Thursday April 15th, 2021

Dear ESS majors and minors,

As the semester winds to a close, we wanted to send our best wishes and blessings to you. We have been particularly aware of your efforts this past year. You have not only continued your studies; you have cared for one another and helped our campus community face the pandemic. We know that this last year was not what anyone planned, but we admire how you rose to the challenge with charity and bravery. Thank you for your examples. Thank you for all the thoughts, prayers, and service you engaged in during this crisis.

Because it has been harder to connect this last year, we wanted to share a brief report on what is going on in our program. There are graduations, research milestones, and updates about our program on and off campus. We know that no report can capture the highs and lows of this last year. However, we wanted to share a moment together (at least virtually) to reflect on the many blessings God has given us.

With love and gratitude,

Ben Abbott, Neil Hansen, Sam St. Clair, Zach Aanderud, and Rachel Buck

Artwork in this year's report created by Royden Card

State of the Program

This year has seen unprecedented growth and change in our program.

Enrollment and engagement: Thanks to your outreach, the number of enrolled students in our major and minor has surged! We have grown from fewer than 70 majors to nearly 100 in just the last year. Let us know if you have ideas about recruiting and please keep inviting your friends and others to learn and join.

- Majors: 96
- Minors: 48
- Graduate students: 19

Program name change: The name of our program has been officially changed to *Environmental Science & Sustainability* (ESS). This change was made for several reasons. **First**, the new name better reflects what we have long been focused on: discovering and implementing breakthroughs regarding the environment, including ecology and society. **Second**, as we discussed the purpose of our program, we felt impressed to emphasize sustainability. The Earth is facing multiple environmental crises, and the wellbeing of ecosystems and the entire human family depends on the choices we make in the coming years. Helping the BYU community understand and implement environmental sustainability is one of our most urgent responsibilities. **Third**, based on input from students and employers, the inclusion of "sustainability" in the title of the program makes it clearer what we are learning and trying to accomplish. Our goals include fundamental research, implementation of local to global solutions, and cultivating environmental stewardship in the light of the Restored Gospel.

Curriculum: In concert with the name change, we have overhauled the ESS curriculum. For details, consult the program website, but here is a brief overview. We consolidated the emphases (tracks) into 1. Ecosystem ecology, 2. Sustainable development, and 3. Resource conservation and management. We worked to improve cohesiveness of the core classes, and we eliminated some of the chemistry requirements to allow students with diverse goals and paths to customize their study. Don't worry if your plans follow the previous program requirements; changes in curriculum apply to new majors and minors only.

Graduations

As the old saying goes, the only thing more exciting than graduating is graduating during a pandemic. Heartfelt congratulations and hope for the future for this special graduating class! All majors and minors are invited to the Zoom Graduation program to celebrate these students on **April 22nd at 5:30 pm**. Graduates will receive a hand-pyrographed bamboo cutlery set (pic below).

Bachelor of Science

December 2020

Emmalyn Barker
Saida Rubi Vera
Christian Thomas Welling

April 2021

Macey Bell
Kristina Lyn Cass
Savannah Renee Fahning
Cecilia Grace Foster
James Joseph Graff
Kimberly May Hansen
Yang Li
Ethan Adams Lowe
Emma Leah Miller
Emilee Lyn Severe
Samantha Rose Shumate
Samuel Hamilton Stapley
Dion Jordan Tapahe
Carson Don Thompson

June 2021

Chelsea Lizzette Abrahamian Mendez
Christina Marie Grimes
Kameesha Kay Kiefer

Master of Science

Elisa Woolley
Isak Larsen
Austin Hopkins
Gabriella Lawson
Brian Brown

Clubs and campus

Despite the necessary restrictions on physical events, the Environmental Science club and many other groups found ways to socialize and serve together. We want to thank the outgoing leadership and welcome the new!

Outgoing Environmental Science Club presidency and committees

President *Emilee Severe*
Vice President *Sierra Curtis Nichols*
Secretary *Kristina Cass*
Committee members:
Cecilia Foster
Sam Shumate
Mary Proteau
Chelsea Abrahamian
Abigail Banks
Margaret Hancock

New presidency and committees

President *Mary Lewis*
Vice President *Elisabeth Currit*
Secretary *Jacquelyn Land*
Committee members:
Sarah Chan
Margaret Hancock
Sierra Nichols
Kylee Mecate
Nick Newbold

