

PATRICIA BUCHANAN

Curriculum Vitae

Industrial and Systems Engineering
341F Aerospace Engineering Building
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Seattle, WA 98195

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EDUCATIONAL HISTORY

University of Central FL, Orlando, FL
Ph.D., Industrial Engineering
May 2014

Advisors: Dr. Dima Nazal and Dr. Christopher Geiger

Dissertation: "Shop Scheduling in the Presence of Batching, Sequence-dependent Setups and Incompatible Job Families Minimizing Earliness and Tardiness Penalties"

University of Florida, Gainesville, FL
Masters, Industrial & Systems Engineering
May 2009

University of Florida, Gainesville, FL
Bachelors, Industrial and Systems Engineering
Minor: Business Administration
Certificate: Sales Engineering
May 2006

EMPLOYMENT HISTORY

The University of Washington, Department of Industrial & Systems Engineering
Seattle, WA
Assistant Teaching Professor, 2016-Present

Proficiency Solutions
Seattle, WA
Owner/Consultant 2014-2016

Harris Corporation
Melbourne, FL
Manufacturing Engineer/Lean Six Sigma Instructor, 2003-2013

AWARDS AND HONORS

Institute of Industrial & Systems Engineering Chapter Gold Award, Spring 2022
 College of Engineering Faculty Award for Teaching, Spring 2022
 Faculty Appreciation for Career Education & Training (FACET) Recognition, Spring 2022, UW
 Simio Competition, Top 7% Finalist, Faculty Advisor, Spring 2021, Simio Corporation
 Simio Competition, 4th Place, Faculty Advisor, Spring 2019, Simio Corporation
 Faculty Appreciation for Career Education & Training (FACET) Recognition, 2019, UW
 Simio Competition, 4th Place, Faculty Advisor, 2018, Simio Corporation
 Harris Operations Excellence Award, 2007, Harris Corporation
 Finalist for Space Coast New Engineer of the Year, 2003, Society of Women Engineers

MISCELLANEOUS

Abstracts, letters, non-refereed papers.

1. **Patricia Buchanan**, Oscar Candanoza, Ivan Itturiaga “Planning for Tech Refresh 3 Production Using Simio”, *Winter Simulation Conference*, Phoenix, AZ December 2021

Other significant scholarship dissemination (web sites, software, Wikis, etc.)

- News Article (Lynnwood Times): [UW Industrial and Systems Engineering Capstone Project to save County an estimated \\$70,000 annually - Lynnwood Times](#)
- News Article (Mukilteo Beacon): [Snohomish County, University of Washington partnership advances innovation - Mukilteo Beacon](#)
- News Article (NBC Right Now): [UW engineering students help Snohomish save \\$70,000 annually with better IT | News | nbcrightnow.com](#)
- News Article (The Center Square): [UW engineering students help Snohomish save \\$70,000 annually with better IT | Washington | thecentersquare.com](#)
- News Article (Snohomish County, WA): On our public facing county site: [News Flash • Snohomish County, WA • CivicEngage \(snohomishcountywa.gov\)](#)
- News Article (The Whole U, UW): Weather Route Response Optimization for the City of Bellevue, [Faculty Friday: Jennifer Otten and Branden Born](#)
- City Council Presentation: [Weather Route Response Optimization for the City of Bellevue](#)

Outside Professional Work for Compensation (1460s)

Name of Organization	Start Date	End Date	Number of Days	Description of Activity
L3Harris	08/2020	Present	60	Building a Simio Model for the F-35 production line

Professional Certifications

Black Belt Certification Harris Corporation, 2012
 Green Belt Certification Harris Corporation, 2009

OTHER SCHOLARLY ACTIVITY

Invited lectures and seminars.

