Senior Class of 2021

Graduation Awards
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STUDENT AWARDS
The Oblad Medal of Excellence and the accompanying cash award are offered to senior students whose scholastic performance exceeds that of their peers in the disciplines of Mining, Metallurgical, and Chemical Engineering. The medal carries the name and likeness of Dr. Alex Golden Oblad who was the initial grantor in 1977. Dr. Oblad was a Distinguished Professor of Metallurgical and Fuels Engineering from 1969 until 1995.

Alex Oblad received bachelor's and master's degrees in chemistry from the University of Utah, then went to Purdue University where he earned his Ph.D in chemistry in 1937. Prior to joining the faculty at Utah, Oblad worked as a research chemist for several oil and chemical companies. Dr. Oblad received several honors including the Chemical Pioneer Award from the American Chemical Society, honorary doctorate degrees from the University of Utah and from Purdue University, and the E. V. Murphree Medal of Excellence in Industrial Chemistry.

He was co-author and author of dozens of technical papers on the chemistry of homogeneous catalysis and on the recovery and upgrading of petroleum from the oil sands of Utah. His name appears on some 45 U. S. Patents. Dr. Oblad died in Salt Lake City in the year 2000.

Recipient: Tyler Bodily

“I plan on attending graduate school at UCSD to pursue a PhD in bioengineering. I plan to research various nanodelivery and drug delivery methods. I am grateful for the hard work faculty put in to help students succeed at, not only obtaining internships but throughout my career development process. I have also enjoyed some of the freedom offered during our class and especially senior projects. I think that has helped gain leadership skills and learn to be self-sufficient in my own academic learning. And has helped to spark my curiosity for academic research.”
Outstanding Senior

The outstanding senior award is determined by the graduating class each year to recognize one of their peers.

Alex Christensen

Alex will be joining the PhD program here at the U in ChemE this fall.

Undergraduate Researcher Award

The undergraduate researcher award is chosen by the faculty for students who excelled in research.

Titus Quah

“The work that Titus is currently doing is in a very important field of machine learning, data analytics, and artificial intelligence. The types of algorithms he is developing can be used to improve the performance (environmental, safety, economic, etc.) of complex chemical and energy systems. This work will have broad applicability to a wide variety of systems including transportation, supply chain management, manufacturing, etc. Given the impact that I have observed with Titus as an undergraduate, I have no doubt that his graduate work will be excellent, highly-cited, and useful to society.” -Dr. Kody Powell

After graduation Titus plans to pursue a PhD at UC Santa Barbara.

“Thank you to all the professors for their teachings, guidance, and support. Thank you to my fellow students who motivated me by collaborating and working hard. Lastly, thank you to my family for the support they provided me.”
Achievement Award

The achievement award is chosen by the faculty for students who overcame challenges and despite them excelled.

Emily Schofield

“I ultimately would like to run my own business where we solve problems in the energy sector with alternative and sustainable energy sources and you know, one day, save the world! :) That's why I've been committed to come back and finish my degree no matter how long it took. I'm passionate about the world.

I have loved my time as a chemical engineering student here at the U. I've met so many great professors who really supported me in times of personal struggles. I really do feel like the professors care and want to help wherever they can. Whether it was through advice, extra office hours, or an assignment makeup or two, they have really worked with me. I have learned so much, but the biggest thing I feel like I've gained is the confidence to learn hard things and solve difficult problems. I also feel like I've learned patience and time management when it comes to problem-solving. I know there is a lot more to learn and grow, but I'm excited to do it and I see my dreams coming closer and closer! I thank the faculty for their hard work in the classroom and support of me, and all of the students, as I've gone through this program. Because of them I can say "I did it!" Thank you!!”