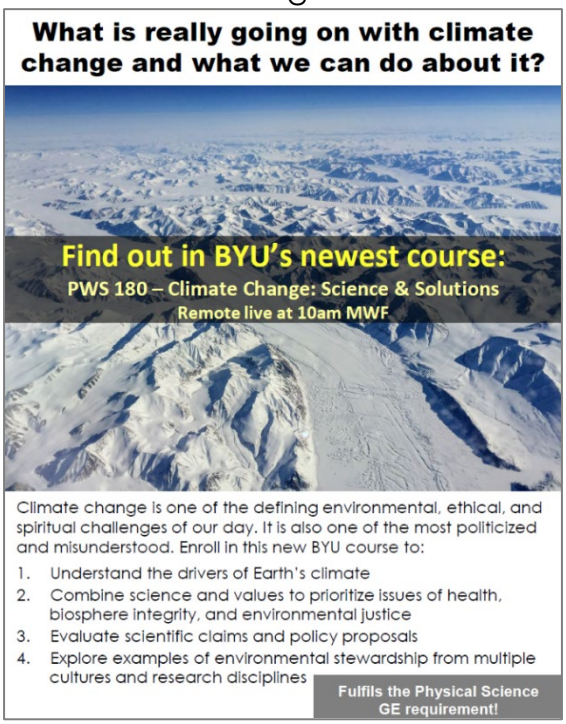
Creation of the BYU Office of Sustainability

BYU has created an office of sustainability and hired a sustainability director (details on the website). These important developments are thanks in part to the dedicated and visionary efforts of BYU students in the Environmental Science Club, Student Sustainability Initiative, and Earth Stewardship Club. The office has convened a sustainability working group, which is now defining the mission and identifying goals and processes to improve sustainability at BYU. Current proposals include rapidly transitioning to zero-pollution energy and transportation, integrating sustainability into campus-wide curriculum, and encouraging scholarship and worship in line with our commitment to replenishing the Earth. Contact Ben Abbott if you have any input.

Highlights from classes

Although we missed the in-person interaction, holding Careers in Environmental Science virtually (PWS155; fall semester) allowed participation from environmental professionals that have not been able to come to Provo in the past. Presentation highlights included Jenna Jorgensen from Jones & DeMille Engineering, Caitlyn Fischetti from Lucid, Ed Corbett from BYU Hazardous Materials, Sandy Wingert from Utah Department of Environmental Quality, Madline Buhman EPA Contractor, and Grace Olscamp from HEAL Utah. After learning that many Environmental Science and Sustainability students chose this major from a motivation to make a difference in the world, all guest presenters were asked to end their presentation by describing what it means to them to make a difference. The guest presenters inspired us with their interesting careers and the positive impact they make.

In the fall of 2021, our program offered BYU's first climate change course PWS 180, which is taught by Dr. Ben Abbott. Because this is such an important topic, we offered the class in an open format, allowing students and community members to participate together. Over 70 participants contributed to the course, which covered topics from paleoclimate to decarbonization. The course fulfills the physical sciences GE and will be offered again this fall semester (course website and materials available here), so please sign up or spread the word.



In winter semester of 2021, we offered another new course: International Agricultural Development (PWS 420), which is team taught by Drs. Neil Hansen and Rick Jellen. This new sustainability course introduces a new topic on Tues of each week (examples include Human Nutrition, Cropping Systems, Irrigation, Pest Management, Crop Breeding, Post-harvest processing), and then students work in groups on Thurs to discuss the topic and apply concepts to a development case study project. The case study projects this semester are based on elevating the rural poor in either Bolivia or Morocco. Students in this class have formed a sense of community, energized by creativity and problem solving. This course is offered every winter semester.

What ESS needs from you

In addition to continuing to be your awesome, faithful, and dynamic selves, here are three things you can do to help the ESS program today:

1. Unbiased hot take: this is the most important and funnest major on campus. We want and need to reach more BYU students. **Would you please invite a friend or share the flyer below on social media today**? If you want physical versions of our stickers or flyers, drop by Ben's office anytime (5113 LSB they are pinned to his name plate).
2. During this time of physical distancing, the ESS website has become more important than ever. To showcase you and get to know each other, we are putting together a student directory of all ESS students. This will help elevate your professional online presence for future employment, and also help attract new students to the program. **Would you take a few minutes to insert a picture and short bio** on this Google Doc?
3. Your perspectives can help us make a program that better serves your needs and really makes a difference in the world. **Would you please share your ideas for how to improve the Environmental Science & Sustainability program anonymously** on this Google Doc?

Research

During the depths of the pandemic, we published a record 33 scientific studies over the last year. More impressive than the quantity is the diversity and importance of the research. Students and faculty are investigating subjects including global climate change, sustainable agriculture, COVID-19, water security, wildfire, microbial ecology, and air pollution. The studies below

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"Counting our blessings is far better than recounting our problems. No matter our situation, showing gratitude for our privileges is a fast-acting and long-lasting spiritual prescription," President Russell M. Nelson