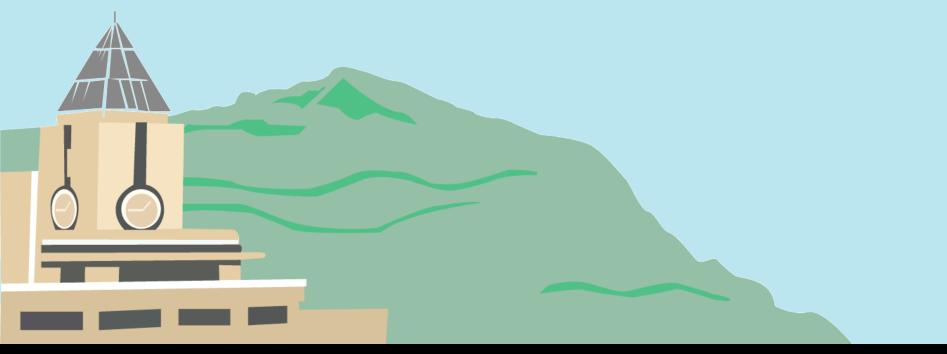
# Moving Forward Together: UCCS 1st Annual Sustainability Summit







## Moving Forward Together: UCCS Ist Annual Sustainability Summit



#### Thursday, November 30th 10:00am-1:00pm UC 303

- 10:10am Welcome + Agenda | Linda Kogan, Sustainability Director
- 10:13am Shooting for the STARS Update on Sustainability Assessment for UCCS | Kimberly Reeves, Sustainability Programs Manager
- 10:20am Compass Curriculum Sustainability-Flagged Courses | Steve Jennings, Associate Professor Geography & Environmental Studies
- 10:27am Continuing the Food Revolution at UCCS: Food Next Door, SWELL, Grain School | Nanna Meyer, Associate
  Professor Health Sciences + SWELL
- 10:37am Remarks | Venkat Reddy, UCCS Chancellor
- 10:48am Student Funded, Student Driven: Green Action Fund Projects | Julie Galusky, Graduate Student + GAF
  Project Coordinator; Alex Greanias, Undergraduate Student + GAF Chair
- 10:58am Roaring Fork is Not a Screaming Utensil Dining and Hospitality Services | Mark Hayes, Executive Director of Auxiliary Services; Rebecca Bogardus, Residential Manager DHS
- 11:05am Improving our LGBTQ Campus Pride Index Score | Jesse Perez, Assistant Director MOSAIC + LGBT Program Director
- 11:12am New Developments for the Sustainable Development Minor | David Havlick, Professor Geography & Environmental Studies
- 11:19am Hop on the Bus, Gus: Transportation Progress at UCCS | *Jim Spice, Executive Director of Parking & Transportation; Vanessa Obetz, Sustainable Transportation Assistant*
- 11:26am Library Team Green Makes a Difference | Martin Garnar, Dean of the Library & Professor
- 11:33am Students for Environmental Awareness and Sustainability, [SEAS] | Lisa Wilkening, Undergraduate Student + SEAS Chair
- 11:40am Energy Conservation Measures Facilities | Jeff Reed, Executive Director Facilities Services
- 11:47am Gallogly Event Center aims for Net Zero Electricity | Gary Reynolds, Associate Vice Chancellor Campus
  Planning & Facilities Management; Jeff Davis, Project Manager Construction
- 11:52am Going for Gold Ent Center for Visual and Performing Arts | Brad Johnson, Project Manager Construction











### **STARS**

# The Sustainability Tracking, Assessment & Rating System (STARS) is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance

GHG **Building design & Diversity & Equity** Electronics Construction coordination **Outdoor air quality** purchasing Rainwater Student life **Immersive** management Community Experience partnerships Sustainability Support for planning Sustainability underrepresented Waste Sustainability coordination minimization & groups literacy biodiversity Diversion Campus fleet Research & assessment Support for Wellness program Scholarship Clean & Renewable sustainable Outreach campaign transportation energy **Moving Forward Together:** Staff professional **UCCS Ist Annual Sustainability Summit** Employee development Affordability & Community service compensation Access





## History of STARS at UCCS

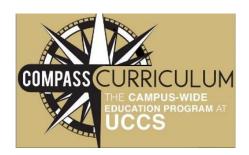
- 2008-09 | UCCS is one of 70 institutions participating in the pilot
- 2011 | UCCS receives Silver rating
- 2015 | UCCS receives Gold rating
- 2018 | UCCS submits in Feb.



