

Campus Center for Appropriate Technology Biennial Report Spring 2017 - Spring 2019





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Campus Center for Appropriate Technology

Humboldt State University

Arcata, CA 95521

(707) 826-3551

ccat@humboldt.edu

ccat.humboldt.edu



Published 2019

Editors:



In the fall of 1978, three HSU students—Karin Nelson, Peter Sinsheimer, and Louis Hoilland—banded together to form a campus group dedicated to appropriate technology. They were inspired by an appropriate technology movement that had built in response to E.F. Schumacher's ground-breaking book "Small is Beautiful," which called for "technology with a human face."

Late in the spring of 1979, a new Environmental Resources Engineering (ERE) faculty member—Peter Lehman—arrived on campus. Peter had plans to teach a summer course entitled "Design and Build Your Own Solar Water Heater" and received a grant from HSU President Alistair McCrone to do so. He contacted Youth Educational Services (YES) director Pamela Kambur, seeking a location on campus where his class could install the solar heater they were building. Pamela put him in touch with Karin, Peter, and Louis and CCAT was born.

The group searched the campus and settled on the Buck House as a location for the solar project and a future home for CCAT. The house was so dilapidated and the grounds around it were so overgrown that the house was slated to be burned down for an arson investigation class. Undeterred, Peter and his class installed the solar water heater during the summer of 1979. Then during the next academic year, the small group gathered more supporters and went about securing permission to use the house to demonstrate appropriate technology. With strong support from Vice President Edward "Buzz" Webb and Facilities Director Don Lawson, permission was finally granted.

During the summer of 1980, Kirk Girard, Sandy Peterson, and Kelly Gillogly—the first CCAT co-directors—moved into the Buck House and work began. The new directors and student and faculty volunteers reroofed, repainted, rewired, replumbed, insulated, and generally refurbished the house. The grounds were cleaned up and later that year the Associated Students program known as the Campus Center for Appropriate Technology became a reality. Over the years, the Center added to the original solar water heater by incorporating a photovoltaic system, a composting toilet, a food and heat producing attached greenhouse, greywater marsh, wind turbine, permaculture design, a large organic garden, pedal-power machines, and much more.

Mission Statement

CCAT strives to demonstrate that living lightly on the earth is both practical and rewarding. We are dedicated to sustainability and to help others live likewise. We seek to accomplish this mission by:

- Demonstrating appropriate technology in a residential setting.
- 2. Dispelling the myth that living lightly on the earth is difficult or burdensome.
- 3. Collecting and disseminating information about appropriate technology.
- 4. Examining the ethical and social consequences of technology

What is Appropriate Tech?

Appropriate Technology (AT) describes a way of providing for human needs with the least impact on the Earth's finite resources. When determining if a technology is appropriate for a specific use, we at CCAT examine a number of issues: is the technology built locally or use local materials? Can it be built, or at least maintained, with a minimum of specialized training? Is its use sustainable over many generations? Does it cause suffering in its manufacturing or use, human or otherwise, disproportionate to its benefits? Can we financially afford it? With answers to these questions, or at least predictions, we try to balance the benefits and harms of a technology to determine if it is appropriate.



Despite these advances and CCAT's growing reputation nationally, the Buck House and CCAT's grounds were still shown as a parking lot on the campus master plan. Throughout the 1990s, faculty advisor Peter Lehman and many co-directors attended master plan meetings to have CCAT recognized as a permanent part of the HSU campus community. They were unsuccessful.

Then, in the early 2000s, the Buck House was moved from its original site to make way for HSU's new Behavioral and Social Sciences Building. For years, it sat forlornly in an unused lot while CCAT temporarily relocated to the nearby Jenkins House. Finally, through the efforts of many CCAT supporters, HSU agreed to relocate the Buck House just south of the new BSS building. A new basement floor was constructed and the Buck House was moved back and remodeled and updated. Best of all, CCAT was granted substantial grounds around the house and is now shown as permanent on the HSU campus map.

