







COLLEGE OF ENGINEERING School of Civil and Construction Engineering

EMPOWERING THE NEXT GENERATION OF CONSTRUCTION PROFESSIONALS

Robert L. Bertini \diamond March 24, 2022

At Home in Oregon



Oregon State University College of Engineering



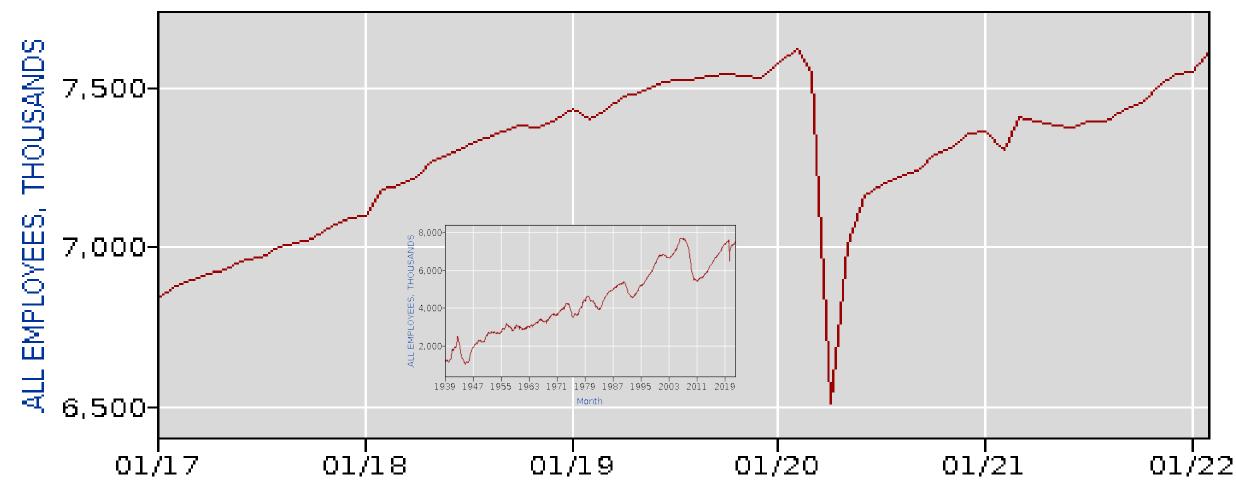
· · · · · · · · · · · · · · · · · ·







Construction Industry Workforce 7.6 million – February 2022



Month

Oregon State University

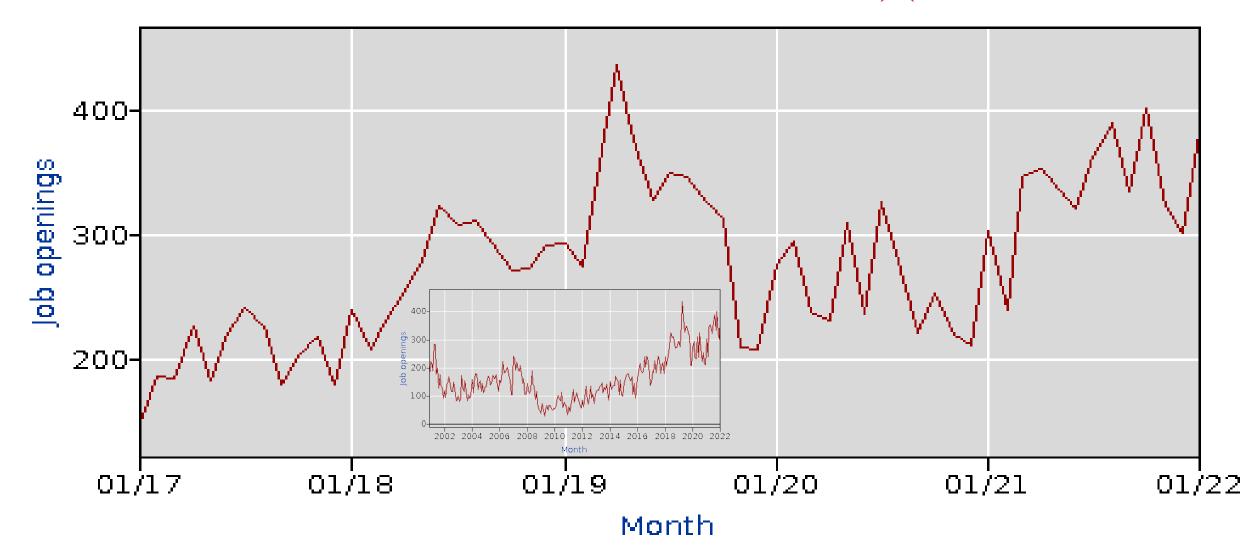
U.S. BUREAU OF LABOR STATISTICS

College of Engineering

Construction Industry Job Openings

Oregon State University College of Engineering

U.S. BUREAU OF LABOR STATISTICS

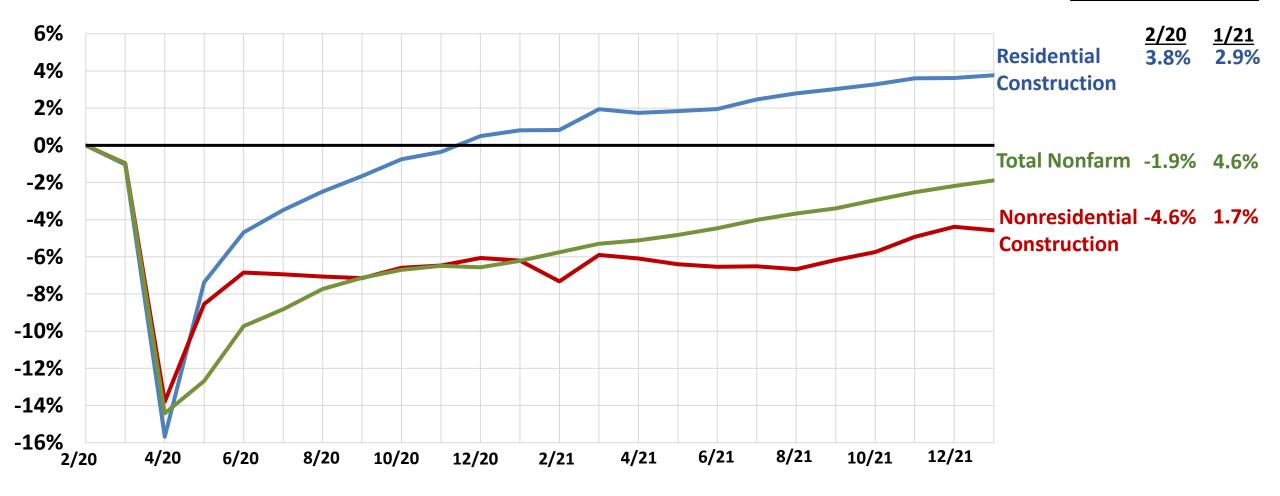


Total Nonfarm & Construction Employment, Feb. 2020-Jan. 2022

cumulative change (seasonally adjusted)



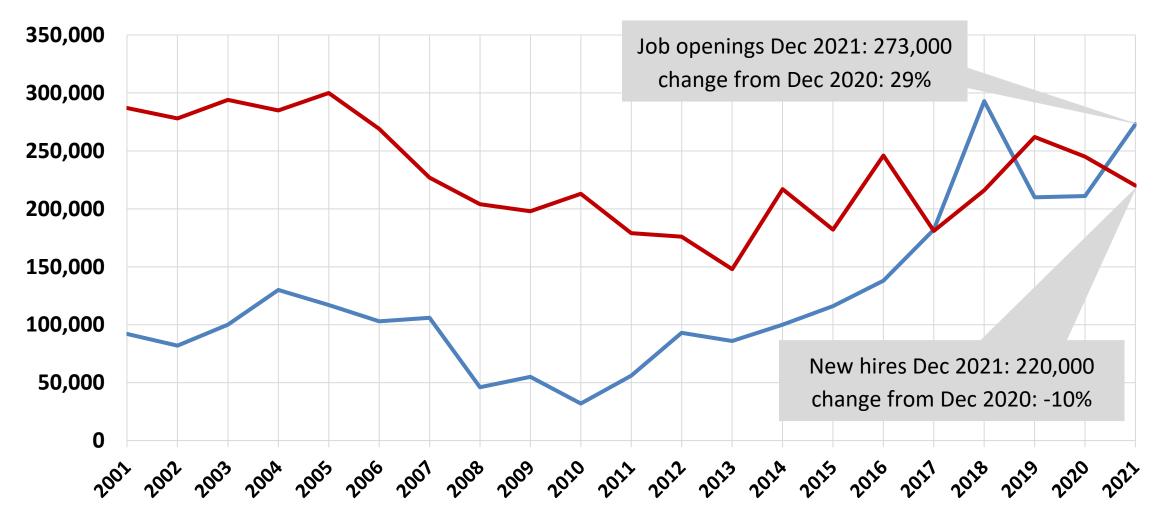
Change to 1/22 from:



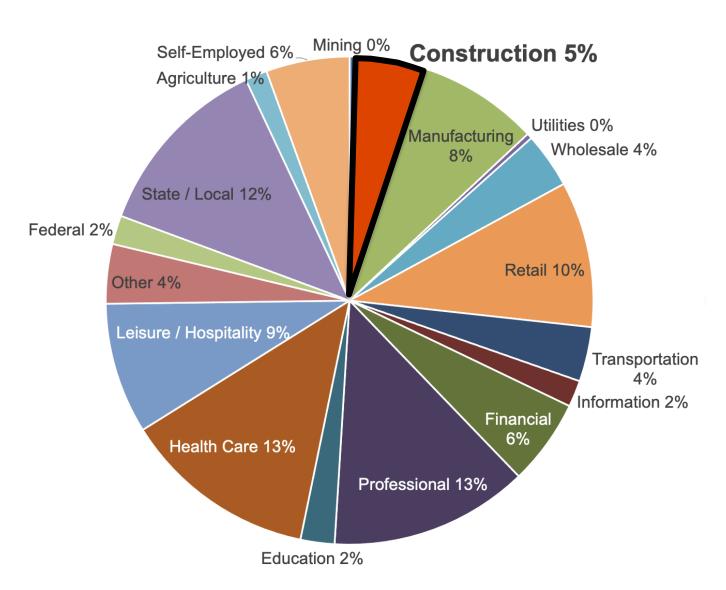
Construction job openings and hires



Dec 2001-Dec 2021, not seasonally adjusted



Construction Industry Importance



- 5% of U.S.
 Employment (2020)
 - 7.4 million
 Construction
 - 154 million Total
- 13% of Global Gross
 Domestic Product
- Strong Career
 Satisfaction and
 Growth
- Job Security and Benefits







33,000

students total

#10

Largest Engineering

Program in the U.S.

1868

University founded











More research funding than any university in Oregon.

1 of 2 land, sea, space and sun grant universities in the U.S.



2,846

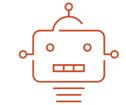
students from around the world



#4 Best Online Programs in the U.S.



#1 Most Innovative in the PNW Campus commitment to inclusivity and social justice



#5 Robotics Engineering School in the U.S.



Gold Rating for Bike Friendliness



17,508

students from Oregon



#2 Forestry Program in the World



#10 Best Big Data Degree in the U.S.