1. L3 Harris Corporation: Engineer Week, *TR3 Refresh Analysis with Simulation*, Fall 2021
2. University of Washington: Student Admittance Preview Day, *Industry Capstone for Engineering Students*, April 2019
3. University of Washington: ENGR 115: Engineering Transformation of Health Course, *Industrial & Systems Engineering in Health Care*, March 2019
4. University of Central Florida: Guest Lecturer at EIN2002: *Introduction to Industrial Engineering and Management Systems Course*, Fall 2008

Presentations given at conferences.

1. **Patricia Buchanan**, Oscar Candanoza, Ivan Itturiaga "Planning for Tech Refresh 3 Production Using Simio", *Winter Simulation Conference*, Phoenix, AZ December 2021
2. **Patricia Buchanan**, Ramez Tadros "Resource Forecasting Through Simulation", *Institute for Industrial Engineers*, Orlando, FL June 2012.
3. **Patricia Buchanan**, Gwen Campbell, "The Application of DOE in Simulation Analysis", *Institute for Industrial Engineers*, Cancun, Mexico June 2010.
4. **Patricia Buchanan** "Simulation and Modeling: Non-Manufacturing Uses and Practical Lessons Learned", *Institute for Industrial Engineers*, Orlando, FL May 2008.
5. **Patricia Buchanan** "Lean & Six Sigma Process Implementation with Simulation", *Florida Sterling Annual Conference*, Orlando, FL July 2008.
6. **Patricia Buchanan, Sandra Abdalian** "Lean Out your Process Using Simulation Tools", *Institute for Industrial Engineers*, Nashville, TN June 2007.
7. **Patricia Buchanan** Operations Engineering Management Commencement Speech, *University of FL*, Gainesville, FL May 2006.

Conferences Attended

1. Capstone Design Conference, University of Texas, Dallas, TX June 2022
2. IISE Annual Conference, Seattle, WA May 2022
3. Winter Simulation Conference, Phoenix, AZ December 2021
4. IISE Annual Conference 2021, Online
5. IISE Annual Conference, Orlando, FL 2012
6. IISE Annual Conference, Cancun, Mexico 2010
7. Winter Simulation Conference, Washington D.C., 2008
8. Florida Sterling Annual Conference, Orlando, FL 2008
9. IISE Annual Conference, Orlando, FL 2008
10. IISE Annual Conference, Nashville, TN June 2007

Professional society memberships

- Member, American Society for Engineering Education, 2022
- Member, Alpha Pi Mu, 2022
- Member, Institute of Industrial and Systems Engineering Society, 2019-Present
- Member, Society of Women Engineers, 2004-2009

Reviewer Work

Institute of Industrial and Systems Engineering Annual Conference Paper Reviewer for Education
Track Fall 2020-Spring 2021

STUDENT MENTORSHIP

Mentor/Supervisor for PDIs, TAs and Graders

Summer 2022 Monika Kwapisz, Industrial & Systems Engineering Graduate Student Grader
Tianchen Sun, ISE Graduate Student TA
Siva Ramani, ISE, Pre-Doctoral Instructor

Spring 2022 Monika Kwapisz, ISE Graduate Student TA

Winter 2022 Siva Ramani, ISE Graduate Student TA
Tianchen Sun, ISE Graduate Student TA
Ameer Hamza Shakur, ISE Graduate Student TA

Fall 2021 Siva Ramani, ISE Graduate Student TA
Tianchen Sun, ISE Graduate Student TA
Lun Li, ISE Graduate Student TA
Monika Kwapisz, ISE Graduate Student TA

Summer 2021 Victoria, Diaz, ISE, Pre-Doctoral Instructor

Spring 2021 Zahra Ghatrani, ISE Graduate Student TA

Winter2021 Nick Terry, ISE Graduate Student TA
Ziyu Cheng, ISE Graduate Student TA
Siva Ramani, ISE Graduate Student TA
Vandit Shah, ISE Graduate Student TA

Fall 2020 Quoc D. Cao “Daniel, ISE Graduate Student TA
Siva Ramani, ISE Graduate Student TA
Qiran Wu, ISE Graduate Student Grader
Zahra Ghatrani, ISE Graduate Student TA

