

## SEAS Vitae AY 2020-2021

### Peer-Reviewed Publications

Abolhasani, B, **J Tadrour**, and A Eryilmaz (2021) "Delay Gain Analysis of Wireless Multicasting for Content Distribution," *IEEE/ACM Transactions on Networking*.

Call, T, E Fox, and **G Sprint** (2021) "Gamifying Software Engineering Tools to Motivate Computer Science Students to Start and Finish Programming Assignments Earlier," *IEEE Transactions on Education*, April. (STUDENT)

**Capobianchi, M**, R Cangelosi, and P M McGah (2021) "Heat Transfer in Fully Developed, Laminar Flows of Dissipative Pseudoplastic and Dilatant Fluids in Circular Conduits," *Journal of Heat Transfer, Transactions of the ASME* 143, pp 031801-1—13

### 2020

Raebel, CH, **JA Schultz**, and B Whitsell (2020) "Experimental Investigation Into Acceptable Design Methods for Cold-Formed Metal Deck," *Journal of Constructional Steel Research*, 172, August. (STUDENT)

**Zhang, M**, A Saberi, and A Stoorvogel (2020) "Semi-global state synchronization for multi-agent systems subject to actuator saturation and unknown nonuniform input delay," *IEEE Transactions on Network Science and Engineering*, pp 99, December.

### Peer-Reviewed Conference Proceedings

Abolhasani, B, **J Tadrour**, A Eryilmaz, and E Yeh (2021) "Fresh Caching for Dynamic Content," *IEEE International Conference on Computer Communications INFOCOM 2021*.

Job, A, S Stratton, C Umhey, J Romo, J, K **Hoo**, and S Wettstein (2021) "Using artificial neural networks to estimate xylose conversion and furfural yields in autocatalytic, organic/aqueous solvent systems," *ACS: Applications of Artificial Intelligence, Machine Learning & Data Analytics in Environmental Science & Engineering*, April.

### 2020

Abolhasani, B, **J Tadrour**, and A Eryilmaz (2020) "Achieving Freshness in Single/Multi-User Caching of Dynamic Content over the Wireless Edge," *IEEE Xplore, The 18th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt 2020)*, Greece, June.

**Schultz, JA** (2020) "Historic Assessment of Folded Hyperbolic Paraboloid Roof: St. Charles," *IWSS2020 1st Italian Workshop on Shell and Spatial Structures*, June.

**Schultz, JA**, B Dichone, and B Cope (2020) "Analytical Model for 5-ply Cross-Laminated Timber," *IWSS2020 1st Italian Workshop on Shell and Spatial Structures*, June. (STUDENT)

**Schultz, JA**, and N Katz (2020) "Geometric Patterns as Architectural Forms: A Case-Study in Development of a Taxonomy of Tilings," *Proceedings of the Façade Tectonics World Congress*, Façade Tectonics Institute, Los Angeles, CA, August.

**Zhang, M**, A Saberi, and A Stoorvogel (2020) "Semi-global state synchronization for multi-agent systems subject to actuator saturation and unknown nonuniform input delay," American Control Conference (ACC), July.

### **Conference Presentations (contributed, invited, abstracts)**

Pérez, GE, J Juan, S Brzev, D Quiun, **S Ganzerli**, CE Espinosa, M Reiter, M Borseth, and B Olewski (2021) "Seismic behavior and design of confined masonry buildings: a review" Proc. 14th Canadian Masonry Symposium, Montreal, CA, May. (STUDENT)

**Young, R** (2021) "Connected Communities and Connected Vehicles through Transportation," Women's Transportation Seminar, Spokane/Coeur d'Alene, April.

**Young, R**, and A Marquez (2021) Transportation, Social Justice, and Inclusion conference (planning and presenting), Spokane, March. (STUDENT)

### **2020**

**Hoo, KA** (2020) "Pathways to Support STEM Graduate Education for Indigenous Communities," in 2020 American Automatic Control Conference, Special Session on "Promoting Access for Under-represented Groups in STEM Graduate Disciplines," July.

**Shimabuku, KK**, M Nelson, M Petersen (2020) "Investigating inadvertently generated polychlorinated biphenyls (iPCBs) in the Spokane River Basin and their presence in consumer and commercial products," Roanoke River Currents Conference, October. (STUDENT)

**Young, R** (2020) "Update on the Wyoming Connected Vehicle Pilot Deployment Project," Western District Meeting of the Institute of Transportation Engineers, June.