11,958

students from 49 U.S. states

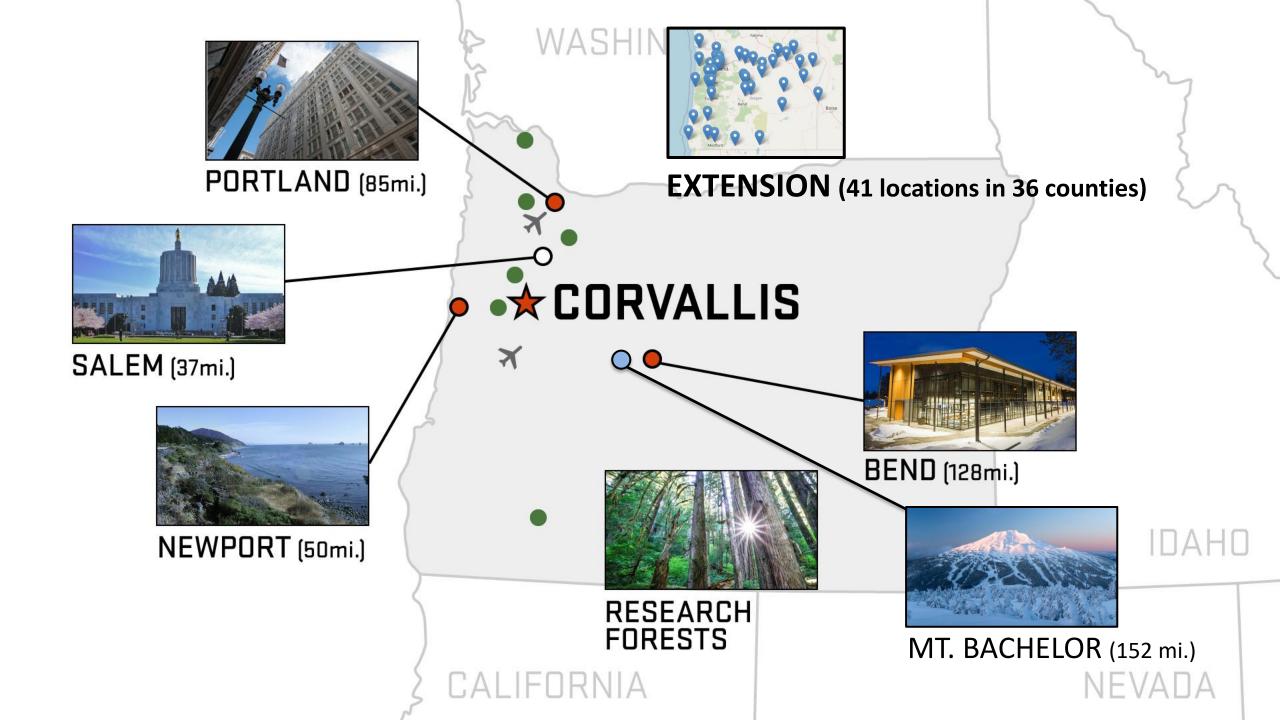


#3 Oceanography Program in the World



#2 Friendliest College Town in America

SUN andrain



How Are We Organized?





School of Chemical, Biological, and Environmental Engineering

School of Civil and Construction Engineering

- Civil Engineering
- Construction Engineering Management
- Architectural Engineering

School of Electrical Engineering and Computer Science

School of Mechanical, Industrial, and Manufacturing Engineering

School of Nuclear Science and Engineering

Humanitarian Engineering (minor)

Biological and Ecological Engineering

Forest Engineering



Our Mission School of Civil and Construction Engineering



MISSION

In an inclusive and collaborative environment, we: conduct interdisciplinary research toward a safe, resilient, and sustainable world; educate socially responsible engineers and construction managers for work in industry and academia and for lifelong learning; and support professional partnerships, outreach, dissemination, and community service.



Oregon State University's School of Civil and Construction Engineering is committed to taking actions to make our community and engineering professions more inclusive and just. We listen to, engage, and encourage people so that everybody belongs.





LAND ACKNOWLEDGMENT

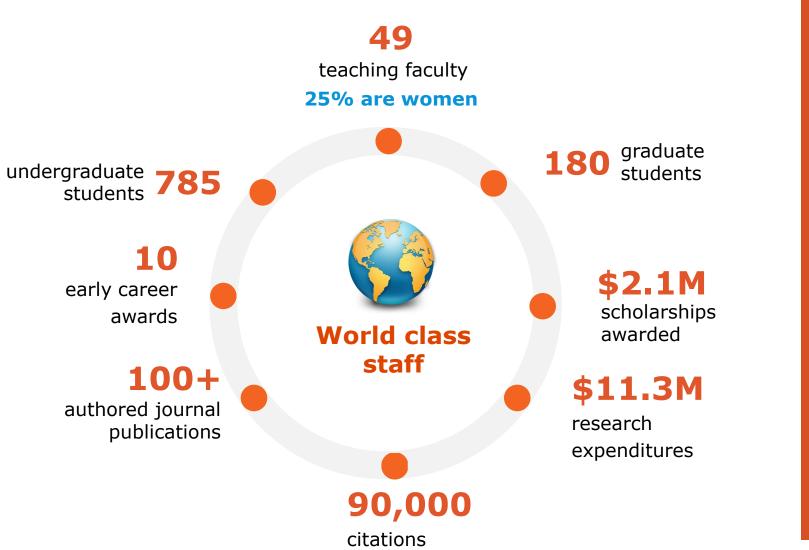
Let it be acknowledged that Oregon State University in Corvallis, Oregon is located within the traditional homelands of the Mary's River or Ampinefu Band of Kalapuya. Following the Willamette Valley Treaty of 1855 (Kalapuya etc. Treaty), Kalapuya people were forcibly removed to reservations in Western Oregon. Today, living descendants of these people are a part of the Confederated Tribes of Grand Ronde Community of Oregon and the Confederated Tribes of the Siletz Indians.