Fast forward to the present. The center Center has continued to serve as a living laboratory for experiential learning opportunities by designing, creating, and testing numerous appropriate technologies, green building designs, and sustainable living techniques. Directed and funded by students, the center functions as a live-in demonstration house and educational center.

Three student co-directors live in the house for a one-year term and direct the program and development of the house and grounds. The co-directors run a program that supports 18 student employees, teaches 8 classes, works with over 15 HSU classes, designs and implements appropriate technologies within the house and on the grounds, gives free tours and workshops, maintains an extensive resource library, and makes countless efforts to educate the public about the impacts of our technologies on the environment.

Here is a look back four decades of highlights.

- 1978 CCAT starts as a <u>YES House</u> student initiative.
- 1979 Peter Lehman and his Solar Design Class install the first solar hot water system on the Buck House
- 1980 Kirk Girard, Sandy Peterson, and Kelly Gillogly—the first co-directors—take up residence in the Buck House during the summer. The Buck House is completely refurbished
- 1981 CCAT becomes an Associated Students program.
- CCAT's composting toilet is the first to be officially permitted in Humboldt County.
- 1982 Construction of CCAT's original greenhouse.
- 1982 Graywater catchment, a student-designed system to recycle used dish, shower, laundry and hand-washing water, is installed at the Buck House.
- 1983 Faculty members Bob White (Political Science) and Peter Lehman (ERE) design and have approved an undergraduate emphasis program in Appropriate Technology.
- 1984 Appropriate Technology Transfer (CCAT's newsletter) begins publication. It is now one of Arcata's longest-running publications.
- 1984 Faculty members Bob Gearheart and Peter Lehman (ERE) design and have approved a graduate program in International Development Technology.
- 1985 Wind turbine is constructed.
- 1986 Pedal power starts at CCAT. It reaches its heyday in the early 90s when rows of energy-generating bikes power concerts, speeches and more.
- 1991 Students take CCAT off the grid with the installation of a set of photovoltaic panels, obtained by Peter Lehman from the Jet Propulsion Laboratory in Pasadena, Calif. CCAT would stay off the grid until 2001.
- 1998-2003 Construction of straw bale shed.
- 1999-2002 Biodiesel production days. Thanks to student ingenuity, CCAT was for a time the only place in Humboldt County to provide this renewable fuel.
- 2004 CCAT residents move to make way for the Behavioral & Social Sciences Building.
- 2005 Construction of the cob oven
- 2007 CCAT moves back into the Buck House. The renovated facility includes a new ground floor, (the old house structure now makes up the second floor), plans for a new greenhouse, gardens, a greywater marsh and more
- 2009 Final construction and beautification of cob oven
- 2012 New greenhouse construction
- 2018 CCAT 40th year anniversary

Connection to Academics: ENST123 Courses



CCAT Classes were traditionally facilitated by members of the community, as of Fall 2018 the positions are filled by students and funded through Associated Students as Instructional Student Assistants. Supplies are funded through Instructional Related Activities. HSU students can take these 1-unit credit/no-credit courses to explore a unique hands-on application of sustainability. Students in the Appropriate Technology Minor are required to take two of these courses to fulfill their degree requirements.

Herbalism

- Overview of Herbs and their properties
- Creating herbal teas, oils, salves, and tinctures
- Holistic healing
- Wild crafting in Humboldt

Green Building

- Overview of natural building materials and applications
- Creating natural paints, hempcrete, and cobb
- Exploring alternative approaches to building materials and design



Urban Homesteading

- Overview of self-sufficiency practices in a home setting
- Explore aspects of DIY, prepping, preservation, off-grid, permaculture, sustainability
- Projects both inside and outdoors

Organic Gardening

- Overview of gardening emphasizing on organic growing methods
- Exploring garden planning, seed saving, planting with the seasons, propagation, transplantation
- Work directly in the CCAT gardens



Appropedia

Appropedia is a collective website of appropriate technology projects from around the world. The site contains ongoing and past projects of CCAT. Appropedia is a place for you to find all the information that CCAT has collected over the years on projects including directions, diagrams, and notes.