Caleb Fullmer

“My experience at the University of Utah has not been a traditional one. While in school I have been raising a family, working, and overcoming educational, emotional, and medical challenges. During junior year I had a daughter born with a genetic disorder, and in what was supposed to be my last semester of my junior year, my son was diagnosed with cancer. The support I received was amazing, and it was evident that the professors and department cared about me and my success as a student. I have grown and learned so much in my time at the University of Utah”
Leadership Award

The leadership award is chosen by the faculty for students who demonstrated outstanding leadership in the college and department

Ari Yue

“I encountered several outstanding professors, inspirational mentors, and lifelong friends here at the University of Utah Chemical Engineering program. I never imagined I’d be graduating with a degree in engineering and have the chance to participate in internships and undergraduate research. This, I believe, is by far my most significant achievement!”

Marcus D’Ambrosio

“I had dreams of attending Stanford when I was nearing the end of my high school career, and I was quite disappointed to receive a denial letter from them. Initially, I mistakenly viewed my attendance at the U as a symbol of my failure to get into my dream school; I quickly learned that this twisted perspective could not be farther from reality. During my time at the U I have met a plethora of intelligent, motivated, and fascinating individuals, whether they be students, staff, or faculty. I was fortunate to experience rich and meaningful coursework that prepared me for real-world experiences. I had access to top-tier facilities that allowed the implementation of my newfound chemical engineering knowledge as early as my second semester here at the U. I felt that the chemical engineering program here engulfs its students in job opportunities, whether it be research or internships. Most importantly, I felt ceaseless support from my fellow students and professors. There has always been a beautiful sense of community that turned even the most brutal assignments, projects, and exams into a bearable shared experience. Overall, I’ve been pleasantly surprised with the quality of the chemical engineering program. I am proud to say that I will be graduating with a degree in chemical engineering from the University of Utah. After graduation I will be continuing my entrepreneurial endeavors, especially in the AgTech industry, to do my part in sustaining the essential-to-life bee population and ensuring that US cropland flourishes.”
The outstanding TA award is determined by the faculty awarded to a student who was a TA that exceeded expectations

Tyler Bodily

“Tyler was my teaching assistant for CH EN 2800 in the Spring semester of 2020 and my teaching assistant for CH EN 3853 in the fall semester of 2020. Tyler held weekly office hours and graded homework. He was always on top of his work. In addition, he periodically provided feedback to me on how students are doing in class from his interactions with students. He genuinely cared about the success of students. In March of 2020, all courses at the University of Utah have been moved online due to COVID-19 pandemic. It was a challenging time for the instructor and the students. He volunteered to hold office hour online and frequently set up impromptu office hours to help students with homework problems. From the course evaluation, many students commented that Tyler was really helpful, and he was always prepared and enthusiastic when he interacted with students. Tyler even helped a few students prepare for their internship interviews.” -Dr. Yunshan Wang
Outstanding Capstone Project

The Outstanding Capstone Project award goes to capstone projects chosen by the faculty as exceptional

Juan Rodriguez Munoz, Jason Meister
Jack Mitchell, Ari Yue

Low-Cost Air Quality Indicator

Filter for Economical Air Pollution Device for Arapaho Nation
Juan Rodriguez, University of Utah – U1109841@utah.edu

Summary:
- Find the effects of humidity and temperature using an air pollution measuring device
- Develop a filter to eliminate humidity and temperature effects

Impact:
- Provide Arapaho Nation residents a device to monitor air quality
- Improve behavioral tendencies to reduce poor air quality

Targets:
- Develop a suitable filter for an air quality monitoring device
- Maintain measurement accuracy of ±15%

Experiment:
- Collect information about temperature and humidity effects on air pollutants
- Filter trials for air quality device optimization on temperature and humidity rejection
- Calibration and testing of air quality device with filter implementation
- Compare against gold standards air pollutant devices

Primary EHS Concerns:
- Burn hazards with electrical heater
- Tripping hazards with cords and water spillage

Estimated Cost: $196.10
Freshman: 2
Outstanding Capstone Project

The Outstanding Capstone Project award goes to capstone projects chosen by the faculty as exceptional