### **Workshops/Short Course/Seminars**

**Niezgoda, S** (2021) "Strategies to Advance Social Justice and Equity Through Senior Design Projects," Gonzaga CEDE Innovation Series, Feb. 2021.

### **2020**

**Ferro, P** (2020) "Strengthening Mechanisms in Steel and Aluminum," SME Tooling U, April.

**Ferro, P** (2020) Seminar: Metals, Materials, Manufacturing and Heat Treating, PCC Structurals, July.

**Hoo, KA** (2020) Special session on "Promoting Access for Under-represented Groups in STEM Graduate Disciplines," 2020 American Automatic Control Conference, July.

**Schultz, JA** (2020) "Failure Prediction Model for Structural Glass Design," NCSEA Education Portal, August.

### **Honors & Awards**

**Bormann, N** (2021) Granted Emeritus Faculty status.

**2020**

**Abu-Elzait, S** (2020) Awarded Dean's Medal for Outstanding Academic Achievement in Mechanical and Electrical Engineering, Francis College of Engineering, University of Massachusetts, Lowell.

**Muszynski, MR** (2020) Awarded "Engineer of Merit" award by the Inland Empire Section of the American Society of Engineers.

**Tadrous, J** (2020) Awarded Grade of Senior Member, Institute of Electrical and Electronic Engineers.

**Funded Research****2020**

**Fitzgerald, T** (2020) *Flexible Reservoir Computing Tensgrity Robots*, Subcontract NC State, PI: Edmon Perkins, Defense Advanced Research Projects Agency (DARPA), Total: \$43,263/36-months

**Khare, H** (2020) *Linking Nanoscale Mechanics to Macroscale Wear of Polymer Nanocomposites: A Framework for Predictive Design of Materials for Articular Prosthesis*, SEAS Innovation grant, Total: \$9,114/12-months.

**Shimabuku, KK** (2020) *Bonechar filtration media for the removal of fluoride from drinking water in low-income and remote communities*, Steeves-Betzler Research Student Scholar Award, Total: \$2,900.

**Shimabuku, KK** (2020) *Filtration Media for Stormwater Harvesting*, SEAS SEED funds, Total: \$23,500/12-months.

**Shimabuku, KK** (2020) *PCBs in Products Database Development*, Spokane River Regional Toxics Task Force (SRRTTF), Total: \$1,965.

**Sprint, G** (2020) *Developing an Online Machine Learning Intervention to Increase Physical Activity and Sleep Duration for Healthcare Application*, SEAS SEED funds, Total: \$10,000/12-months.

**Young, R** (2020) *Evaluation of Idaho (Bicycle) Stop Laws in the Pacific Northwest*, PacTrans Region 10 University Transportation Center, Total: \$180,000.

**Other Scholarly Activity**

**Chen, T**: Faculty Advisor, American Society of Mechanical Engineers student section, 2012–present.

**Ganzerli, S**: Faculty Advisor, Society of Women Engineers student chapter, 2017–present.

**Muszynski, MR**: Regional Governor, Order of the Engineer, 2020–present.

**Niezgoda, S**: Faculty Advisor, American Society of Civil Engineers student section, 2018–present

**Tadrous, J**: Associate Editor, Institute of Electrical and Electronic Engineers Access, April 2019–present.

**Tadrous, J**: Faculty Advisor, Institute of Electrical and Electronic Engineers Gonzaga Club, 2019–present.

**Young, R:** Member, Technical Advisory Committee, Spokane Regional Transportation Council (SRTC), June 2020-present.

**Schmidt, J and Schnagl, J:** Inducted into the Gonzaga University chapter of the Jesuit honor Society, Sigma Alpha Nu, as graduate students.

## 2020

**Fitzgerald, T and S Niezgoda:** Members, GU Academic Instruction and Learning Committee of the Pandemic Response Task Force, 2020.

**Niezgoda, S:** Faculty Representative, the Classroom Technology Committee of the Pandemic Response Task Force, 2020.

**Sprint, G:** Member, GU Honors Curriculum committee, 2020.

## Accomplishments: Students

J.I. Doria (EE'21) moderated the inaugural Riverside Chat panel discussion on energy and sustainability, presented by Greater Spokane Inc. and the University District.