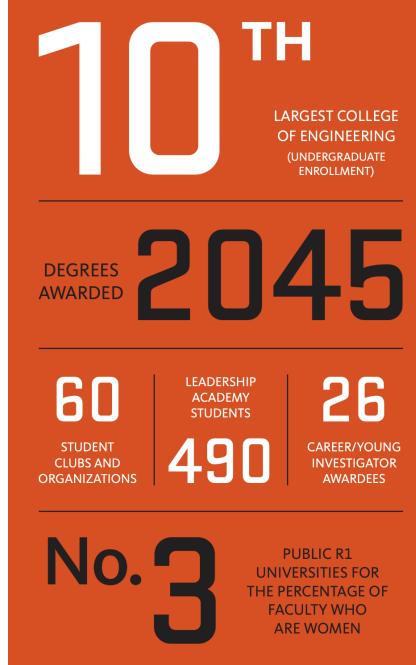


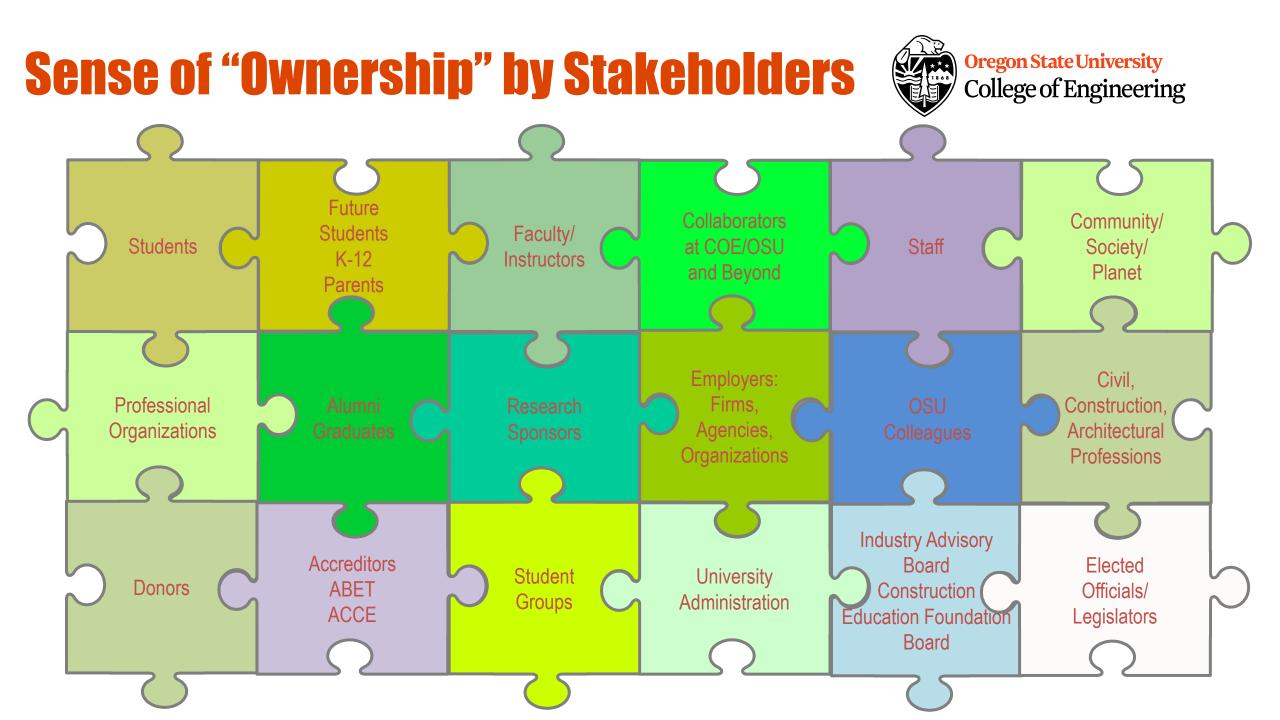


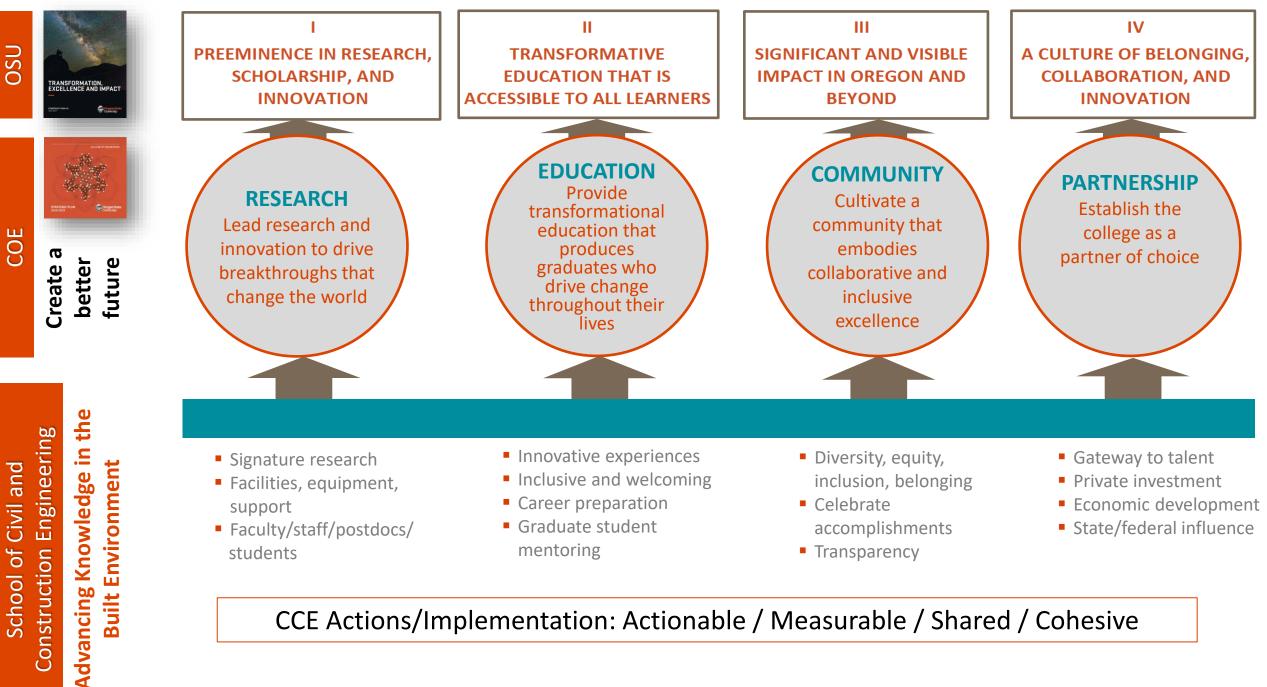
Students, faculty, staff, and alumni will maintain the highest standards of honesty and integrity; strive for these standards in all representations, academic pursuits, research and scholarly activity; respect the property and individual rights of others; uphold the specific principles described in the Honor Code; and actively support the Code.