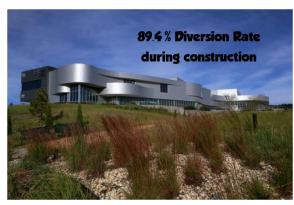


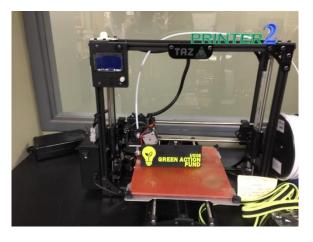
## Highlights of 2018 Submission















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## 2018 Submission Next Steps

- Finish collaborative responses
- Review
- Submit | Stay Tuned!
- How can you engage?
  - stars.aashe.org
  - Use your UCCS email to create a profile
  - Review credits that engage your department and encourage UCCS to continue moving forward Together:
     Moving Forward Together:
     UCCS 1st Annual Sustainability Summit





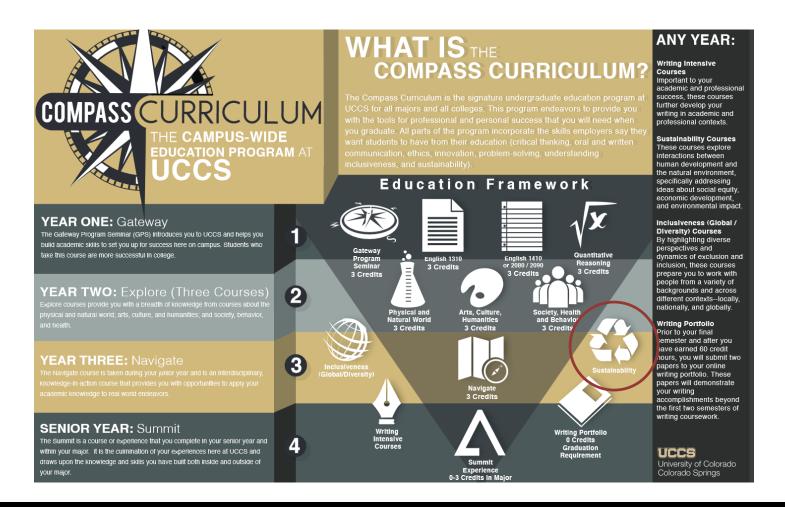








# SUSTAINABILITY IN COMPASS CURRICULUM





# UCCS GENERAL EDUCATION GOALS

### 3) Act and Interact

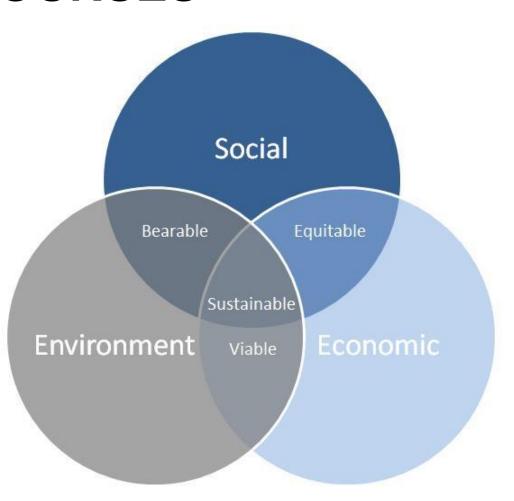
Students will cultivate self-awareness and understanding of their impact—locally, nationally, and globally. Students will be prepared to participate effectively in a society that encompasses diverse experiences, perspectives, and realities. This area includes:

- Responsibility—personal, civic, and social
- Engagement—creative, collaborative, artistic, and innovative
- Inclusiveness—competencies for cultural responsiveness across social differences in contexts ranging from local to global
- Sustainability—understanding the interaction between human development and the natural environment



# UCCS SUSTAINABILITY FLAGGED COURSES

Each Sustainability-flagged course must address at least one of the three pillars of sustainability.







# UCCS SUSTAINABILITY FLAGGED COURSES

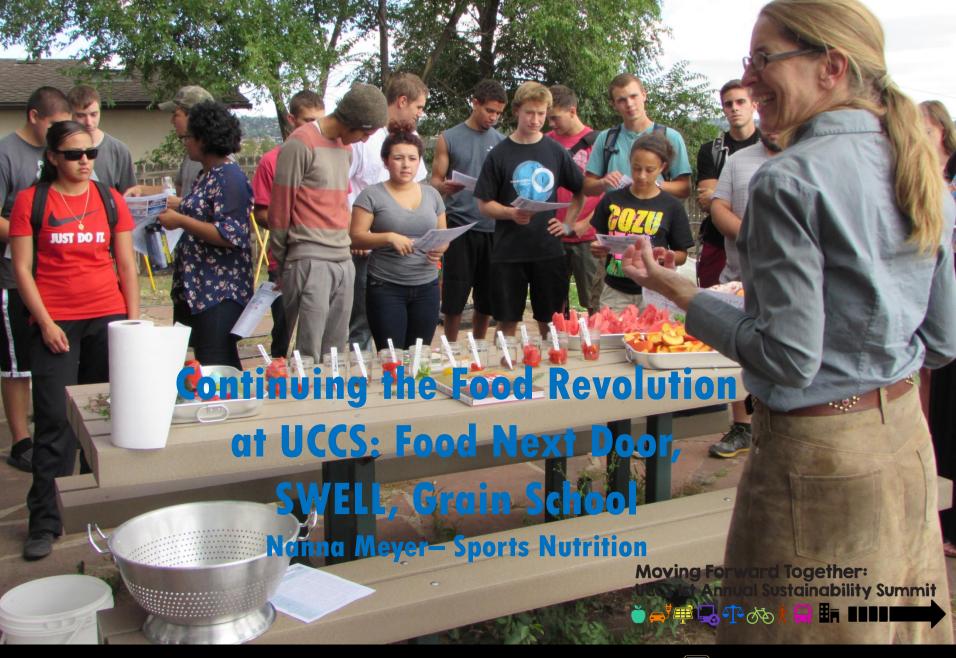
- Beth-El College of Nursing and Health Sciences
  - 3 classes
- BI Program
  - 1 class
- College of Education
  - 1 class
- College of Business
  - 1 class
- College of Engineering
  - 3 classes
- Letters, Arts, and Sciences
  - 12 departments, 75 classes
- School of Public Affairs
  - 3 classes