Summer 2020 Siva Ramani, ISE Graduate Student TA
Xiaonan Sun, ISE Graduate Student Grader
Christopher Salazar, ISE Graduate Student TA

Spring 2020 Quoc D. Cao “Daniel, ISE Graduate Student TA
Siva Ramani, ISE Graduate Student TA
Qiran Wu, ISE Graduate Student Grader

Winter 2020 Lun Li, ISE Graduate Student TA
Qiran Wu, ISE Graduate Student TA
Zhanlin Liu, ISE Graduate Student TA
Yu-Xiang Hu, ISE Graduate Student TA

Fall 2019 Pariyakorn Maneekul, ISE Graduate Student TA
Qiran Wu, ISE Graduate Student TA
Tianchen Sun, ISE Graduate Student TA
Michael Shieh, ISE Graduate Student TA

Summer 2019 Siva Ramani, ISE Graduate Student TA

Spring 2019 Seyed “Hasan” Manzouralajdad, ISE Graduate Student TA
Pariyakorn Maneekul, ISE Graduate Student TA
Michael Shieh, ISE Graduate Student TA

Winter 2019 Jue Gong, ISE Graduate Student TA
Zahra Ghatrani, ISE Graduate Student TA
Tianshu Feng, ISE Graduate Student TA
Siva Ramani, ISE Graduate Student TA

Fall 2018	Zahra Ghatrani, ISE Graduate Student TA Quoc D. Cao “Daniel, ISE Graduate Student TA Zach McCauley, ISE Graduate Student TA Seyed “Hasan” Manzouralajdad, ISE Graduate Student TA
Summer 2018	Steven Hwang, ISE Graduate Student TA
Spring 2018	Peeyush Kumar, ISE Graduate Student TA Jue Gong, ISE Graduate Student TA Qiang “Irving” Meng, ISE Graduate Student TA Ting-Yu Ho (Martin), ISE Graduate Student TA
Winter 2018	Seyed “Hasan” Manzouralajdad, ISE Graduate Student TA Qiang “Irving” Meng, ISE Graduate Student TA Larissa P. Guimaraes Petroianu, ISE Graduate Student TA Zahra Ghatrani, ISE Graduate Student TA
Fall 2017	Michelle Song, ISE Graduate Student TA Zahra Ghatrani, ISE Graduate Student TA
Spring 2017	Peeyush Kumar, ISE Graduate Student TA David Linz, ISE Graduate Student TA Mutita Siriruchatanon, ISE Graduate Student TA Qiang “Irving” Meng, ISE Graduate Student TA Ting-Yu Ho (Martin), ISE Graduate Student TA
Winter 2017	Seyed “Hasan” Manzouralajdad, ISE Graduate Student TA Zhanlin Liu, ISE Graduate Student TA Zahra Ghatrani, ISE Graduate Student TA Seyed “Hasan” Manzouralajdad, ISE Graduate Student TA
Fall 2016	Zahra Ghatrani, ISE Graduate Student TA Ting-Yu Ho (Martin), ISE Graduate Student TA Mahshid Salemi Parizi, ISE Graduate Student TA

Undergraduate Project Mentorship

- Faculty Advisor for the Snohomish County Capstone team’s project, “*Retail Software Database Integration*”, Winter/Spring2022. Snohomish County is creating a news release of this project. News Release title: “*Snohomish County and University of Washington Partnership Advances Innovation*”.
- Faculty Advisor for the Starbucks’ Capstone team project, “*Automation of Time and Motion Data Collection Processes*”, Winter/Spring 2021
- Faculty Advisor for the King County Metro Capstone team project, “*Real Time Bus Arrival Predictions*”, Winter/Spring 2020
- Faculty Advisor for the City of Bellevue Capstone team’s project, “*Winter Weather Route Response Optimization*”, Winter/Spring 2019. Mentored the team for their presentation to the Mayor of Bellevue at City Hall.
- Faculty Advisor for the UW Ambulatory Clinic Capstone team’s project, “*Resource Optimization of UW Medical Center Ambulatory Clinic*”, Winter/Spring 2018
- Faculty Advisor for the UW Housing and Food Services Capstone team’s project, “*Operationalizing Mobile Ordering*”, Winter/Spring 2018
- Sofia Dolce, *Future Meets Present*, Honors Project, Mary Gates Leadership Scholarship Project 2017-2018
- Mentored simulation portion for MOD’s Pizza Capstone Group, Spring 2017