Adriann Liceralde, Patrick Robinson, Unsiat Zahra

3D Printed Distillation Column

Developing a 3D-Printed Modular Distillation Column to Observe the Effects of Various Designs

Summary
- Create a printable column that can be assembled into various configurations
- Different column designs will yield unique results
- Expand lab projects on Distillation

Impact:
- Give students opportunity to experiment with different column designs
- Improve visual learning of distillation
- Expand potential for 3D-printed process vessels

Target:
- Modular column with numerous possible configurations
- Results of an ethanol-water mixture with an accuracy of 90% to Aspen simulations

Costs: $90
2 Freshmen
Adriann Liceralde
ailceralde@egi.utah.edu

More Experimentation for Distillation!
The Outstanding Capstone Project award goes to capstone projects chosen by the faculty as exceptional.

Joseph Larson, Mackenzie Morrison, Rachel Sunada

Ultrasonic Battery Enhancement

**Ultrasonic Battery Enhancement**

**Project Summary:**
- Conduct research on improving battery mass transfer
- Test effects of Ultrasound on Li-ion coin batteries
- Perform and confirm previous Research with new variables

**Project Impact:**
- Further research eventually leading to economical and environmental impacts.
- Create a safe way of charging batteries faster without the dangers of high voltage and current.
- Students gain life skill and assist professors with current research

**Proposed Targets:**

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<thead>
<tr>
<th>Metric</th>
<th>Current level</th>
<th>Proposed Technology</th>
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</thead>
<tbody>
<tr>
<td>Measurable Battery</td>
<td>Current</td>
<td>Battery tester or Arduino</td>
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<tr>
<td></td>
<td>Voltage</td>
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<td>Battery charge speed</td>
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<tr>
<td>Ultrasound level</td>
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</table>

*Improve Charging, Further Research, & increase Battery safety*

*Funds $457.94*

*Freshmen: 2*

Joseph Larson
jolarson71@gmail.com
Outstanding Capstone Project

The Outstanding Capstone Project award goes to capstone projects chosen by the faculty as exceptional

Marcus D'Ambrosio, James Otto, Jay Medina

Beehive IR Imaging

IR Imaging for Non-Invasive Analysis of Beehive Strength

**Summary**

**Goal**
Develop a non-invasive beehive inspection method using IR imaging analyzed with machine learning, statistics, and heat transfer concepts

**Impact**
Reduce hive disruption, save time, and improve accuracy relative to traditional inspection methods

**Deliverables**
Highly functional software that allows us to determine the strength of a beehive accurately and consistently based on IR images

**Targets**

<table>
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<th>Metric</th>
<th>Current</th>
<th>Proposed Technology</th>
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<tr>
<td>Invasiveness</td>
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<td>Inspection Time</td>
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<td>&lt;10 seconds</td>
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<tr>
<td>Model Accuracy</td>
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<td>&gt;95%</td>
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</tbody>
</table>

Reducing invasiveness, saving time, and improving accuracy in Beehive Inspection

Collect infrared images of beehives with known strength for analysis

Develop methods to predict bee population based on temperature, humidity, etc.

Offer alternative for invasive inspection methods while also providing value
Academic Achievement Awards

The academic achievement awards are given to students who have demonstrated outstanding academic achievement.

Christopher Hillam

“I really appreciate the camaraderie that the chemical engineering major created, I really couldn’t have been successful or maybe even graduated without the support of all the students around me. After graduation I’m going to be working for Westinghouse electric company up in Ogden full time as a chemical engineer. “

Zachary Dubois

“ChemE has been a long and difficult road but I am proud and excited for everyone that is graduating this spring. The faculty has also been extremely supportive, and I would like to thank them for their time and effort. After graduation I will be working for Micron at their Boise site.”
Academic Achievement Awards (continued)

Justin Thomas

“I have loved being a student in this department, the faculty and students provided a welcome environment that facilitated both personal and professional growth. All of the sleepless nights have been worth it, and many of the connections that I have made while here will last a lifetime.”