# UCCS SUSTAINABILITY FLAGGED COURSES

- Beth-El College of Nursing and Health Sciences
  - HSCI 4090 Food, Culture, Community, and Health
- BI Program
  - ENTP 1000 Introduction to Entrepreneurship
- College of Education
  - IELM 2000 Integrated Science for Teachers
- College of Business
  - BUAD 4000 Business, Government, Law, and Society
- College of Engineering
  - MAE 4302 Sustainable Energy Systems
- Letters, Arts, and Sciences
  - WEST 3760 Social Justice and Sustainability
- School of Public Affairs
  - CJ 2050 Introduction to Human Security

















Local
Food
is...
safe
suitabl
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seaso
nal
simple

LICES

















Sustainability Strategic Plan integrated Food in 2012
Greenhouse was built in 2013
UCCS Food Service Transition occurred in 2014
Food Next Door started in 2014 with Healthy Campus Initiative – now SWELL

# Academic Connection, Nutrition, and Local Food

Sustainability, Wellness & Learning (SWELL)



SWELL is a campus food initiative to promote wellness through hands-on learning and skill building in sustainability practices to regenerate human health, cultivate a mindful society, and protect planet Earth.





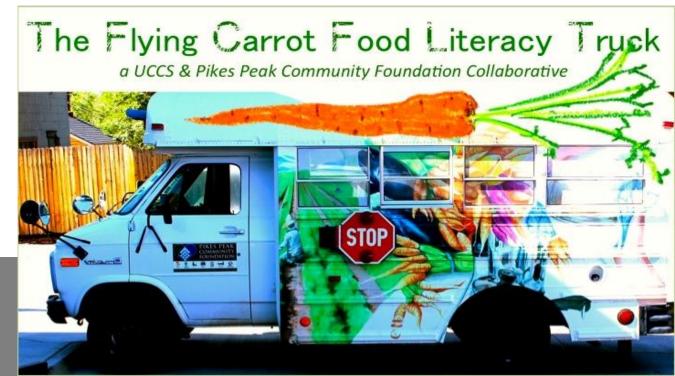
Farmers Markets

Community
Events



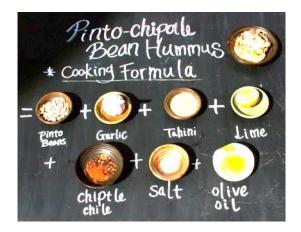
ocal Schools

The Flying Canot is an innovative mobile project that fosters food awareness and empowers individuals to improve the well-being of themselves, the community, and the planet by providing creative hands-on experiences, building cooking skills, and improving access to local, seasonal, and sustainable food.





### **Carrot Dream Team**



http://www.localfoodshift.pub/the-meaning-of-local-food-in-education/

### Lessons Learned....

Cooking with local food
Developing culin
Discovering new local
Recognizing biodiversity

Engaging comm FARM to
Getting people e CONSUMER
Inspiring each ot
Connecting with

Re-inventing personal food journeys
Exchanging culti
Expanding dieter
Becoming farme
farmers...

Learning about s

Calculating econ
Understanding is
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## Plant-Forward Strategies

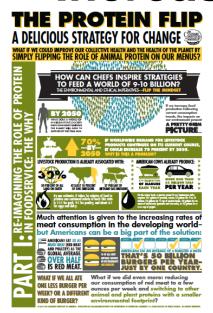




University of Colorado Colorado Springs



# Protein Flip: Reduce the Meat, Increase the Plants



#### **Menus of Change**

Culinary Institute of America & Harvard School of Public Health www.menusofchange.org