Please reference Appropedia by going to **www.appropedia.org/Category:CCAT** for more information on any projects below. Our hope is that you and the community can use this information to duplicate the appropriate projects in your own space.

ENGR 305: Appropriate Technology

Spring 2019	Spring 2018	Spring 2017
Creenbourge reinwater gatebraent	Rainwater catchment	Cold Box
Greenhouse rainwater catchinent		Compost Tumbler
MEOW optimization	(North hill) redesign	Grey water pump redesign
Outdoor solar shower		,
		Natural paints
Yurt roof renovation		Rainwater catchment

Other Classes Involved with CCAT

ENGR 535: Development Technology

Rocket mass cobb bench heater

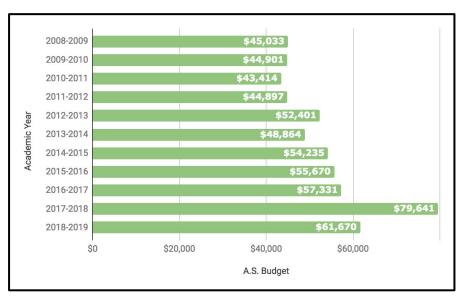
Greenhouse water reclamation

- ESM 353: Environmental Education & Interpretation Graphics
- ART 372: Graphic Design: Studio Topics

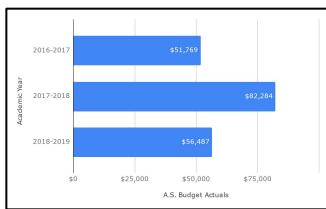
(toolshed) redesign



As a program under Associated Students, CCAT's employee wages, utilities, supplies, and services are funded via student fees. There is the Instructionally Related Activities (IRA) budget which supports the ENST 123, ENGR 305, and other classes on campus that do projects with the program. CCAT's Trust Fund is for hospitality and emergency expenses, which is replenished with fundraising. Fundraising activities include Cap & Gown rentals in the spring, and CCAT T-shirts sold regularly and at tabling events.

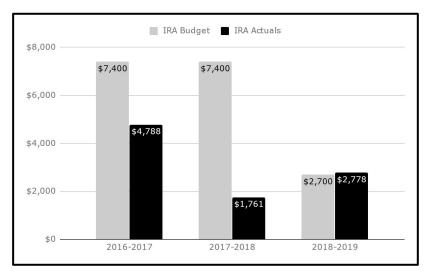


A.S. budget allocations 2008-09 to 2018-19. Allocations generally reflect student enrollment. In 2017-18 Co-Director's wages started to come from the budget, after an Americorp grant expired.



Budget actuals for A.S. Budget. 2018-2019 values as of 4/24/19. Spending starts and ends in July of each year.

\$15,500 (estimated balance as of 4/24/19)



Instructionally Related Activities Budget & Actuals. 2018-2019 actuals as of 4/24/19



Outreach platforms:

- Facebook: Campus Center for Appropriate Technology
- Instagram: @ccathsu
- The LUMBERJACK

Humboldt State University's student run newspaper

KRFH

Humboldt State University's student run radio station

KSLG

Independent music and alternative radio stations

- Lost coast outpost LOWDOWN

 A fun, easy and free way to reach out to the local community
- Mailchimp

Platform for CCAT email blasts

eartn. repair

URBAN HEIRLBOM SKILLS FOR SUSTAINABLE LIVING HOMESTEADING

Tabling for CCAT in HSU's UC Quad

Event in CCAT's classroom





Employee based events:

- Team Kayaking trip (4/28/19)
- Team Orientation (8/18/19)
- Tule Fog Farm Employee Potluck (9/21/18)
- Employee Potluck at CCAT advisor Jim Graham's (10/26/18)