Bradon Hawkins

“After graduation I will be working at Thatcher company as an EHS engineer. I thoroughly enjoyed this major and am excited to move on to my career!”
Kevin Ngo

“I am going to work for a couple years and then apply for grad school. My experience in the program has been amazing through which I have met many new people! I also wanted to thank everyone for helping me through all this!”

Breanna Barilec

“I am grateful for all of the professors and friends who helped me out and supported me through the last four years. It has been very challenging and I couldn’t have done it alone. I’m so glad that I was able to make connections in person and have those carry over through online classes and I’m excited to see everyone succeed after graduation! After graduation I will be working as a Production Engineer for Brewers Supply Group as they open a new facility in Salt Lake City.”
Academic Achievement Awards (continued)

Matthew R. T. Williams

“Because of my family, friends, classmates, and professors, I was able to accomplish everything I set out to do at the U. Thank you to everyone, and I'm excited about the successes that my classmates and I will have as a result of our education.”

Joseph Nelson

“Post graduation I will be working as a Project Manager at WesTech Engineering as part of their flotation group. At some point in the future, I think that I would like to go back to school and pursue an MBA. To all of my classmates, thanks for all the good times! Looking forward to keeping in touch, seeing where everyone ends up, and doing some good in the world with our Chem E knowledge!”
Daniela Sturzenegger

“My post graduation plans are to find full-time employment and work in industry. I'm also looking forward to becoming a dad in October. I've loved my time at the University of Utah. It has been a great experience. The faculty have been amazing. I truly feel like they care about our success as students. They have gone above and beyond to support us and have helped us navigate a lot of unfamiliar territory. I have gotten to know so many smart, talented and kind people in the Chemical Engineering program who have become my friends. I'm grateful for the opportunity to get to know them and to learn from them. Through my journey here at the U, I have learned so much and met so many wonderful people and I've become a better person as a result. Congratulations class of 2021!”

Kevin Whitehead

“Chemical Engineering at the U is definitely a challenging degree, but extremely rewarding. It not only prepares you for a career but also conditions you into a versatile and intuitive individual. I’ve learned a lot about myself and what I am capable of.”
Academic Achievement Awards (continued)

Diana Turcios

“"I want to say thank you to my classmates and the professors for being a constant help and support. I want to thank my family especially for continuing to encourage and push me."
Juan Rodriguez

“After graduation I hope to work in industry for a while before buying a farm and living a minimalist lifestyle. I would like to harvest mangoes, strawberries, blueberries, black raspberries, red raspberries, and potatoes on said farm. My experience at the University: was an interesting time. While it was challenging and I lost a lot of sleep and hair, I would do it again. The main reason for doing so, is because of all the amazing people I met and spent countless hours doing homework with and getting to know (also the seats in the classrooms were surprisingly comfortable to sleep in). I have looked forward to graduating for quite some time now, especially since junior year. Although, looking back I can truthfully say that I enjoyed my experience here and graduating is extremely bittersweet.”

Joseph Larson

“After graduation I plan on working in Washington state with Puget sound naval shipyard as a nuclear engineer. After about 2-4 years I want to move to Idaho and work at Idaho national labs. I really enjoyed the overall experience as well as the relationships I have made. I also found it very important to make sure you don't get burned out by taking some self-time occasionally and not procrastinating.”
Academic Achievement Awards (continued)

Jason Meister

“Congratulations to the Class of 2021, you guys are a bunch of smarty-pants! It was a great honor going through the chemical engineering program here at the U and making some lifelong friends at the same time. Shoutout to Ari, Anna, Fiona, Jack, James, Juan, and Patrick for being my day one’s and always dealing with my sass. Also, thank you Dr. Butterfield for making everyone feel like family here in the program. One of my favorite memories through the years was getting extremely sick each time finals rolled around, it came to be known as the “stress flu”. Y’all have made an impact on my life, whether that being big or small. Make sure to always stay in touch. I will be moving to California in June to begin working at Northrop Grumman as a Materials and Process Engineer. I will also be pursuing my master’s degree in Materials Engineering through Cal Poly Pomona.”