#### **Slow Food**

Slow Meat Conference – Better and Less www.slowfoodusa.org/slowmeat

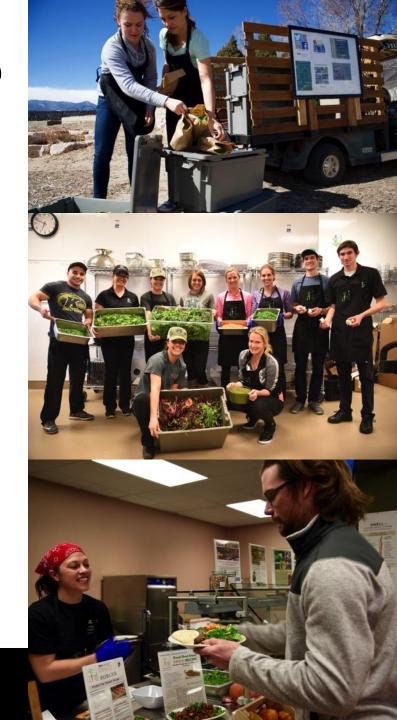


ty of Colorado o Springs



Change **Agents** of the **Future** of Health

positive energy passion knowledge





Your path to seed citizenship begins with **Grain School!** 

Learn How to Grow, Harvest, Mill, Cook, **Bake, and Brew with Heritage Grains** in this Three-day Workshop!

January 12-14, 2018 University of Colorado Colorado Springs Public Grain Forum Saturday, January 13, 2018

UCCS students (for credit) \* Non-credit registration: \$395\*

\*Includes breakfasts, lunches, and all materials



### Special Topics Course

### Curriculum Integration



#### **Grain Project GOAL**

To (re)localize heritage grain production in the Arkansas Watershed.

In January 2016, UCCS held its first Grain School together with Rocky Mountain Seed Alliance and an impressive faculty comprised of farmers, small scale producers, millers, bakers, brewers, university professors, students, and community members. Out of this action packed 3-day course, we launched the Arkansas Watershed Grain Project with a vigorous 3-year strategic plan to establish a grain economy in the Pikes Peak Region.

For more information and to join and support this local grain revolution contact Nanna Mever at nmever2@uccs.edu.



University of Colorado

- 1. To support best agronomic prac@ces and formalize the role of diversifica@on on small Colorado Farms: Grain production, as part of a diversified farm, contributes to the farm and community ecosystem services and promotes sustainable agriculture, especially when perennial grain production is possible
- 2. To promote sustainability, health, food tradi@ons and food security in the Colorado Springs and surrounding areas: Heritage and ancient grains are rich in nutrients, while less allergenic and they promote dietary diversification, cultural understanding, and allow for innovative approaches when (re)designing sustainable and healthy eating practices, products (e.g., breads, cereals, brews) or menus.
- 3. To create demand through community engagement and educa@on to boost economic development through localizing grain produc@on: While consumer interest is high in alternative grains, local sourcing has largely focused on other crops such as produce or cheese. By raising consumer interest and education, greater demand for grains will result and this can boost economic development.

Geographical Area: Arkansas River Watershed, including higher al9tude regions such as Buena Vista, Salida, Divide and Woodland Park, CO, Colorado Springs, Monument, Black Forest, Fountain, and Pueblo, CO.

Partnerships: Rocky Mountain Seed Alliance (RMSA), University of Colorado, Colorado Springs (UCCS), Arkansas Valley Organic Growers (AVOG), Rocky Mountain Farmers Union Coopera9ve Development Center, CSU Extension

#### Crops of Interest (all whole grain):

- 1. Heritage/Ancient wheat
- 2. Heirloom flour corn

3. Under-u9lized/represented grain (e.g., buckwheat)

## FARM-TO-INSTITUTION RESEARCH & EDUCATION

HSCI Independent study or Internship (1-3 cr)

supervised by Associate Professor in Health Sciences, Nanna Meyer



#### Work with Colorado Food Policy Teams on Farm-to-Institution





Farm-to-Institution is considered one of the most important prospects of the local food movement and its chance to expand to become main stream. Universities and hospitals have an enormous potential to link a refreshed farm-toinstitution program to education, including academic programming for students, as well as promoting health and good nutrition across campus. For hospitals, a local and sustainable food approach is a powerful proof that health begins with good nutrition and that what's locally grown provides some of the best nourishment for those in care. Farm-toinstitution also brings culture back to American families and boosts local farmers' livelihood through institutional commitments. Colorado's institutions are emerging with innovative models and this internship/independent study focuses on researching these processes with the objective to share success stories and help others transition to healthier, local food connections.



What: Internship, Independent Study, Project

When: Spring, Summer, or Fall 2017

Where: University of Colorado, Colorado Springs with collaboration across

Colorado's institutions.

