

SEAS Vitae AY 2022-2023

Peer-Reviewed Publications

2023

Bolanos, D, K Varela, **B Sargent**, M Stephen, L Howell, and S Magleby (2023) "Selecting and Optimizing Origami Flasher Pattern Configurations for Finite Thickness Deployable Space Arrays," *Journal of Mechanical Design* 145, February, article 023301, pp 1–8.

Ohara, N, A Neupane, K Ahlenius, **R Young**, and A Campos (2023) "Blow-Over Risk evaluation System for High-Profile Light-Weight Vehicles on Wyoming Highways," *Transportation Research Record*. doi: 10.1177/03611981231168118.

Sheffield, J, **B Sargent**, and L Howell (2024) "Embedded Linear-Motion Developable Mechanisms on Cylindrical Developable Surfaces," *Journal of Mechanisms & Robotics*, January. doi: 10.1115/1.4062133.

Wang, S, H Wang, S She, **Y Zhang**, Q Qiu, and Z Xiao (2023) "Swin-T-NFC CRFs: An Encoder–decoder Neural Model for High-precision UAV Positioning via Point Cloud Super Resolution and Image Semantic Segmentation," *Computer Communications* 197, January, pp 52-60.

2022

Baumgardner, M; A Graves (2022) "Temperature, Soot, and OH*/CH* Chemiluminescence Measurements of Partially Premixed CO₂-diluted Propane Flames on a Linear Hencken Burner," *Fuel* 328, November, article 125178. doi.org/10.1016/j.fuel.2022.125178.

Crandall, A, S Mamolo, and M Morgan (2022) "SkiMon: A Wireless Body Area Network for Monitoring Ski Flex and Motion During Skiing Sports," *Sensors* 22(18), 6882, pp 1–14.

Peer-Reviewed Conference Proceedings

2023

Chen, T (2023) "Thermal and Flow Characteristics in a Tube with Helical Ridges," *2023 ASME Summer Heat Transfer Conference*, Washington DC, July 9-12.

Ferro, PD and TC Mixon, "Fabrication of recycled carbon fiber - thermoplastic composites," *SAMPE Conference Proceedings*, Seattle, WA, April 17–20.

Kutkut, A, M Ayoobi, V Akkerman, and **M Baumgardner** (2023) "Understanding the Impacts of the Operating Conditions on the Stability Limits of Premixed Methane-air Combustion in Micro-channels," *13th U.S. National Combustion Meeting*, College Station, TX, March. Paper No. 1D01, pp. 1–10.

Weber, G and W Bailey (2023) "Dual Cure Interpenetrating Polymer Networks for Bonded Composite Assemblies," *SAMPE Conference Proceedings*, Seattle, WA, April 17–20. doi: 10.33599/nasampe/s.23.0208.

2022

Coviello, G, G Avitabile, A Florio, **C Talarico** and J Roveda (2022) "A Wireless Synchronized System for Long-Term Global Health Monitoring," *Proc. of IEEE 7th International Conference on Smart and Sustainable Technologies (SpliTech)*, Split/Bol, Croatia, July, pp 1–4.

Coviello, G, G Avitabile, A Florio, **C Talarico**, and J Roveda (2022) "Distributed Full Synchronized System for Global Health Monitoring based on FLSA," *IEEE Transactions on Biomedical Circuits and Systems (TBCAS)* 16(4), August, pp 600–608.

Coviello, G, G Avitabile, **C Talarico**, J Roveda, and A Florio (2022) "Master-Slave Mutual Time Synchronization in a Wireless Body Area Network," *IEEE 65th Midwest Symposium on Circuits and Systems (MWSCAS)*, Fukuoka, Japan, pp 1–4.

Crandall, A (2022) "A 3D Mesh-Based Approach to In-Home Safe Walking Spaces for Older Adults," *International Conference on Smart Education, Health and ICT (SHI 2022)*, Oxford, England, September. doi: 10.48550/arXiv.2209.12393.