Patrick Robinson

“The chemical engineering department is great. All of the professors were great, and for the ones that have a reputation of being too difficult, (Dr. Zangle, Dr. Sutherland) I honestly think they are a necessary amount of difficulty that us students need to succeed, and I commend them for that. There were some stressful times, but the professors always provided a way to get through it.

I am currently working as a lab technician at USMagnesium. I am still applying for engineering jobs, but I intend to work at USMagnesium learning as much as I can until I get an engineering position.”
“Post-graduation I will be starting a role as a Process Engineer at Procter & Gamble's Box Elder Site, so I won't be going too far from here. I would like to thank some of the very special professors here at the U whom I had the privilege to learn from such as Tony Butterfield and Kody Powell, as they did their best to make the classes they taught engaging and useful in future roles which I and my fellow students will fill, while also providing ample help and support to students who needed it. Of course, no college experience would be complete without experiencing the ups and downs of obtaining a degree while surrounded by friends. Nearly every experience I had working with my fellow classmates through this degree was positive, and for that, I am extremely thankful.

Ever since enrolling at the U, I always knew that eventually my time here would be completed, and I would move on with the rest of my life. However, what I didn't expect was how quickly that time would pass. Of course, when one is staying up until the wee hours of the morning to catch up on an assignment that had been procrastinated or is spending many hours trying to learn how to code in Python from scratch, the passage of time doesn't feel fast. Looking back now though, it almost feels like it's over too soon. I believe I will miss the time that I spent studying here, and I am very thankful for the opportunity I had to do so.”
Academic Achievement Awards (continued)

James Otto
Fundamentals of Engineering Exam

This is to recognize students who took the FE Exam even though it is no longer required for graduation

Branden Fullmer

“Post-graduation I'll be working full time as a process engineer for Thatcher Company here in Salt Lake City. I really liked the students I got to know along the way and hope for the best for everyone.”

Benjamin Arce

“After graduation I am continuing work as a lab manager for a compressed gas company here in Texas. I am very thankful for being a part of a great program with helpful professors, staff, and student group. Go Utes!”
Breanna Barilec

“Thank you to all the friends, family, and professors who helped me these past four years. Thank you also to SWE for all the opportunities and support as a female in engineering. The study sessions and stress were worth it, I’m excited to see what the future holds for us all!”

Shane Healy

“I really enjoyed my time at the U. I found the curriculum very challenging and it’s made me into a better problem solver for my future.”
“Very few experiences have been as positive as my engagement with the Chemical Engineering Department. I had come to the university being far removed from any sense of engineering knowledge; a casual conversation with my dad about career paths inspired me to take a leap of faith and enroll in the program after I decided not to pursue pharmacy. My first two years here, I was somewhat distant from the department and other students and gave priority to other elements of my life that have been vital to shaping who I am today. Unfortunately that lifestyle was highly discordant with a 19 credit hour workload, and my academic performance suffered from this. After some reflection, I decided I needed to branch out and engage more with the faculty and students. I had hoped to find some lifelong friends within the student body and mentorship within the faculty, and I'm grateful that I found exactly those things.

After about 4 years at the University I had built a family of friends within my original cohort, and because of my decision to extend my degree timeline, I got to do it all over again with the Class of 2021. I was also able to connect with the wonderful faculty we have and learn from their wisdom and expertise. Somewhere along the way I even met the love of my life. And last, but not least, I was able to pick up the pieces of my academic career. I've had a truly amazing experience here at the University of Utah thanks to all of you great people!

Thank you to my family, friends, and all the people I've met along the way! CHEERS EVERYONE!!!”