#### Contact Nanna Meyer at nmeyer2@uccs.edu

University of Colorado, Colorado Springs UCCS Beth-El College of Nursing and Health Sciences

1420 Austin Bluffs Parkway Colorado Springs, CO 80918 phone: 719 238 0119

#### UNIVERSITY OF COLORADO, COLORADO SPRINGS, UCCS PRESENTS:

### INTERNSHIP: LOCAL FOOD SYSTI WITHIN THE ARKANSAS RIVER

(3 CREDITS, CHOOSE ALL OR ONE OF THREE; SUMMER STARTS JUNE 1ST, FALL AUGUST 20TH; AT LEAST 10 HRS PER WEEK OR MORE; COLORADO FARM AND ART MARKET (CFAM) REQUIRES WEDNESDAY AND SATURDAY COMMITMENT)

### 1. ON THE FARM

SEEDS, SOIL, AND ORGANIC AGRICULTURE

#### 2. AT THE FOOD HUB

STRUCTURE, FUNCTION AND DISTRIBUTION SYSTEMS

#### 3.AT THE FARMER'S MARKET

PROCESS FROM FARM TO MARKET, DIRECT MARKETING







#### JOIN COLORADO'S LOCAL FOOD MOVEMENT









TO SIGN UP AT UCCS CONTACT NANNA MEYER NMEYER2@UCCS.EDU
TO SIGN UP AT COLORADO COLLEGE CONTACT SOPHIE JAVNA

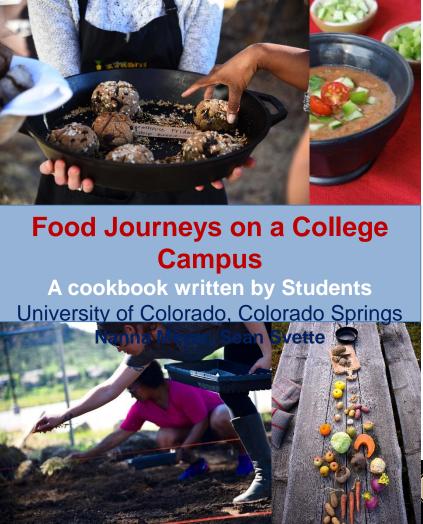
SOPHIE.JAVNA@COLORADOCOLLEGE.EDU

## Student-Supported Publishing

Food Journeys on a College Campus 2018-2020



Thank You Susan. I will never forget.



# GREEN ACTION FUND

Thank You GAF.
For making UCCS
the best experience of
my life.























## **UCCS GREEN ACTION** FUND



Moving Forward Together: UCCS 1st Annual Sustainability Summit







### Mission

 The Green Action Fund reduces the ecological footprint of UCCS and promotes sustainable environmental, social, and economic values through a variety of student-led projects.



## **Funding Evaluation Criteria**

- Reduction of Ecological Footprint
  - Increased Student Involvement
    - Education and Outreach
      - Long-term Feasibility
        - Scope of Impact







### Green Action Fund Summary 2012-2017







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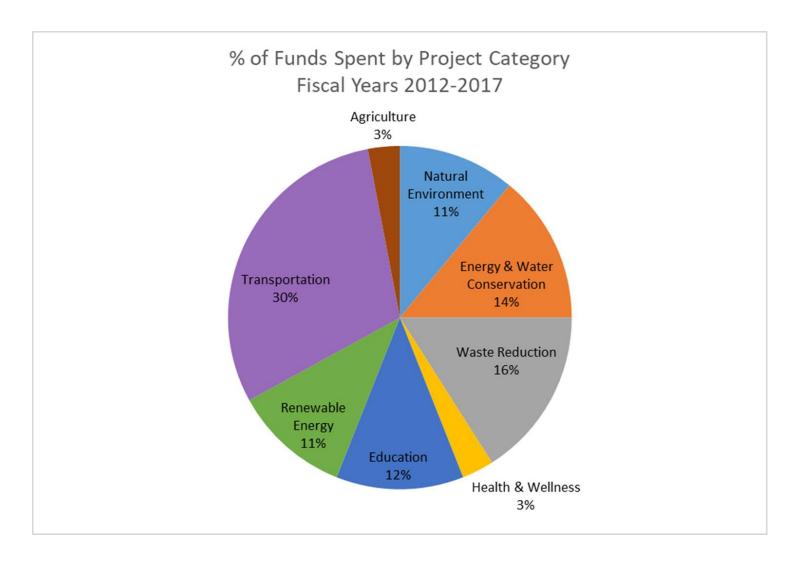
















#### **Aquaponics at the Greenhouse**

- Spring 2016
- · \$3,300









## **Hyperloop Pod Design Research Project SpaceX Competition**

Fall 2015 & Spring 2016 Sent 12 students to competition - \$6,217 Funded research on design - \$5,000









#### **DRIVE Project** Spring 2016 \$25,694





















**Roaring Fork River Trip** 

**Spring 2017** \$2,244

















#### Take Back the Tap

2013-2016 \$39,291 (4 yrs)

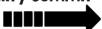
















































**UCCS GREEN ACTION FUND** 





















Safety first!