By the Numbers School of Civil and Construction Engineering





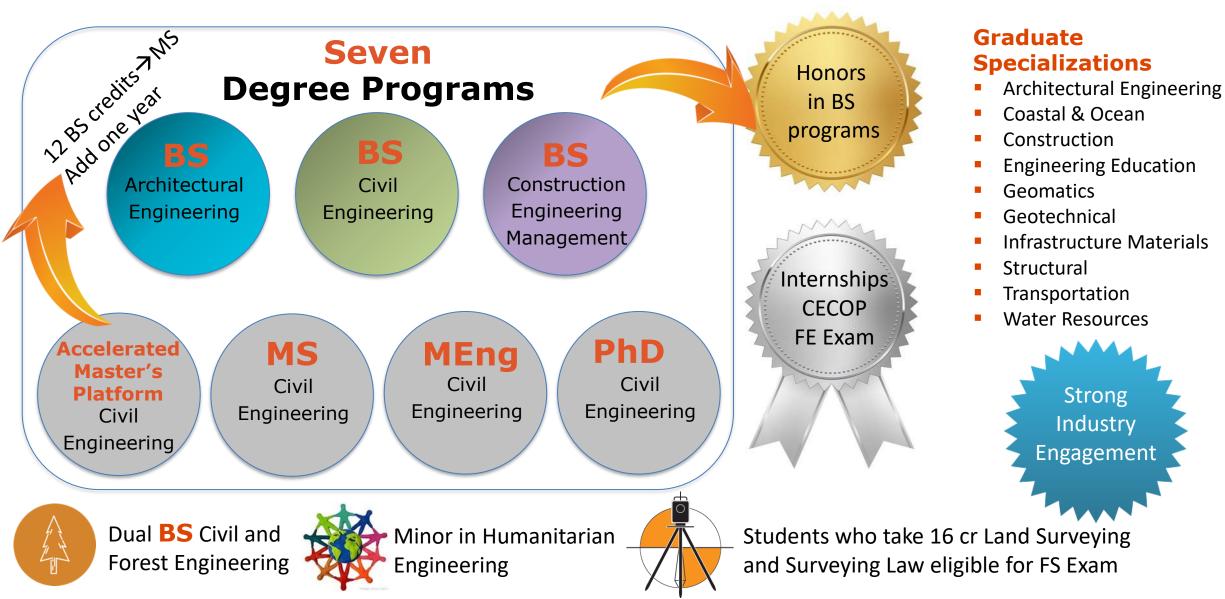




CCE Actions/Implementation: Actionable / Measurable / Shared / Cohesive

School of Civil and Construction

By the Numbers School of Civil and Construction Engineering



Oregon State University

College of Engineering

Strong

Industry Support From Beginning

1969 Daily Barometer

Contracting Chapter Receives Charter

chapter of Associated General Contractors of America has received a national charter The charter followed one year of successful operation by the Oregon State chapter

The chapter, one of the nation, was presented by W. R. Rogers of Rogers Con struction Company in Portland during a banquet a the Corvallis Country Club last week. Attending the banquet were 66 chapter members, 22 advisors and seneral contractors.

The AGC of America prepares college graduates the contracting field and aids them throughout their career. Rogers told the student members they should the AGC theme "Skill, Responsibility and In tegrity" in order to uphold their goal of being good con-tractors. He also stated if they follow this theme, they can't go wrong. Oregon State now has two legrees which will prepare students for the contracting Students can earn a bachelor of science degree in

lvil Engineering Technology

PRESENTING THE AGC Student Chapter its charter to chapter President Walt Gamble, is W. R. Rogers of Rogers Construction Company of Portland. At left is John Salisbury, guest speaker, of television and radio fame. On the right is Hal Pritchard, associate professor of Civil Engineering.

specializing in either design or associate professor of Civil building from design. Un-Engineering; George LaBaun, dergraduates gain their associate professor of Pri practical experience during duction Technology; and Bob ummer working for general assistant professor of Phelos. Civil Engineering

Advisors for the OSU Stu-Student officers are presisent Chapter of AGC are dent, Walt Gamble; vice Fred Burgess, chairman, president, Arnie Anderson; Department of Civil secretary, Joe Chapin; and eering: Hal Pritchard, treasurer, Bill Pike.



ASSOCIATED GENERAL CONTRACTORS



1970 The Beaver



1985 The Beaver

"The AGC Student Chapter's primary purpose is to provide services to students majoring in Construction Engineering Management. The chapter is proud to be one of the most active clubs on campus. The chapter provides academic services, social functions and above all else, helps bring the construction industry and CEM students closer together.