- Mentored simulation portion for Starbuck's Capstone Group, Spring 2017

DOCUMENTATION OF TEACHING EFFECTIVENESS

Courses Taught (Primary Instructor) & Student Evaluations (Adjusted as required per CoE Guidelines. Scale is 0 (very poor) – 5 (excellent) or 0 (lowest) – 5 (highest))

Course	Title	Quarter	Credit Hrs	Enrollment	Evaluations Response	Item 1	Item 3	Item 4	Overall Adj. Median
INDE495	Design in the Mfg Firm	Spring 2022	4	42	Yes, 13/42	4.5	4.6	4.5	4.5
INDE337	Intro. to Mfg. Systems	Spring 2022	4	13	Yes, 11/13	4.7	4.8	4.9	4.8
INDE494	Design in the Mfg Firm	Winter 2022	4	42	Yes, 11/42	4.8	4.8	4.8	4.8
INDE315	Prob.& Statistics for Engineers	Winter 2022	3	147	Yes, 31/147	4.6	4.9	4.8	4.7
INDE315	Prob.& Statistics for Engineers	Fall 2021	3	137	Yes, 27/137	4.9	5.2	5.2	5.0
INDE430	Manufacturing and Scheduling	Fall 2021	4	50	Yes, 31/50	4.8	4.9	4.9	4.8
INDE512	Intro. To Opt. Modeling	Summer 2021	4	14	Yes, 6/14	5.1	5.1	5.1	5.1
INDE337	Intro. to Mfg. Systems	Spring 2021	4	33	Yes, 14/33	4.5	5.0	4.4	4.7
INDE495	Design in the Mfg Firm	Spring 2021	4	48	Yes, 11/48	4.6	4.8	4.5	4.6
INDE494	Design in the Mfg Firm	Winter 2021	4	49	Yes, 12/49	4.6	4.8	4.7	4.7
INDE315	Prob.& Statistics for Engineers	Winter 2021	3	138	Yes, 37/138	4.3	4.9	4.8	4.5
INDE250	Engineering Economy	Winter 2021	4	67	Yes, 26/67	4.4	4.8	4.8	4.7
INDE315	Prob.& Statistics for Engineers	Fall 2020	3	139	Yes, 44/139	4.8	5.2	4.8	4.9
INDE439	Plant Layout and Mat'l Handling	Fall 2020	4	53	Yes, 15/53	4.9	4.8	4.8	4.8