GREEN ACTION FUND



to Protect Our Rivers

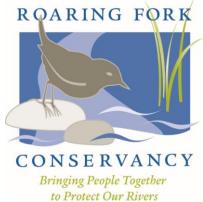




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**UCCS** 









**UCCS** GREEN ACTION FUND

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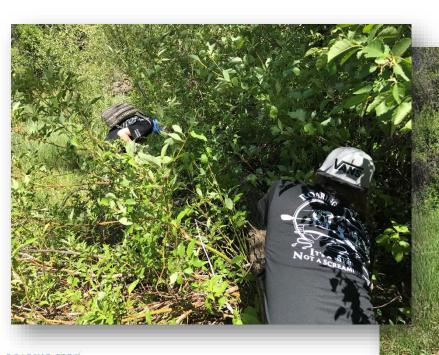


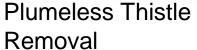






Roaring Fork, It's a River... Lazy Glenn Open Space































































































#### Roaring Fork River Trip 2017

It's a River, not a Screaming Utensil!

#### **Barbed Wire Sucks!**

In partnership with the Roaring Fork Conservancy, UCCS's Roaring Fork Staff pulled barbed wire fence and weeds at Emma and Lazy Glen Open Spaces - both are noted elk and deer migration corridors. Our industrious crew of all ages worked through the heat of the day with remarkable enthusiasm and focus. We were able to remove a significant amount of fencing

to allow safe passage every spring and fall for local ungulates. These efforts fulfilled work goals outlined in each property's management plans.

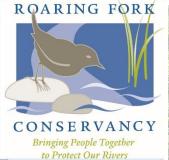












From the Roaring Fork Conservancy: "We are beyond grateful that the UCCS group contacted us and for the work

that they put in. Trips like this allow us to bridge the gap between East and West, Colorado Springs and Roaring Fork, and connect the story of Colorado's shared water resources."







#### Roaring Fork River Trip 2017

It's a River, not a Screaming Utensil!













Thistle Sucks Too!

Plumeless thistle is designated as a "List B" species in the Colorado Noxious Weed Act. It out competes native species and forage crops and it is unpalatable to wildlife. Preventing seed production and planting desirable grasses and forbs to out compete it is effective, however the site must be monitored for at least 10 years after the last flowering adult plants have been eliminated.









#### From the Roaring Fork Conservancy:

"We are beyond grateful that the UCCS group contacted us and for the work that they put in. Trips like this allow us to bridge the gap between East and West, Colorado Springs and Roaring Fork, and connect the story of Colorado's shared water resources."















#### LGBT+ Resource Center at MOSAIC











## Campus Pride Index



- Measurement tool to improve campus climate for LGBTQ and ally people
- Significance to colleges and universities
- significance to prospective students/employees







### 2012-2017 What Has Changed?

- Assistant Director/Program Director Position
- Intentional effort to build partnerships and collaborate across campus/broader community
- Expansion of SafeZone Program
- Leveraging Campus Pride Index to Increase Impact



### Impact of This Work

 Thriving student organizations (Spectrum, Transmission, QPOC)



- Increased social awareness of LGBTQ topics/issues
- Culture shift to a more knowledgeable and proactive campus
- Shared responsibility among campus partners in promoting diversity and inclusivity



## Questions?













## New Developments for the Sustainable Development (SUDV) Minor

- SUDV minor created in 2004-2005
- Revisions in 2008 added a required Sustainability Seminar capstone course
- Revisions for Fall 2018 add a new required course, Introduction to Sustainability and Environmental Studies
- Approximately 35 students are currently declared in the SUDV Minor





## Sustainable Development Minor Learning Outcomes

- Identify core concepts and critiques of sustainable development
- Learn to describe the interdependency of sustainable development's three pillars of equity, environment, and economy
- Understand the current state of knowledge for global climate change
- Develop independent and collaborative research skills





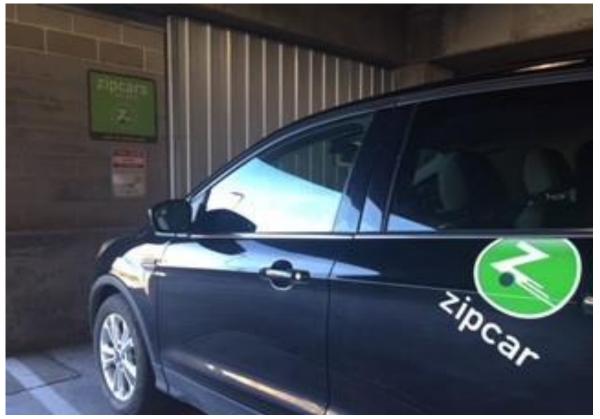






### Zipcar Carshare Program

Hourly rate includes rental fee, gas, insurance and 1st 180mi







# Low Emission Fuel Efficient (LEFE) priority parking spaces









## Electric Vehicle Charging Stations



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## MMT College Pass Program









## MMT College Pass Program

Ridership by Month





## Bicycle Friendly University: Silver





## Support for Bicycling

Pedal Perks Incentive and **Engagement Program** 

Dero Zap

**Program** 



#### Why should you sign up?

Pedal Perks is a way to help you maintain a regular bicycle commute. You will also be rewarded for being an active cyclist when you attend educational workshops, clinics, and events that will help keep you pedaling all year long. Just riding your bike to campus can even earn you Pedal Perks Points!