Florio, A, **C Talarico**, and G Avitabile (2022) "A Simple Synchronous Architecture for Angle of Arrival Estimation Based on Phase Interferometry," *IEEE 18th Asia Pacific Conference on Circuits and Systems (APCCAS)*, Shenzhen, China, November, pp 18–21.

Puryear, B and **G Sprint** (2022) "Github Copilot in the Classroom: Learning to Code with AI

Schultz, J (2022) "Convivial Design: Civil Engineering Case Studies," *AMPS Proceedings 30 Cultures Community and Design*, Calgary, June 28-20, pp 366–375.

Schultz, JA., CH Raebel, JR Buckholt, DH Raebel, and WS Newhoff (2022) "Experimental Performance of Cold Form Flexural Members Under Distortional Buckling." Cold-Formed Steel Research Consortium (CFSRC) Colloquium. October.

Stutzki, C, and **J Schultz** (2022) "The Mitchell Park Horticultural Conservatory in Milwaukee, Wisconsin," *Proceedings of the IASS 2022 Symposium Innovation, Sustainability, Legacy*, Beijing, China, September 19–22, pp 2777–2789.

Vlajic, N., F. Ng, **T Fitzgerald** (2022) "Large-Amplitude Vibrations of a Slender Cantilever Beam," *The 16th International Conference on Motion and Vibration Control*, Los Angeles, CA, September 7–9, pp 537–542.

Conference Presentations**2023**

Shimabuku, K, J Kearns (2023) "Models Requiring Minimal Data Collection for the Design, Operation, and Monitoring of Bone Char Sorption Units for Removal of Excessive Fluoride from Groundwater," *University of Colorado WASH Symposium*, Boulder, CO, March 9–10.

VanDam, M, C McCaslin, A Brock, S Bass-Ringdahl, D Jenson, L Thompson, **P De Palma**, and E Wilson-Fowler (2023) "Pragmatics of Conversations in Families with a Toddler with Hearing Loss," *9th Annual Midwest Cognitive Science Conference*, Grand Rapids, MI, May 8-9.

VanDam, M, L Thompson, D Jenson, A Brock, E Wilson-Fowler, S Bass-Ringdahl, and **P De Palma** (2023) "Preschoolers with Hearing Loss have Asymmetries in the Rate of Initiating Conversations" (poster), *184th Meeting of the Acoustical Society of America*, Chicago, IL, May.

Young, R (2023) "Community Engaged Learning, Social Justice, and Engineering," *Pacific Northwest Section of the American Society of Engineering Education*, Spokane, WA, April 5–7.

2022

Dorie, B (2022) "Knowledge, Attitudes, and Behaviors of Individuals Exposed to Wildfire Smoke," *Air and Waste Management Association Annual Conference & Exposition*, San Francisco, CA, June 27–30.

Baker, B, Z Divelbiss, and **B Dorie** (2022) "Impact of Wildfire Emissions on Vulnerable Populations in the Inland Northwest," *Air and Waste Management Association Annual Conference & Exposition*, San Francisco, CA, June 27–30.

Garcia-Camargo, L, J Kilfoyle, **P De Palma**, M Vandam, and J Stover (2022) "A First Look at Zipf's Law and the Speech of Children with Autism Spectrum Disorder," *CogSci2022*, 44th Meeting of the Cognitive Science Society, Toronto Canada, July 27–30.

Schennum, S (2022) "5G Field Measurement Challenges," *IEEE International Symposium on Electromagnetic Compatibility, Signal & Power Integrity*, Spokane, WA, August 1–5.

Schultz, J (2022) "Sustainable Civil Infrastructure: A Historical Survey," *Cultures, Communities and Design – AMPS Conference*, Calgary, Canada, June 28–20.

Schultz, J, K Springer, J Roberson, J Carrol, and M Hegbloom (2022) "Forensic Evaluation of Historic Shell Structure: Development of In-situ Geometry," *15th World Congress on Computational Mechanics (WCCM-XV) and 8th Asian Pacific Congress on Computational Mechanics (APCOM-VIII)*, Yokohama, Japan, July 31–August 5.