SEAS Civil Engineering students who presented at the 2021 Spokane Intercollegiate Research Conference are as follows:

- Abigail Lennah Marquez (CE'22), The Sustainability and Cost of Solar Roofing in Spokane Compared to Conventional Standing Seam Roofs. Faculty Sponsor: Dr. Joshua Schultz

SEAS Computer Science students who presented at the 2021 Spokane Intercollegiate Research Conference are as follows:

- Leon Garcia-Camargo (CS'23), Zipf's Law in Speech: Child Autism Spectrum Disorder. Faculty Sponsor: Dr. Paul De Palma
- Nora Howard (CS'22), Ecological Momentary Assessment of Patient Recovery in an Outpatient Environment. Faculty Sponsor: Dr. Gina Sprint
- Cole Olafson (CS'21), Leon Garcia-Camargo (CS'23) and Jason Lunder (CS'22), Machine Translation Using Dependency Trees. Faculty Sponsor: Dr. Aaron Crandall
- Tristan Call (CS'22), Gamifying Software Engineering Tools to Motivate Computer Science Students to Start and Finish Programming Assignments Earlier. Faculty Sponsor: Dr. Gina Sprint

SEAS Mechanical Engineering students who presented at the 2021 Spokane Intercollegiate Research Conference are as follows:

- Marissa Encarnacion (ME'21) and Lindsey Young (ME'21), Improving Hydrogels for Artificial Cartilage. Faculty Sponsor: Dr. Harman Khare
- Steven Mamolo (ME'21) and Anna Leigh Miller (ME'21), Friction and Wear of 3D Printed Polymer Composites. Faculty Sponsor: Dr. Harman Khare
- Brenden Miller (ME'22) and Steven Mamolo (ME'21), Nanoscale Analysis of Transfer Films in Ultra-Low Wear Polymer Composites. Faculty Sponsor: Dr. Harman Khare
- Joshua Margraf (ME'21), Investigation into Young's Modulus and Tensile Strength of Tough PLA Bars. Faculty Sponsor: Dr. Pat Ferro
- Efren Chavez (ME'21), Effect of Hydrogen on 304 Stainless Steel. Faculty Sponsor: Dr. Pat Ferro (Accepted)

**2020**

Daniel Harrington (CpE'22) received a Jack L. McElroy Research Student Scholar award for the research proposal "Opportunistic Proactive Caching for Content-Centric Networks." Faculty Advisor: Dr. John Tadrous.

Ethan Higa (CpE'23) received a Steeves-Betzler Research Student Scholar award for the research proposal "Low-gain Based Controller Development for a 2-DOF Helicopter Model." Faculty Advisor: Dr. Meirong Zhang.

Jessica Vazquez (CE'22) received a Steeves-Betzler Research Student Scholar award for the research proposal, "Bonechar filtration media for the removal of fluoride from drinking water in low-income and remote communities." Faculty Advisor: Dr. Kyle Shimabuku.

Leon Antonio Garcia-Camargo (CS'23) received a Robert W. Gillette Research Student Scholar award for the research proposal "Zipf's Law and the Speech of Children with Autistic Spectrum Disorder." Faculty Advisor: Dr. Paul De Palma.

Nora El Naby (CS'22) received a Jack L. McElroy Research Student Scholar award for the research proposal "Leveraging Ecological Momentary Assessment and Wearable Data for Online Recovery Analytics." Faculty Advisor: Dr. Gina Sprint.

Civil Engineering students in Gonzaga's student chapter of the Institute of Transportation Engineers received the ITE Western District's 'Momentum Award' for greatest increase in activity AY 2019-2020.

**Honors and Awards: Students**

Sixteen (3 CE, 1 EE, 12 ME) undergraduate students earned induction into the Gonzaga chapter of Tau Beta Pi, the engineering honor society.

Six (2 CE, 3 ME, 1 CS) undergraduates and one master's (T&D) student were accepted into the Jesuit honor society, Alpha Sigma Nu.

Antonio Roman Campos (CE'22) presented his top-prize-winning technical paper on civil engineering ethical responsibilities during the COVID-19 epidemic at the ASCE Region 8 student conference.

Audrey Stevenson (CE'23) earned Gonzaga University's Second-Year GPA Award for 2020-21 AY.

Brenden Miller (ME'22) won an internationally-competitive scholarship from the Society of Tribologists & Lubrication Engineers (STLE) for academic excellence and proposed research; the scholarship funds research which will be conducted under Dr. Harman Khare in 2021-22.

Gretchen Rudel (EE'21), Women's Volleyball, received the Female Scholar Athlete of the Year award.

Jack Wilson (EM'24) earned Gonzaga University's First-Year GPA Award for 2020-21 AY.

Marissa Encarnacion (ME'21) earned the SEAS Outstanding Senior award based on her academic performance, research work in tribology, extracurricular leadership of GU Robotics, and her community contributions.