#### What are the incentives?

- Decrease your carbon footprint
- Increase your physical fitness
- Improve your overall health and wellbeing
- Win plenty of great prizes
- Meet others and help support the campus bicycling community!

#### How can you sign up?

Right now at the Parking and Transportation office! email: st-sus15@uccs.edu

Or contact the Sustainability Office at sustain@uccs.edu

For more information: http://www.uccs.edu/pedalperks

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## Support for Bicycling

On Campus **Showers** 

Free Bike Registration **Bike Loan Program** 

**Freshman Free Bike Program** 

#### **Bike Lockers for Rent**

















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# Sustainability at the Kraemer Family Library

From the library's vision statement:

We practice and promote environmentally sustainable behavior.





#### KFL Team Green

KFL Team Green raises awareness of sustainability opportunities in the Kraemer Family Library and around the UCCS campus, and explores ways to enable environmentally sustainable behavior in our professional and personal lives.

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## KFL Team Green: Library Projects

- Proper recycling of library materials
- Countertop composting in staff kitchen
- Composting and using compostable tableware library staff events
- In partnership with the Sustainability Office Keep America Beautiful grant, replaced 35 recycle bins in the library
- Replaced space heaters to conserve energy and lower costs
- Campus committees























#### What's next

- Highlighting research on sustainability
- Development of Sustainability Plan
- Partnership with the PPLD Green Team
- Looking for partnerships to work on sustainability











#### What is SEAS?

- Student run organization on campus to promote environmental awareness and taking action towards a "greener" campus and community
- Working on multiple projects
  - -Divestment
  - -Take back the Tap
  - -"We are still in"
  - -Other projects on campus and with community



#### Divestment

- Work with CU Boulder and CU Denver to urge the regents to divest from fossil fuels and reinvest in renewable energy
- Thousands of signatures on the petition from all three campuses and large student support



# DIVEST COM FOSSIL FUELS

## Take Back the Tap

- Initiative started in 2010 to end sale of plastic and pre-packaged water on campus, and with help from GAF and Office of Sustainability, succeeded
- No longer sell packaged water bottles on campus
- 5 years of giving out water bottles to incoming freshman groups
- Installment of hydration stations on campus
- Continued promotion of our clean tap water in Colorado Springs









#### "We Are Still In"

The "We Are Still In" pledge allows us to join thousands of universities, businesses and cities across the United States to show our country leaders and other world leaders that we stand by the Paris Climate Agreement, though our government has backed down from its pledge into the agreement.

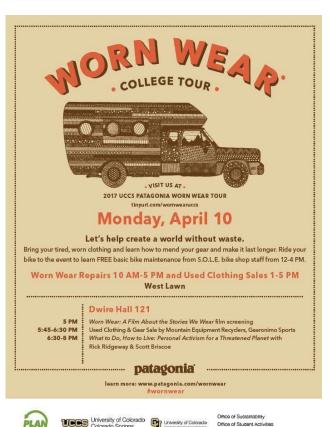
We are collecting petition signatures of UCCS students, faculty, staff and affiliates to show that we here at UCCS as well as members of the CU system stand strong in our environmental beliefs and are pushing for the CU system to recognize our commitment.



#### Other projects

- Student garden-handed over from a long reign of SEAS work
- Patagonia Worn Wear-partnered with GAF and Office of Sustainability
- Educational movie nights and discussions













Recreation Wellness Center









## Energy Conservation Measures – Facilities Services

#### **El Pomar / KFL LED Lighting Retrofit**



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#### Fixtures Currently Installed

Fixture Type	Watts Per Fixture	Number of Fixtures
3 - 32w T8 (pendant 4ft)	85	1068
2 - 32w T8 (1x4 & 2x4)	58	1095
2 - 25w T8 (pendant 3ft)	43	16
2 - 26w 4pin CFL (Recess Can)	112	423

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#### Post Retrofit

Fixture Type	Watts Per Fixture	Number of Fixtures
3 - 32w T8 (pendant 4ft)	42	1068
2 - 32w T8 (1x4 & 2x4)	28	1095
2 - 25w T8 (pendant 3ft)	9	16
2 - 26w 4pin CFL (Recess Can)	6	423





#### Benefits and Anticipated Savings

- According to the EPA's eGRID emission factors published in 2015, for each kWh saved, approximately 1.8 pounds of Carbon Dioxide (CO2), .006 pounds of Sulfur Dioxide (SO2), .003 pounds of Nitrogen Oxides (NOx), and .043 milligrams of Mercury (Hg) are eliminated from future power plant emissions into our atmosphere annually.
- Quality Light Today's LEDs produce light in a variety of color temperatures similar to fluorescent, but don't have any flickering issues that can happen with fluorescent.
- Lifespan The average life of a T8 LED is 50,000 hours, versus only 30,000 hours for an average T8 Fluorescent.