Job, AL, S Stratton, CE Umhey, **KA Hoo**, and S Wettstein (2022) "Using Artificial Neural Networks to Estimate Xylose Conversion and Furfural Yields in Autocatalytic, Organic/Aqueous Solvent Systems," American Institute of Chemical Engineers Annual Meeting, Session: Biomass Characterization, Pretreatment, and Fractionation, paper 452a, Phoenix, AZ, November 11-18.

Young, R (2022) "Evaluation of the Wyoming Connected Vehicle Pilot Deployment Project," *Western District Annual Meeting*, Palm Springs, June 26–29.

Young, R (2022) "Perceptions of Bicycle Stop Laws at Stop-Controlled Intersections," *Western District Annual Meeting*, Palm Springs, June 26–29.

Young, R (2022) "Transportation Connections: People, Communities, and Vehicles," Michael Kyte Distinguished Lecture, University of Idaho, September 15.

Young, R (2022) "Wyoming Connected Vehicle Pilot Deployment Results and Transition Plan," USDOT ITS Joint Program Office Webinar, June 28.

Workshops/Short Course/Seminars

2022

Niezgoda, S (2022) “Watershed Assessment,” “Surveying Techniques for River Restoration,” and “Flow Discharge Measurement” modules plus a full day of field instruction in *Site Evaluation and Assessment* Short Course, Portland State University, Environmental Professional Program, Stream Restoration Certificate, Co-Instructor, Portland, OR, June.

Niezgoda, S (2022) *Applied Watershed Restoration Field Course*, Portland State University Environmental Professional Program, Co-Facilitator and Co-Instructor, Portland, OR, June.

Niezgoda, S (2022) “Hydrology” and “Hydraulics for Design” modules, *Restoration Design* Short Course, Portland State University Environmental Professional Program, Stream Restoration Certificate, Co-Instructor, Portland, OR, October.

Honors & Awards

2022

Young, R (2022) PacTrans Educator of the Year Award, PacTrans Annual Conference, October 14.

Funded Research

2023

Crandall, A (2023) *HazARd Project: Eyetracking-based Notification Acknowledgement Interface*, Steeves-Betzler Research Student Scholar Award, Gonzaga University, \$1,948 for 5 months.

Khare, H (2023) Elucidating the Role of Filler-Substrate Chemistry in Promoting Ultra-Wear of Tribological Thermoplastic Composites, Steeves-Betzler Research Student Scholar Award, Gonzaga University, \$1,948 for 5 months.

Shimabuku, KK (2023) *Chemically Enhancing Bonechar for the Removal of Fluoride from Drinking Water*, SEED (Seubert engineering entrepreneurial design), Gonzaga University, \$6,563 for 5 months.

Weber, GR (2023) *Magneto-hydrodynamic ejection of molten aluminum during laser cutting*, SEED (Seubert engineering entrepreneurial design), Gonzaga University, \$3,098 for 5 months.

Weber, GR (2023) *Interpenetrating Polymer Network Designed Experiment*, Jack McElroy Research Student Scholar Award, Gonzaga University, \$960 for 3 months.

2022

Crandall, A (2022) *HazARd: An Augmented Reality Fall Prevention System*. Research Council fund, Gonzaga University, \$1,600 for 9 months.

Crandall, A (2022) *HazARd: Year 2 Development*, McDonald Student Work Fund, Gonzaga University, \$4,536 for 9 months.

Crandall, A (2022) *NeuroTafI Phase 2 Development*, McDonald Student Work Fund, Gonzaga University, \$2,722 for 9 months.

Muszynski, M (2022) *Alternate Foundations for Affordable Housing*, McDonald Work Award Program, Gonzaga University, \$4,536 for 7 months.

Shimabuku, K, M Baumgardner, E Ross, and G Gordon (2022) *Optimizing Biochar Adsorbent Production through Semi-gasification*, EPA Grant 84040401, \$24,982, 12 months.