Course	Title	Quarter	Credit Hrs	Enrollment	Evaluations Response	Item 1	Item 3	Item 4	Overall Adj. Median
INDE 512	Intro. To Opt. Modeling	Summer 2020	4	17	Yes, 7/17	4.8	5	5	4.7
INDE 315	Prob.& Statistics for Engineers	Summer 2020	3	55	Yes, 8/55	5.0	4.8	5.0	4.9
INDE 495	Design in the Mfg Firm	Spring 2020*	4	59	Yes, 15/59	4.2	4.7	4.6	4.9
INDE 315	Prob.& Statistics for Engineers	Spring 2020*	3	139	Yes, 40/139	3.5	4.6	4.1	4.0
INDE 315	Prob.& Statistics for Engineers	Winter 2020	3	138	Yes, 37/138	4.3	4.9	4.8	4.5
INDE 250	Engineering Economy	Winter 2020	4	67	Yes , 26/67	4.4	4.8	4.8	4.7
INDE 494	Design in the Mfg Firm	Winter 2020	4	49	Yes, 12/49	4.6	4.8	4.7	4.7
INDE 315	Prob.& Statistics for Engineers	Fall 2019	3	146	Yes 27/146	4.6	4.9	5.1	4.8
INDE 430	Manufacturing and Scheduling	Fall 2019	4	64	Yes, 26/64	4.7	4.9	4.8	4.8
INDE 337	Intro. to Mfg. Systems	Fall 2019	4	39	Yes, 9/39	4.5	4.7	4.6	4.6
INDE 512	Intro. to Optimization Modeling	Summer 2019	4	16	Yes, 7/16	4.2	4.4	4.4	4.4
INDE 315	Prob.& Statistics for Engineers	Spring 2019	3	40	Yes, 40/50	4.7	5.2	5.1	5.0
INDE 495	Design in the Mfg Firm	Spring 2019	4	58	Yes, 13/58	4.8	4.9	4.8	4.8
INDE 250	Engineering Economy	Winter 2019	4	67	Yes, 36/67	4.7	5.0	4.8	4.8
INDE 315	Prob.& Statistics for Engineers	Winter 2019	3	154	Yes, 75/154	4.5	5.0	4.9	4.6
INDE 494	Design in the Mfg Firm	Winter 2019	4	58	Yes, 17/58	4.5	4.3	4.7	4.5
INDE 315	Prob.& Statistics for Engineers	Fall 2018	3	148	Yes, 56/148	4.7	5.0	4.9	4.9
INDE 337	Intro. to Mfg. Systems	Fall 2018	4	39	Yes, 10/39	4.5	4.8	4.7	4.6

Course	Title	Quarter	Credit Hrs	Enrollment	Evaluations Response	Item 1	Item 3	Item 4	Overall Adj. Median
INDE 439	Plant Layout & Mtl Handling	Fall 2018	4	63	Yes, 42/63	4.3	4.7	4.6	4.5
INDE 512	Intro. to Optimization Modeling	Summer 2018	4	25	Yes, 12/25	3.5	3.5	3.5	3.4
INDE 250	Engineering Economy	Spring 2018	4	71	Yes, 26/71	4.6	4.8	4.7	4.7
INDE 315	Prob.& Statistics for Engineers	Spring 2018	3	150	Yes, 33/150	4.6	5.1	4.9	4.8
INDE 495	Senior Design	Spring 2018	4	57	Yes, 15/57	4.7	4.8	4.8	4.4
INDE 315	Prob.& Statistics for Engineers	Winter 2018	3	148	Yes, 42/148	4.1	4.5	4.3	4.3
INDE 424	Simulation	Winter 2018	4	51	Yes, 41/51	4.5	4.7	4.5	4.5
INDE 494	Design in the Mfg Firm	Winter 2018	4	57	Yes,21/57	4.2	4.6	4.4	4.4
INDE 430	Manufacturing and Scheduling	Fall 2017	4	48	Yes, 32/48	4.1	4.7	4.6	4.4
INDE 337	Intro to Mfg Systems	Fall 2017	4	40	Yes, 35/40	4.1	4.4	4.3	4.1
INDE 250	Engineering Economy	Spring 2017	4	74	Yes, 25/74	4.3	4.7	4.5	4.5
INDE 351	Human Factors Engineering	Spring 2017	4	47	Yes, 24/47	4.2	4.6	4.6	4.4
INDE 315	Prob.& Statistics for Engineers	Spring 2017	3	151	Yes, 46, 151	3.6	4.0	3.9	3.7
INDE 424	Simulation	Winter 2017	4	50	Yes, 37/50	4.1	4.4	4.2	4.2
INDE 315	Prob.& Statistics for Engineers	Winter 2017	3	143	Yes, 71/143	3.7	4.4	4.0	3.9
INDE 430	Manufacturing and Scheduling	Fall, 2016	4	45	Yes, 26/45	4.2	4.3	4.1	4.2
INDE 439	Plant Layout and Material Handling	Fall, 2016	4	35	Yes, 29/35	3.8	4.1	3.7	3.8
INDE 512	Introduction to Optimization Modeling	Fall, 2016	4	25	Yes, 20/25	3.3	3.5	3.4	3.5