#### Benefits and Anticipated Savings

- kW reduced 100
- kWh reduced 522,932
- Payback 1.4 years



#### University Hall Low Flow Urinal Project



- In existing buildings, urinals typically average 1 to 3 gallons per flush.
- Looking at a five-day week and using the facilities three times a day, a single individual could flush a urinal 780 times a year.
- 30 males X 260 days X 3 flushes/day = 23,400 flushes/day.



# University Hall Reduced Flow Urinal Project

- John Fort, Facilities Services staff member converted 15 urinals from 1.0 gpf to 0.5 gpf.
- Instead of replacing the valves he found retrofit kits to reduce the gpf.
- Before conversion: 23,400 gallons / 7.48 gallons per cubic foot = 3128 cubic feet
- After conversion: 11,700 gallons / 7.48 gallons per cubic foot = 1564 cubic feet
- Typically, low flow valves can cost \$250 \$400 each plus additional parts and labor to install.
- The retrofit kits cost \$673.75 plus \$144.00 in labor.
- Payback = 6 8 months.









#### Evaluation

- NREL Provided evaluation support/analysis
- Looked at 5 different roofs
- Criteria
  - Fairly new roof
  - Reasonably good condition/minimal obstructions
  - Easy access to connect to building power
  - Good Internal Rate of Return





- 189 kW DC system (540 panels)
- 286,200 kWh/year (Bldg: 240,700 kWh)
  - 0.7% degrad./yr
- \$300,000 cost
- \$19,390 1<sup>st</sup> year savings
- · IRR: 6.7%



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Electric Connection/Reversing Meter





Screen Shot of Monitoring Software



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## LEED | 64 Points | Highlights



Regional + Recycled Materials

Percentage of Recycled Content (MR Credit 4.1 and 4.2)

Percentage of Local/Regional Materials (MR Credit 5.1 and 5.2)

16%

Percentage of Certified Wood (MR Credit 7)

82%

- Solarban 90 Glazing
- Daylight Harvesting + Lighting Controls
- Motorized Window Shades for Shading and Glare Reduction
- Indoor Air Quality Plan Throughout Construction





#### LEED | BiPolar Ionization

http://atmosair.com/technology/how-atmosair-works/

#### · Particle Reduction via particulate agglomeration

 Ultra fine particles are agglomerated to bigger/heavier particles that are more easily filtered and reduced from the breathing range.

#### VOC (Volatile Organic Compound) Control

Odor Control - Complex hydrocarbon chains are molecularly oxidized into simpler harmless elements.

#### · Mold, Bacteria, Viruses, Germs (Pathogen) Reductions

Reproductive cycle of influenza is interrupted by AtmosAir process and colony forming units decrease.

#### Neutralize Static

Bi-Polar Ionization neutralizes all charges in the air and eliminates static electricity.

#### Track and Measure Your IAQ

Temperature, Relative Humidity, Co2, PM2.5 (particulate), VOC Monitoring.

#### Energy Savings

- Potential 20% to 30% Reduction in HVAC Tonnage Plant Sizes.
- Up to 50% Reduced Outside Air is possible. Reduction in Heating/Cooling Loads = 5-10% utility cost savings.

#### Sustainability Ratings

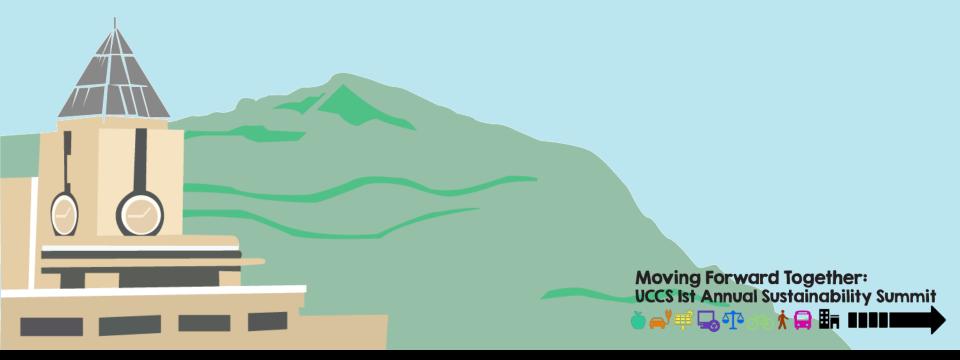
Add up to 7 LEED points by integrating the technology. Specific WELL points are also available.







#### Lunch + Discussion







## University of Colorado Colorado Springs

