We empower university students from all disciplines to solve the environmental challenges of the North Bay.
Climate change is becoming a daily reality that deeply affects our lives. At the Center for Environmental Inquiry (CEI, Center), we are addressing this challenge head on by training a workforce with the skills and experience to create a safe, healthy and sustainable future for the North Bay and beyond.

This year, we helped students tackle tough sustainability issues related to air, water, fire, biodiversity and education. Working with community partners – including those affected by the North Bay fires – students gathered new information and brought new ideas to the table. No matter what their academic degree, these students will graduate from Sonoma State University (SSU) prepared to address these environmental challenges.

Please join me in celebrating some of the many solutions they discovered in 2018.

Dr. Luke was honored by the North Bay Leadership Council this year with the environmental stewardship award.
The Center brings together students, faculty, businesses and community members to find solutions to North Bay sustainability challenges. We work with faculty to engage students across all disciplines in regional projects as part of classes, internships and degree programs. We give students skill-building experiences on 4,200 acres of wildland preserves and sites throughout the North Bay.

This year, 1,510 students in 26 departments participated in Center programs. We sparked interest in fire studies by co-hosting the Living with Fire Symposium on campus with more than 400 faculty, students, community and organizational partners. We launched an annual public workshop series to increase first-hand understanding of sustainability issues in our region. We boosted immersive learning by adding a new campsite at one of our preserves and increased funding for student projects by 50%. Throughout the year, we continued to explore new collaborations that will allow us to reach all students in all disciplines.
Large wildfires are five times more common today than 45 years ago. **How will our local wildlands survive these changes?**

Students are working on five research projects to study the resilience of animals and plants to fires. Their results suggest some species declined while others flourished. This information is helping land managers better understand how lands may be changing.

**Students:**  

**Faculty:**  
W. St. John and Drs. J. Law, M. Shott, N. Rank, M. Clark, M. Kozanitas, L. Bentley, D. Girman

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**500%**  
Increase In Fire Frequency In Last 45 Years

**199K**  
Acres Burned In North Bay Fires In 2017

“The students are gathering data that helps us better manage the land.”  
- Melanie Parker  
Sonoma County Regional Parks
FLOOD FUTURES
Solutions on Copeland Creek

Flood frequency is predicted to increase with climate change. **How can we stay safe?**

This year, students and faculty began long-term modeling and monitoring of Copeland Creek, which jumped its banks in 2017 and flooded downstream communities. Public agencies and community groups are using the results to design engineering solutions.

Students: J. Gebauer, I. Russo
Faculty: Drs. O. Anfinson, M. Goman

20% | Increase In Heavy Downpours In Last 50 Years In The U.S.

17% | U.S. Urban Lands In High-Risk Flood Zones

90% | U.S. Natural Disasters That Involve Floods

“The students’ studies are **boosting our understanding** of why flooding occurs on Copeland Creek.

- Susan Haydon
Sonoma Water
THE AIR WE BREATHE

Asthma in Sonoma County

Air pollution affects respiratory health throughout the world. **How do we identify local sources of these pollutants?**

Students designed a new low-cost air quality monitoring station that can be deployed throughout the county and beyond to better understand how air, wind and agriculture affect our ability to breathe.

**Students:**
J. Cao, J. Urbina, R. Jergenson

**Faculty:**
Drs. C. Halle, F. Farahmand

15%  Asthma Increase In U.S. In Last Decade

1 in 10  People In Sonoma County Have Asthma

#1  Reason For Children's Missed School Days

**“We’re enthusiastic about installing the student prototype at City Hall.”**

- Darin Jenkins
City Manager, Rohnert Park
Disadvantaged students often lose academic skills over the summer. **How can we boost retention?**

Decades of research show that learning out-of-doors boosts academic skills. Trained SSU student naturalists collaborated with teachers in Mendocino County to infuse outdoor learning into the K-8 summer school curriculum.

**Students:**
R. Jensen, M. Freed, E. Rosa, J. Ly

**Staff:**
S. DeCoursey

96% **Students Who Learn Better Outside**

2x **Increase In Student Attention Span After A Lesson Outside**

18 **Duration Of Outdoor Learning Benefits In Months**

“Our students learned so much outside. I’m going to incorporate outdoor learning into my school-year activities.”

- Charlotte Triplett, Anderson Valley Elementary School
Feral pigs can cause damage that leads to local extinction of native plants and animals. How can we maintain biodiversity in our wildlands?

Students and citizen scientists are mapping pig damage and studying pig behavior using wildlife cameras at the Galbreath Wildlands Preserve. The Center uses the information to develop a pig-control program that benefits native species.

"This experience prepared me to pursue a career in wildlife management."

- Evan Lieberman
SSU Geography Major
Students in 26 departments worked on 138 projects with faculty advisors. They studied at SSU’s preserves and sites throughout the North Bay.