Item 1: The course as a whole was:

Item 3: The instructor's contribution to the course was:

Item 4: The instructor's effectiveness in teaching the subject matter was:

*pivoted to remote learning due to pandemic. First quarter of pandemic

Peer Teaching Evaluations

Course	Quarter	Reviewer
INDE337	Spring 2022	Tom Furness
INDE250	Winter 2021	Christina Mastrangelo
INDE315	Spring 2020	Tom Furness
INDE315	Spring 2019	Tom Furness
INDE430	Autumn 2017	Linda Boyle
INDE 439	Autumn 2016	Christina Mastrangelo

Independent Study

Course	Title or Student Name	Quarter	# of Students (Total Credit Hrs)
INDE430	Vipasha Jain	Fall, 2019	1(1)

List of other teaching contributions

- Created a distance learning designation course for INDE 315 Probability and Statistics for Engineers. Course launched Summer of 2022, Enrollment of ~70 students.
- Organized and led Annual ISE Capstone Project Fair, 2018-Present. Modified project fair to be a more formal event. Moved project fair from Winter to Fall quarter. Project fair is currently aligned to occur around the same time as the other COE departments in order to facilitate more interdisciplinary projects. Attendance includes approximately 50 ISE undergraduates and 25 Industry sponsors/mentors.
- Organized and led the Annual ISE Capstone Expo and Poster Competition, 2018-Present. Attendance includes approximately 100 ISE undergraduates (Juniors and Seniors) and 25 Industry sponsors/mentors, 12 judges, and approximately 50 additional spectators. In 2020 and 2021, pivoted to remote competition with over 200 people in attendance.
- Mentor for Industry Capstone projects, Winter 2018-Present. Approximately 11 projects each year and about 55 students each year.
- Faculty Advisor to the IISE Outstanding Capstone Award 2nd place recipients, the Amazon Stream Team. "*Multi-Ship Mode Forecasting and Optimization*", 2022. Prepared and submitted nomination package for the team and advised the team on project.
- Re-designed INDE 439, Facilities Planning and Material Handling course to include AutoCad curriculum.

- Faculty Advisor to the IISE Outstanding Capstone Award Top 10 finalist, Stryker Corporation team project, “*Reducing Inventory Levels Through Modeling and Kanban Systems*”, 2020. Prepared and submitted nomination package for the team and advised the team on project.
- Advisor to Simio Simulation Competition Teams 2017-Present. Simio’s annual competition has Universities from around the world participate bi-annually.
 - Spring 2022, 4 undergraduate students
 - Spring 2021, 4 undergraduate students, Semi-finalists out of 339 teams
 - Fall 2020, 3 undergraduate students,
 - Fall 2019, 2 graduate students, Semi-finalists out of 291 teams
 - Spring 2019, 4 undergraduate students, Fourth Place out of 210 teams
 - Fall 2018, 2 undergraduate students, Fourth Place out of 300 teams
 - Spring 2018, 4 undergraduate students, Semi-finalists out of 219 teams
 - Spring 2017, 5 undergraduate students

Other supporting documents

Center for Learning and Teaching Evaluation report: Buchanan REPORT_SGID-315-Sp18.pdf