There were many memorable experences for AGC members this year. Highights of the year included: attendance of 38 student chapter members at the AGC National Convention held in San Francisco: building the fastest and best engineered recycled racer for Espree day and hosting our Annual "Contractor Night" where George Labuan, a retiring CEM professor. was honored for his many contributions to the OSU construction program." - Craig Smelter, president





Oregon State University College of Engineering



1974 Third Annual Contractors Night





Harold D. "Hal" Pritchett, Robert E. "Bob" Phelps, and George B. LaBaun circa 1974









Oregon State University College of Engineering









Civil Engineering 1909

CLASS OF 1969 STU CAMERON ARNIE ANDERSON DALE ANDERSON JOE CHAPIN

CIVIL ENGINEERING TECHNOLOGY







WALT GAMBLE

GIBB HULTGREN

JERRY MARKS TOM MOSSMAN















COLLEGE OF ENGINEERING School of Civil and Construction Engineering

ARCHITECTURAL ENGINEERING **CLASS OF 2021**









Architectural Engineering 2021







Now....Congrats Class of 2022!





Civil / Construction / Architectural Graduates June 2021



155	119
Students graduated spring 2021	SURVEY RESPONSES (77%)
>85% STUDENTS PLACED	61% CE/CEM/ARE EMPLOYED IN CONSTRUCTION INDUSTRY
77%	59%
ONE OR MORE INTERNSHIPS (47% ≥ 2)	One or more student club

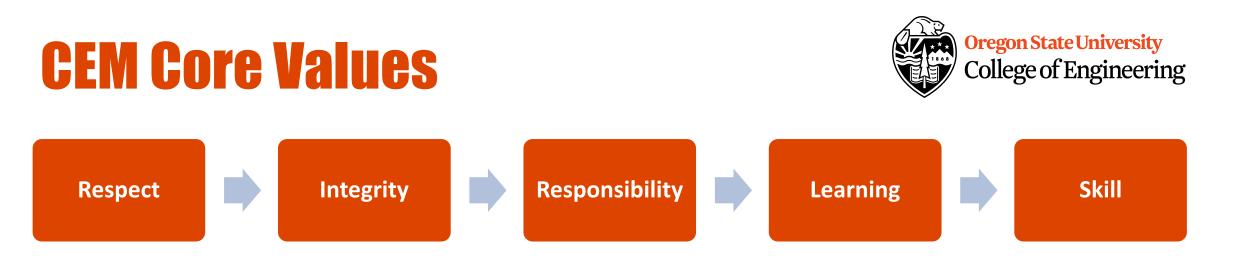


Construction Engineering Management Graduates June 2021



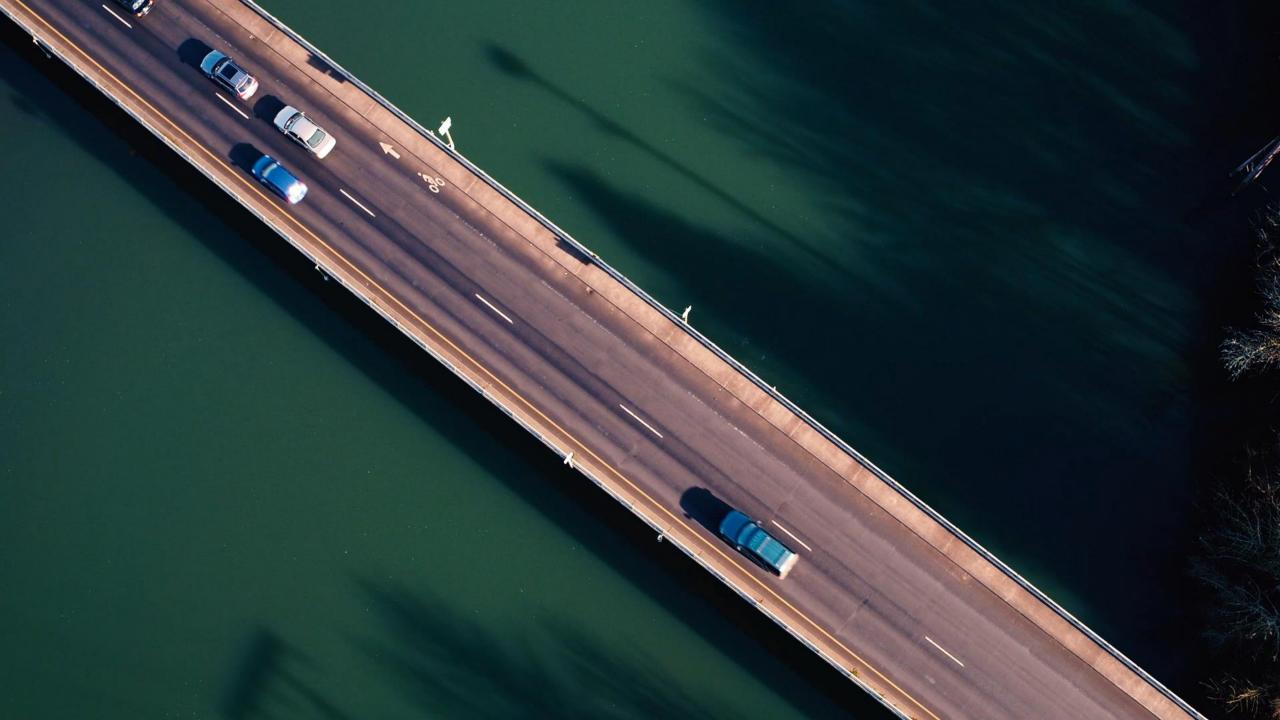
66 STUDENTS GRADUATED SPRING 2021	51
STUDENTS GRADUATED SPRING 2021	SURVEY RESPONSES (77%)
>86%	\$65,000
STUDENTS PLACED	MEDIAN BASE SALARY
\$55 <i>,</i> 000	\$88,000
MEAN BASE SALARY	MAXIMUM BASE SALARY
88%	89%
COMMERCIAL CONTRACTOR EMPLOYER TYPE	ONE OR MORE INTERNSHIPS (70% ≥ 2)
58%	

ONE OR MORE STUDENT CLUB



- Respect: Value cultural, intellectual, personality and circumstantial differences. Demonstrate respect and be inclusive of others. Freely and willingly collaborate to better understand and learn from alternative views and beliefs. Allow others safety and freedom to pursue their individual goals without interference, disruption or distraction.
- Integrity: Establish integrity as a way of life. Adhere to strong ethical behavior. Utilize fairness as standard for creating relationships. Be honest in your commitments. Comply with the spirit and letter of agreements and contracts.
- Responsibility: Demonstrate personal responsibility in agreements, duties, and relationships. Assure safe and inspiring
 place of study/work for all. Exhibit fiscal responsibility. Be accountable for your learning and actions toward others.
- Learning: Actively acquire knowledge through academic programs and in practice. Strive for balance of knowledge in all fields. Expand knowledge through research and dissemination. Recognize importance of lifelong learning.
- Skill: Utilize the best skill level for providing solutions and services. Strive to improve your skills through learning and application to industry. Share your acquired skills freely with others. Display professionalism in everything you produce.