Employee Monthly Potluck Meeting Spring 2019

Spring 2019 Events/Workshops:

- "Open House" (02/08/19)
- Plant Pigment Workshop (02/08/19)
- "Living Off the Grid in Alaska" (02/20/19)
- Mushroom Madness & Mushroom Fair (3/25/19 -3/21/19)



Mushroom Fair Spring 2019

Recurring events:

- Movie nights
- Open Mic Night
- Workshops
- Open House
- May Day Festival
- Volunteer Friday's (10-4pm)



La Loca Loca Herbalism workshop Spring 2018

Events Continued

2018 Events/Workshops

- "Waste Not, Want Not Workshops" put on by WRRAP
 - Composting Workshop (11/07/18)
 - "Tinker Time DIY" ~ "a series of hands-on interactive DIY and zero waste activities. Also collab w/ ROSE (11/09/18)
- "Harvest Festival" (10/19/18)
- "Radical Mycology Convergence" in Mulino, Oregon (10/12/18-10/14/18) CCAT CLUB
 - "Mushrooms and Zero Waste" (11/07/18) follow up for RMC
- "DIY Soap Making Workshop" (10/09/18)
- "Intro to Permaculture & Site Visit" (09/30/18)
- "Intro to Permaculture: Climate Change Data & What You Can Do" (09/25/18)
- "Know Your Rights: Training For Activist" (09/17/18)
- "Know Your Rights: Basic Training" (09/10/18)
- "All About the Bees: Broaden Your Horizons & Bees Are Diverse" (09/08/18)
- May Day Festival 40th Year Anniversary (04/28/18)
- Solar Light Workshop (04/17/18)
- Companion Planting Workshop w/ Oh Snap! (3/23/18)
- Soil Workshop w/ Oh Snap! (3/9/18)
- DIY Body Butter Workshop (Before March)
- WRAAP PRESENTS: The DIY Series
 - Recipe Book Making: 5 Tips for shopping and cooking zero-waste (03/20/18)
 - Homesteading Skills: body care & cleaning products, sauerkraut 03/37/18)
 - Natural Pain Workshop (04/03/18)
 - Menstrual Pad Making & herbal tinctures (04/10/18)
 - Composting Day (04/17/18)
 - Recycled Jewelry Making & Mason Jar Madness (05/01/18)
- CCAT Open House (02/02/18)

2017 Events

- Open Mic
- D.I.Y. Body Care
- M.E.O.W. movie night: How cuba Survived Peak Oil
- Movie Nights
 - E.T. the extra terrestrial,
 - How to let go of the world (and love all of the things that climate change can't change)
 - This Black soil
- Eco- dyeing workshop
- Cooking Tasty Greens
- Data Encryption workshop
- Silk Screen Workshop
- Pizza making potluck & movie

Getting Involved

Getting involved at CCAT is easy, be sure to sign up to our email list, follow us on Facebook &/or Instagram @ccathsu to stay updated, and keep on the look out for event flyers around campus and town.

Volunteer Friday is every Friday 10a-4p!



Tours

- Co-Directors & employees host guided tours around the CCAT grounds and residence
- History and Appropriate Tech features
- Available for classes as group tour and interested local community members as private tour
- Great chance to see all the hidden gems

Library

- Hundreds of books on a range of topics
 - Appropriate technology, Environmental science, permaculture, gardening, social science, engineering, fiction, even some textbooks
- Online catalogue
 - Librarything.com
- Self checkout system return after 21 days
- Office space
 - Computer for employees and/or students
 - Office supplies
- Place to host meetings

Gardens & Greenhouse

- Organic gardens
 - Fruits, veggies, herbs, natives
- Herb spirals, Hugelkultur beds
- Lawn-to-garden conversion
- Hydroponics
- Seed starting, propagation, plant transplanting, fruit tree grafting
- Food forest
- Community garden
- Tool shed