Teaching Awards, Nominations for Teaching Awards

College of Engineering Faculty Award for Teaching, Spring 2022

Nominated for College of Engineering Faculty Award for Teaching, Spring 2020

Nominated for Celebrate: University of Washington Women, Winter 2019

SERVICE

Departmental Service

- | | |
|--------------|--|
| 2022-Present | Alpha Pi Mu Faculty Advisor <ul style="list-style-type: none">• Revived the University of Washington Chapter• Recruited new members and established an executive board |
| 2021-Present | Accreditation and Continuous Improvement Committee <ul style="list-style-type: none">• Compile and prepare data for the ABET accreditation• Assisted in the ABET accreditation visit in (October 2019), ABET committee member observed and questioned my INDE 430 class• Presented to the Executive Advisory Board on ABET |
| 2020-Present | Institute of Industrial and Systems Engineering Chapter Faculty Advisor |
| 2018-Present | Institute of Industrial and Systems Engineering Capstone Faculty Advisor <ul style="list-style-type: none">• Mentored approximately 11 teams (~55 students) each year on industry sponsored capstone projects• Collaborated with the College of Engineering Capstone Director to recruit and vet projects each year beginning in the Summer and going into the Fall quarter |

College and University Service

- 2021-Present COE Interdisciplinary Capstone Faculty Team
- Participated in discussion for development of COE Capstone project selection app.
 - Collaborated with the COE Capstone director and other faculty advisors for Capstone to facilitate an interdisciplinary structure for capstone projects
- 2020-2021 COE Steering Committee
- Participated in discussion for 5-year visionary plan for the College of Engineering
- 2020-2021 Co-Chair Innovative Engineering Education Subcommittee
- Co-led discussions and organized meetings with subcommittee members to create a plan for innovations in Engineering Education
 - Co-wrote final report, “*Innovative Engineering Education*”, which outlines short term and long-term plans to revolutionize engineering education at UW

Professional society and other service

- 2020-2021 Institute of Industrial and Systems Engineering Annual Conference Co-Chair Education Track Reviewer
- Reviewed over 30 papers
 - Co-planned education track sessions for conference
 - Down selected top 3 papers for best paper track

Community service

- Spring 2022 Nominations Committee Chair for Canyon Creek PTA
- Advertised and managed nominations for the Canyon Creek PTA executive board
- Fall-Spring 2016 Science Chair for Canyon Creek PTA
- Planned and led the Fall Science Fair which hosted over 100 students and 20 volunteers
 - Planned and led an Hour of Code Program for approximately 30 students
- 2014-2019 Disciples Club Catechist for St. Brendan’s Catholic Church
- Led several group learning activities for ages five and under
- Fall 2008 Volunteer for Society of Women Engineers “Introduce Girls to Engineering Day”
- Co-led four workshops for a classroom of over 20 girls to explore civil engineering

Additional activities related to diversity, equity, and inclusion

- Faculty advisor for the All Wheels Up capstone project, “*Financial Incentives for Wheelchair Accessible Planes*”, Winter/Spring 2022
- Faculty advisor for the All Wheels Up capstone project, “*Roadmap to Accessible Air Travel*”, Winter/Spring 2022

- Incorporated Diversity, Equity, and inclusion content into INDE 337 (Impact of Industrial Engineers), 2022
- Incorporated Diversity, Equity, and inclusion content into INDE 494 (Engineering Reverse Innovations, Designing Wheelchairs for Developing Countries), 2022
- Faculty advisor for the Collins Aerospace capstone project, “*Aircraft Cabin Empathy*”, Winter/Spring 2020
- Facilitated student projects for Lighthouse for the Blind, which employs blind/deaf people. Two projects were conducted in INDE 337 (Introduction to Manufacturing Systems) for the company: “*MOLLE Bladder Assembly Line Improvement*” and “*Improving the MPHS Bladder Production Line*”, Fall 2019
- Advised student project for Lighthouse for the Blind, INDE 337, “*Process Improvement at The Lighthouse for the Blind*”, Fall 2018
- Faculty advisor for the Seattle Children’s Hospital capstone project, “*Seattle Children’s Research TechBar*”, Winter/Spring 2019. Project looked a providing job opportunities and tech support for underserved communities.
- Faculty advisor for the Eastside Baby Corner capstone project, “*Streamlining the Process for Inventory Reception, Storage and Distribution*”, Winter/Spring 2019