Inspiring Construction Faculty and Staff Oregon State University



Faculty Recognition

ENR 2022 TOP YOUNG PROFESSIONALS



Joseph Louis

35, Assistant Professor and RC Wilson Faculty Scholar **Teacher furthers innovations Oregon State University** Corvallis, Ore.

Louis is an assistant professor of construction engineering in the School of Civil and Construction Engineering at Oregon State University, where he leads the simulation, automation and monitoring of construction operations lab that focuses on transforming the construction industry through technological innovations.

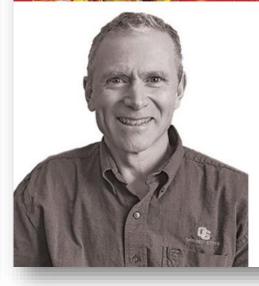
His industry experience includes working as a project engineer and software developer. At Oregon State, he teaches heavy civil construction management, construction estimating, project risk management and simulation and visualization of construction operations.

Louis also helps curious high school students enter the construction industry through educational and training initiatives. Louis also conducts workshops using an augmented reality sandbox he built to engage high school students in problems relating to building and maintaining infrastructure.



Engineering News-Record





John A. Gambatese

Engineering Professor Asking Why Known Jobsite Hazards Can't Be Removed

Click here to read more about John A. Gambatese

Faculty Recognition

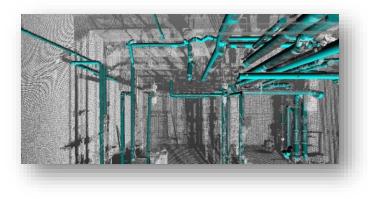




Catarina Pestana

- Dennis Marker Teacher of the Year
- Pursuing AGC/OSU/CCE Industry residence initiative @Reser Stadium for Summer 2022
- Developing new ECampus course

Yelda Turkan



- Promoted to associate professor with tenure
- NSF Convergence Accelerator: Rapid Development of Intelligent, Built Environment Geo-Databases Using AI and Data-Driven Models



Parichehr

Salimifard

Assistant Professor Architectural Engineering



Clotilde

Pierson

Assistant Professor Architectural Engineering

CCE New Faculty 2021-22



Samuel Rivera

Assistant Professor Clean Water Infrastructure



Pavan Akula

Assistant Professor Infrastructure Materials/ Geotechnical

 Attract - Recruit - Diverse - Support - Retain - Completion - Engage - **Experiential** - Hands On - **Empower** - Leadership Communication

Next Generation of Construction Professionals

Scholarships 2021-22



- Scholarships for recruiting, retention, completion, emergency
- Awarded 25 emergency scholarships winter 2022
- Scholarships based on need, merit, first-generation students, activities
- Total scholarship funds awarded to CCE students: \$1.23 M
- CCE scholarship funds awarded: \$430,531 [+60% since 2018]
- CCE scholarships awarded: 174 [+61% since 2018]
- CCE students receiving scholarships: 213 [includes renewed college awards]
- CCE Students Applying for Scholarships: 186 [24%]
- Percent of applicants awarded: 94%

CCE First Year Cohorts





Oregon State University College of Engineering

- 18 cohorts / 15 faculty / 20 peers / 76 first year students
- Range of valuable activities and interactions
- Prizes and awards
- Engagement / retention / orientation

Engineering +

- Three course sequence across engineering majors
- Interdisciplinary / collaborative / inclusive / team / hands-on
- Global development challenges, access to power and energy infrastructure, diversity and inclusivity in the engineering workforce, and environmental justice

Capstone Design

- 116 students / 25 teams / 4 projects / 2 faculty / 3 GTAs
- 15 Capstone Advisory Panel members / 12 guest lecturers
- 2 quarters/20 weeks





Construction Industry Partner Program





Emphasis on Communications

- Oregon State University College of Engineering
- Hired Technical Writing Evaluator to support writing intensive courses (WIC)
- Capstone design courses
- CE 418 Structural Theory I and CEM 443 Project Management for Construction

Safety Culture

- New safety pledge, emphasis on lab safety/training and Honor Code
- New safety vests and hats courtesy of Coral Sales
- Hardhat replacement plans
- Bike light partnership with OSU PD and transportation



SAFETY PLEDGE





Oregon State University

I commit myself to placing the safety and health of my coworkers, classmates, and myself paramount in all that I do and in all of my decisions.

promise to learn about and work towards protecting the health and safety of the public b llowing all safety instructions or training provided by Oregon State University.

promise that I will never compromise whe safety of my co-workers, classmates, and myself to eet other priorities such as getting the work completed, saving time, or minimizing cost.

5 a student of the school of CIVII and Construction Engineering, I, both ronally and on behalf of our school and the university, pledge to uphold the values, beliefs, d commitments described herein in the course of my work and the work that we do in our nool and the university.



