demand Models to Develop a Multi-Criteria Framework for Facility Location Planning**" (August 2017)
- Hernandez, S., Asborno, M. I., and Durandal, F. "**Evaluating the Performance of Intermodal Connectors in Arkansas**". Jack Buffington Poster Session, Maritime Transportation Research & Education Center. Fayetteville, AR, November 2016.

Webinars and Other Presentations

- Asborno, M., Mitchell, K.N., Broders, J., Phillips, C., and Hartman, M. 2025. **Shoaling Forecasting with AI/ML.** ASBPA SPN Coastal AI/ML Webinar. 1 August 2025.
- Asborno, M., M. Kress, K.N. Mitchell, and D. Young. **USACE Navigation R&D Projects and Interagency Partnership Opportunities.** CMTS Lunch & Learn Series. 21 May 2025.
- Asborno, M., K.N. Mitchell, S. Bhurtyal, D. Brown, S. Peterson, and G. Agorku. **Multimodal freight Corridors and Transload Facilities in the U.S**. USACE HQ Navigation Team Training / Discussion. 18 April 2025.
- Asborno, M., K.N. Mitchell, S. Bhurtyal, and S. Peterson. **U.S. Freight Transload Facilities Dataset.** the CMTS Maritime Data IAT Meeting. February 2025.
- Asborno, M., Mitchell, K.N., Broders, H., Phillips, C., et. al. **Machine learning approaches to sediment load forecasting at Southwest Pass.** USACE-ERDC AI/ML Workshop, Vicksburg, MS, November 2023.
- Asborno, M., **GIS-based identification and visualization of multimodal freight port catchment areas**. NAVCEN AIS Forum, Virtual event, May 2021.