Seed Exchange

- Jars of seeds saved during growing seasons
- Available for any and all, exchange encouraged
- Set up in classroom

Classroom & Community Space

- Environmental Studies (ENST123) classes
- Tea Kettle (free tea!)
- Microwave & dishware
- Chalk boards
- Event board
- Piano
- Meeting & Workshop space
 ~email to schedule~
 - Place for students to gather
 - Community meeting space
 - Healing Vibrations Club
 - Earth Guardians
 - Fermentation club
 - Humboldt Permaculture
 Guild
 - o WRAAP
 - o Oh Snap
 - HumBucks
 - Cooperation Humboldt

Institutional Knowledge

- Signage
 - Easy to understand descriptions and explanations of technologies and sustainable practices
- Zine & pamphlet rack
 - o AT Transfer
 - Biennial Report
- Website (ccat.humboldt.edu)
- Appropedia (www.appropedia.org/Category:CCAT)
- Posters
- Demonstrations & workshops
 - Student-led learning opportunities
- Volunteer Friday
 - Opportunity for individuals to gain a hands on experience in sustainability and homesteading
- Google Team Drive
 - Platform to collaborate ongoing projects/ events and to plan for future goals
- Low Waste Initiatives
 - Composting
 - Three Bucket Dish Wash System
 - Save water by using the scrape (compost), wash (soap & sponge), rise, and sanitize (clean water with white vinegar) system with small groups.

Workshops

- Several per month, during Volunteer Fridays or events
- Sustainability, DIY, gardening & horticulture, homesteading, green building
- Hands-on or informative
- Take place in classroom or outside
- Open to students and community

Rentals & Resources

- Tool share
- Resource reclamation station
- Caps & Gowns



The mission of the CCAT Club is to **bring people together** around the ideas of the Campus Center for Appropriate Technology and explore new ideas together. The Club can provide for a greater number of volunteers, larger network on campus and in the community, increasing creative diversity of ideas, and allowing for direct action by people not employed by CCAT.

- The club was reinvigorated in Fall 2018.
- Weekly Friday meeting is from 4-5pm with an average attendance of 15 CCATers.

Club Officers

- President → Karina Coronado Fa'18 Sp '19
- Vice President → Liz Lorz Fa '18 Sp '19, Austen Thibault Sp '19
- Treasurer → Anh Bui Fa'18, Casey Albarran Sp '19
- Secretary → Austen Thibault Fa'18 Sp'19, Daniel Noel Sp'19

Club Projects

- Inoculating logs in mushroom bed:
 - List of mushroom types: About 8 Alder logs (about 1-2 feet long) were inoculated with Oyster mushrooms.
 About 7 cherry tree logs were also inoculated, this time with turkey tail spawn.
- Workshop wizards:
 - Bamboo & Oyster wind chime,
 - Notebook Binding,
 - Block-print shirt fundraising,
 - Creative tabling at community events,
 - Bread Making with the Horno(cob oven)
 - Zero Waste and Mushrooms(post RMC info session)
 - Continued development of collaborative zine
 - AT transfer Spring 2019



Spring 2019 projects

- Compost lid revamp, starting to collect data on compost
- Greenhouse renovation
- Fronius Solar Inverter Installation
- Hydroponics
- Community garden
- Pig preparations
 - Pig pen
 - Compliance

Current & Future Projects Spring 2019

- Community Garden
- Deer Fencing
- Pigs for Food Waste Reduction
- Kitchen Counter Renovation
- Hydroponics
- Rope Pump installation
- Ethnobotanical garden terraces
- Water Quality Analysis
- Resource Reclamation Station
- Mini-split heat pump (HEIF)
- People Powered Washing Machine
- HEIF Biogas Digester Demonstration Proposal
- Kiwi Arbor Renovation
- Water Heater Installation (HEIF)
- Garden Water Supply Optimization