Young, R (2022) *Preparing the Transportation Workforce for the Deployment of Emerging Technology*, National Cooperative Highway Research Program, Transportation Research Board, \$300,000 for 24 months, (Gonzaga share \$15,551).

Other Scholarly Activity

Muszynski, M, Governor on the Board of Governors, Order of the Engineer.

Muszynski, M, Member of the Community, Housing & Human Services Affordable Housing Subcommittee, City of Spokane.

Weber, G, C Campbell (2023) Awarded US Patent 11,603,586 B2, "Interim Temper Process," March 14.

Young, R (2023) Conference Organizer, "Engineering for the Common Good: Annual Meeting of the Pacific Northwest Section of the American Society of Engineering Education," Spokane, WA. April 5-7.

Young, R, Member, Bicycle Advisory Board and Transportation Subcommittee of the Planning Commission, City of Spokane.

2022

Young, R (2022) Associate Editor, *ASCE Journal on Civil Engineering Education*.

Student Accomplishments, Awards

2023

Alicia Anderson (Civil Engineering, 2023) received the Garrigan Award for earning the most Gonzaga credits during her undergraduate studies while maintaining a 4.0 GPA.

Evan Bates ('23, Engineering Management) and Brynna Bone ('24, Civil Engineering) received top honors in the 18th Annual Phase I Student Design Competition for their poster and presentation, "Optimizing Biochar Adsorbent Production through Semi-gasification," P3 Expo, National Harbor, Maryland, June 20.

Avery Edmondson (Computer Science, 2023) presented "Gaze Tracking and Gesture-based Interface Notification Acknowledgement in Augmented Reality Interfaces for Older Adults," Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Aden Hiatt (Computer Science, 2023) presented the poster "Analyzing Stability of Symmetric Multistep Methods," Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Jakob Kubicki (Computer Science, 2023), Ahmad Moltafet (Computer Science, 2023), and Mason Manca (Computer Science & Computational Thinking, 2024) presented the poster “Human-Centered Design for Ethical and Responsive AI Chatbots: Improving User Experience and Communication Efficiency,” Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Grace Luoma (Civil Engineering, 2024) and Brynna Bone (Civil Engineering, 2024) presented the poster “Enhancing Sustainable Water Treatment Filters for Low-income Communities,” Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Matt Nguyen (Computer Science, 2025), León Garcia (Computer Science, 2023), and Malia Recker (Computer Science, 2025) presented the poster “Topological Data Analysis of Information Spread on Twitter,” Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Kevin Rocca (Computer Science, 2026) presented “Analyzing Child Directed Speech,” Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Jackson Swets (Mechanical Engineering, 2025) presented “Dry Sliding Wear of Metal-oxide Filled PTFE Composites,” Spokane Intercollegiate Research Conference (SIRC), Gonzaga University, April 28.

Jackson Swets (Mechanical Engineering, 2025) received Gold Award for his poster, “Dry Sliding Wear of Metal-oxide Filled PTFE Composites,” 2023 Society of Tribologists and Lubrication Engineers (STLE) Annual Meeting, Long Beach, CA, May 24.

Jackson Swets (Mechanical Engineering, 2025) received the E. Richard Booser Scholarship from the Society of Tribologists and Lubrication Engineers (STLE), a \$4,500 international prize to encourage continued research.

Alexi Townsend (Civil Engineering, 2024) placed second in the American Society of Civil Engineers ethics paper competition, the Daniel W. Mead Prize.

2022

Brooke Baker (Civil Engineering, 2023) won second place at the Air and Waste Management Annual Conference 2022 Undergraduate Student Poster Competition, June 29.

Esme Nelson (Civil Engineering, 2024) earned the Future Leaders Scholarship from the Association of Sate Floodplain Managers Foundation.

Esme Nelson (Civil Engineering, 2024) won a Gilman Scholarship from the U.S. Department of State to participate in Gonzaga in Delft: Sustainable Cities study abroad course in the Netherlands.

Benjamin Reilly (Computer Science, 2022) received a \$500,000 investment by the Y Combinator business accelerator to develop Banabo: a business-to-business marketing attribution technology.