Experiential Learning

Student Clubs

- 20+ Student Organizations
- Competitions (Steel Bridge / Concrete Canoe)

Speaker Meetings

- About 60 per year
- Free dinner
- Interact with industry leaders

Research Experiences

- Work with faculty and graduate students
- Learn about graduate school opportunitie
- Honors College thesis possibilities
- Career Fairs Fall/Wint
 - CCE-specific

Handshake

- 50-100 employers
- Handshake
- Internships
- Field Trips
- Study Abroad
- Golf Tournaments (CEF + AGC)
- Contractors Night



-EADERSHII

COLLABORATIO

COMMUNICATION

ETHICAL JUDGEMEN

.TURAL ACUME

NTERCU

NTERPI



PUBLIC SPEAKING

OBI

OWNERSHIP



ASC COMPETITION



What is it?

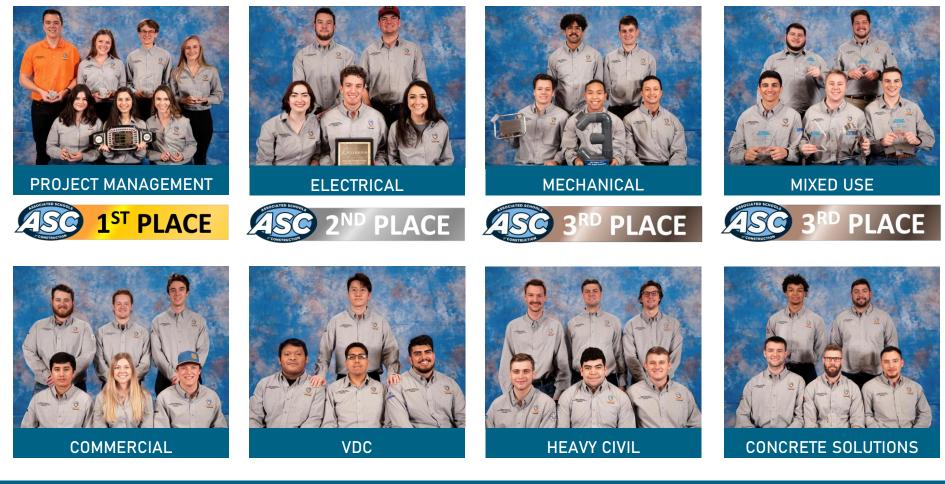


 35^{TH} ANNUAL ASSOCIATED SCHOOLS OF CONSTRUCTION (ASC) STUDENT COMPETITION





2021-2022 COMPETING TEAMS



 35^{TH} ANNUAL ASSOCIATED SCHOOLS OF CONSTRUCTION (ASC) STUDENT COMPETITION



TEAM SPONSORS



 35^{TH} ANNUAL ASSOCIATED SCHOOLS OF CONSTRUCTION (ASC) STUDENT COMPETITION



Construction Industry Empowerment (CIE) Fellows

- New scholarship program with the goal of reducing financial barriers for first-generation, high financial need students with a declared interest in the construction industry.
- About 30% of our student population, 80% of whom are underrepresented
- Program awards \$10,000/year for 3 years (\$8k for tuition and \$2k for experiential learning)
- Support student path to graduation/retention/completion
- Periodic programming such as speakers, field trips, job shadowing and interactions with alumni/professionals
- College of Engineering and OSU Foundation seeking construction industry support to develop next generation of construction industry leaders.

COLLEGE OF ENGINEERING

School of Civil and Construction Engineering

SECURING THE FUTURE OF THE CONSTRUCTION INDUSTRY



Construction Industry Empowerment (CIE) Scholarship Program

Reducing financial barriers for first-generation, high financial need students with a declared interest in the construction industry.



Construction Industry Partner Program

One Stop Shop

Support recruitment events, scholarships, student learning experiences, travel, innovative curriculum development, research start-ups, lab enhancements, etc.

Portal Options

- ASC Student Competition
- Contractors Night tables
- AGC Student Chapter Speaker Meetings
- AGC Student Chapter Golf Tournament
- CEF Golf Tournament
- Distinguished Lecture Series
- CCE Excellence Fund
- Annual Dues
- Beaver Believers >\$25k | Beaver Ambassadors >\$12k | Beaver Supporters
 \$6k
- Incentives
 - Preferred speaker meeting dates
 - Logo recognition
- Thank you for your support!



BEAVER BELIEVERS









Power On



BEAVER AMBASSADORS



BEAVER SUPPORTERS

- Advanced American Construction, Inc.
- AWCC Oregon & SW Washington
- **BMWC** Constructors
- **Bremik Construction**
- **Charter Mechanical**
- **Emerick Construction**
- Garney Construction

- Hoffman Construction
- Kerr Contractors

GROUP. INC.

- NECA Oregon-Columbia Chapter
- **Olsson Electric**
- PCI: Performance Contracting, Inc.
- Pence Construction
- Perlo Construction

https://beav.es/3E4

- **Q&D** Construction
- **R&H** Construction
- Traylor Bros., Inc.
- W.R. Gamble Engineering
- Walsh Construction
- Whiting-Turner

About Ecampus





- Oregon State University College of Engineering
- History of distance learning [Farms | trains | radio | TV | VHS | Online]
- Modes: Online, Hybrid (online + in person), Hybrid (remote + online)
- Access for underrepresented minority, rural, non-traditional, full-time employed, place/time bound and have family obligations
- Attract national / international / military / veteran audience
- Average student is 30 years old, transfer and returning students
- OSU access and equity commitments/traditions
- Employer retention / career development / "upskilling" / lifelong learning
- Can complete degrees while working full time / anywhere
- Workforce needs: retirements, diversity, job openings
- Assist with flexibility, completion, degree progress for in person students
- ecampus.oregonstate.edu/course-demo/













#5 in the nation



91 Undergraduate/graduate programs/certificates









https://beav.es/Ufb Currently 476 members....



Upcoming Events



Contractors Night Thursday April 7, 2022

Grow To Pro Saturday April 23, 2022

> Dam Proud Day April 27, 2022

AGC Student Chapter Golf Tournament Friday May 6, 2022

CEF Golf Tournament

September 2022

WE WANT YOU TO JOINUS!

Thank You! Go Beavs!

and a state of the