2018 Finished projects:

- Lawn to garden conversion
- Restroom repainted
- Community Garden construction completed
- New herb spirals
- Garden Access Repair
- Cob Terraces Replastered

2017 Finished projects:

- Greenhouse Floor Renovation
- Upcycled Library Outdoor Walkway
- Greenhouse Roof Renovation
- Cob Oven Roof Renovation
- Cob Terrace Plastering
- Hydroponics Install
- Greywater Marsh Relocation
- Community Garden ADA Accessible Terrace
- Bike Powered TV Set Up
- Hugelkulture Conversion of old Greywater Marsh
- Walkway Behind Greenhouse built
- Northern Hillside Erosion
 Mitigation Cover Crop



The Community Garden is located across the road of CCAT's lower driveway, just south of Schatz Energy Research Center. It took years of planning and construction, but opens for plot reservation end of Spring 2019. Students hold priority, and can reserve a plot to manage as a group. The garden also includes an ADA accessible bed.

Spring 17: Construction: Ground shaping and mulching

Fall 17: Construction:

ADA accessible terrace construction began

Spring 18: Construction:

Fencing put up, ADA terrace Complete

Fall 18: Garden construction complete:

Irrigation installed, toolshed built

Spring 19:

Community Garden Management Plan revisions and submission Opening ceremony May Day 2019



Spring 2017



Spring 2019

Physical site

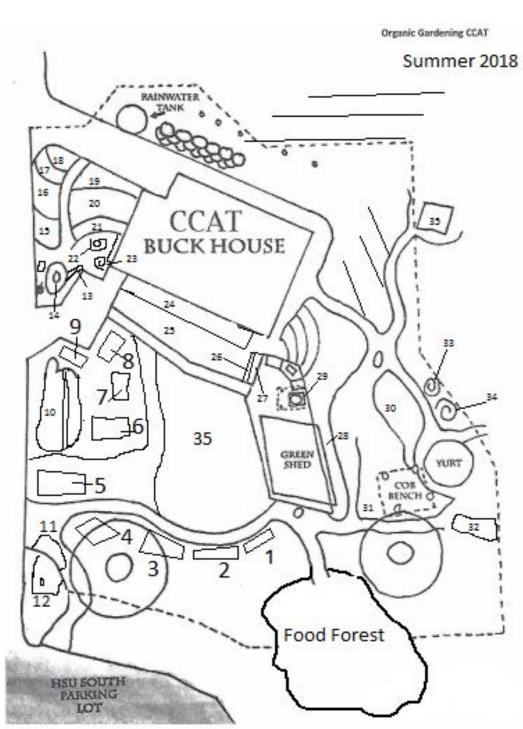
- 1-9. Organic Garden Beds
- 10. Pig Pen
- 11. Metal Arch
- 12. Cherry Tree
- 13-14. Grey Water System
- 15-21. Cob terraced garden
- 22. Herb spiral
- 23. Garden bed
- 24. Greenhouse
- 25. Hügelkulture Bed
- 26-27. Reused Wood Garden

Beds

- 28. Solar Bed
- 29. Cob Oven
- 30. Blueberry Bushes &

Herbs

- 31. Rosemary / Lavender
- 32. Mushroom Beds
- 33-34. Herb Spirals
- 35. Lawn Garden
- 36. Kiwi Arbor





Co-directors:

- Casey Albarran→ Spring 2019/Fall 2019
- Karina L. Coronado→ Fall 2018/Fall 2019
- Jacob Gellatly→ Fall 2018/Spring 2019
- Anh Bui→ Spring 2018/Fall 2018
- *Isabel Sanchez*→ Fall 2017/Spring 2018
- Abdullah Alyami → Fall 2017/Spring 2018
- Austin Anderson → Spring 2017/Fall 2017
- Kelsey Summers→ Fall 2016/Spring 2017
- Ana Molina → Fall 2016/Spring 2017

Course Facilitators:

Spring 2019

- Herbalism → Jasmine Zenderland
- Urban Homesteading→ Shanti Belaustegui & Emily Owen
- Organic Gardening → Natalie Rynne
- Green Building→ Ben Nguyen

Fall 2018

- Herbalism → Giana Tesoro
- Permaculture → Casey Albarran
- Organic Gardening → Ashlen Weddington
- Green Building→ Eddie Sanchez

Spring 2018

- Herbalism → Marina Gomez
- Organic Gardening → *Jenna Kelmser*
- Green Building→ Solomon Clark

Fall 2017

- Herbalism → *Marina Gomez*
- Urban Homesteading → Cassie Kelly
- Organic Gardening → *Jenna Kelmser*
- Green Building→ *Evan Barbarick & Ciera Wilber*

Spring 2017

- Herbalism → *Ana Molina Trejo*
- Urban Homesteading → Meka Hunt & Erica Tevini & Alfonso Herrera
- Organic Gardening → Ryan Sendejas & Karl Peterson
- Green Building→ Kelsey Summers & Ciera Townsley-McCormick

Student Assistants & Interns: Fall 2018/Spring 2019

- Maintenance → Kush Rawal Fa `18, Daniel Hodges Sp'19
- Project Manager → Ryan Sendejas Fa'18, Anh Bui Sp'19
- Organic Gardener I \rightarrow Adrienne Murphy
- Organic Gardener II → Sebastian Forward
- Events Coordinator→ *Genesea Black-Lanouette*
- Outreach Coordinator → Aidan Belleau Sp'19
- Office Coordinator→ Rebecca Hueckel
- Co-Director Intern→ Lily Farrell Fa `18, Colton Evans Sp'19
- Publicist Intern→ Emily Read Sp '19
- Project Manager Intern→ Miles Kinman Sp '19

Fall 2017/Spring 2018

- Maintenance → *Jacob Gellatly*
- Groundskeeper→ *Nat Loften*
- Community Garden Coordinator→ Ryan Sendejas
- Organic Gardener I → *Jenna Kelmsler*
- Organic Gardener II \rightarrow *Joe Paredes*
- Project Manager→ Bobby Johnson Sp '18
- Office Coordinator→ *Karina Coronado*
- Outreach Coordinator→ Jason Martinez
- Events Coordinator→ *Genesea Black-Lanouette*
- Publicist→ *Michelle Myers*
- Co-Director Intern→ *Indigo Melo*
- Publicist Intern→ Samantha Love

Spring 2017

- Maintenance → Evan Barbarick
- Groundskeeper→ Francesca J. Watts
- Engineering Technitian → Jacob D. Gellatly
- Community Garden Coordinator→ Ryan Sendejas
- Organic Gardener I→ *Jenna Kelmsler*
- Organic Gardener II→ *Alyssa N. Klymkiw-Eisman*
- Project Manager→ Connor Kennedy
- Office Coordinator→ Lauren Virzi
- Outreach Coordinator I→ Kevin Riley
- Outreach Coordinator II→ Terran J. Hilden
- Events Coordinator→ *Angelica Trevino*
- Librarian→ *Brittani A. Alberto*
- Webmaster→ Charles Castillo
- Education Coordinator→ Nikko Mills
- Record Keeper→ Rachael E. Luster
- Newsletter Coordinator I→ Samyrha Saba
- Newsletter Coordinator II→ Mariza G. Ocampo
- Fundraiser→ *Matthew Hable*
- Volunteer Friday Coordinator→ Brianna King



Our dedicated volunteers & club members

CCAT Steering Committee
James Graham (CCAT Faculty Advisor)
Lonny Grafman (Faculty, ENST 123 advisor)
TallChief Comet (Facilities, Past Faculty Advisor)
Sean Armstrong (Co-D Alumnus)
Randy Brians(Co-D Alumnus)
Associated Students Board of Directors
Jenessa Lund (AS Executive Director)
Casey Park (AS Board Coordinator)
Marcom
HSU Library special collections