To the right:
Descriptions of select student projects

Total Projects
20 Fire
31 Water
10 Air & Climate
41 Biodiversity
13 Technology
4 Education

Lands (in acres)
3,670 Galbreath Wildlands Preserve
40 Los Guillicos Preserve
450 Fairfield Osborn Preserve

Biodiversity
Hope Ablaze: An Outdoor Performance Exploring Species Loss
Drs. J. Law and A. MacNab, Hutchins School, and Theatre Arts

Transmission Of Sudden Oak Death Disease
Drs. N. Rank, M. Kozanitas and D. Rizzo, Biology and UC Davis

Habitat Needs Of Threatened Red-Legged Frogs
Dr. D. Girman, Biology

Restoration Of Riparian Communities On The Osborn Preserve And SSU Campus
S. DeCoursey, (CEI); W. St. John, (GEP)

Air & Climate
A Low-Cost Sensor For Understanding Air Pollution Sources
Dr. C. Halle, (CEI)

Ability Of Wetlands To Sequester Greenhouse Gasses
Dr. M. Goman, (GEP)

Characterization Of Local Climate Variability
Dr. N. Hobson, Mathematics & Statistics

Restoration Of Riparian Communities On The Osborn Preserve And SSU Campus
S. DeCoursey, (CEI); W. St. John, (GEP)

Water
Determinants Of Landslide Susceptibility
Dr. L. Waters, Geology

Development Of A Pilot-Scale Microbial Fuel Cell For Treating Winery Wastewater
Dr. M. Cohen, Biology

Making Water Resources An Integral Part Of County Planning
Dr. T. Jacobson, (GEP)

Fire
Post-Fire Sediment Contaminants In The Laguna De Santa Rosa
Dr. J. Guilford, Geography, Environment & Planning (GEP)

Fire Prevention And Biodiversity In Power-Line Rights-Of-Way
Dr. C. Halle, Center for Environmental Inquiry (CEI)

Impacts Of Fire-Fighting Activities On Cultural Resources
Dr. Thomas Whitley, Anthropology

Effects Of Seed Genetics On Post-Fire Restoration Efforts
Dr. Lisa Bentley, Biology

Education
Writers In Wilderness: Boosting Academic Achievement In K-8 Students With Outdoor Learning
S. DeCoursey, (CEI)

Using Social Robots To Teach Children About Water
Dr. J. Sullins, Philosophy

Technology
Automated Identification Of Species In Wildlife Camera Imagery
Drs. G. Gill & C. Halle, Computer Science and CEI

Alertnorthbay: An Early-Warning System For Detecting Fires In Sonoma County
Dr. G. Kent, University Nevada Reno

Shake Alert: A Statewide Early-Warning System For Earthquakes In California
Dr. J. Merritt, UC Berkeley
FACULTY & PARTNERS

54 faculty partnered with 93 organizations to create exceptional experiences for students to learn outdoors and find solutions to environmental challenges in the North Bay

Faculty

Owen Anfinson, Geology
Jeff Baldwin, Geography, Environment & Planning
Lisa Bentley, Biology
Glen Brassington, Psychology
Grace Brown, Mathematics & Statistics
Elizabeth Burch, Communication Studies
Matthew Clark, Geography, Environment & Planning
Mike Cohen, Biology
Vanessa Dodge, Geography, Environment & Planning
Paul Draper, Theatre Arts & Dance
Scott Eberle, Psychology
Steve Estes, History
Farid Farahmand, Engineering Science
Gurman Gill, Computer Science
Derek Girman, Biology
Michelle Goman, Geography, Environment & Planning
Jackie Guilford, Geography, Environment & Planning
Nathan Haenlein, Art
Chris Halle, Center for Environmental Inquiry
Heidi Herrmann, Geography, Environment & Planning
Natalie Hobson, Mathematics & Statistics
Claudia Holt, Psychology
John Isom, Geography, Environment & Planning
Tom Jacobson, Geography, Environment & Planning
Elizabeth Jones, Early Childhood Education
Melina Kozanitas, Biology
Justine Law, Liberal Studies
Lynne Lyle, Early Childhood Education
Alexis Macnab, Theatre Arts & Dance
Mike Moore, Geography, Environment & Planning
Nicole Myers, Geology
Mark Perri, Chemistry
Bruce Peterson, General Education University Studies
Jeremy Qualls, Physics
Nathan Rank, Biology
Talena Sanders, Communication Studies
Nanette Schonleber, Early Childhood Education
Scott Severson, Physics
Martha Shott, Mathematics & Statistics
Wendy St John, Geography, Environment & Planning
John Sullins, Philosophy
Laura Waters, Geology
Richard Whitkus, Biology
Thomas Whitley, Anthropology
Adam Zagelbaum, Counseling
Richard Cobb, UC Davis
Neil Driscoll, UC San Diego
Daniel Fernandez, CSU Monterey Bay
Eric Hongisto, University of San Francisco
Graham Kent, University of Nevada, Reno
Carolyn Mehan, Pennsylvania State University
Jonah Merritt, UC Berkeley
Dave Rizzo, UC Davis
Francis Trail, Michigan State University

Partners

Ag + Open Space Sonoma County
AlertNorthBay
AmeriCorps National Civilian Community Corps
AmeriCorps Watershed Stewards Program
Analytical Sciences, LLC
Anderson Valley Land Trust
Anderson Valley Unified School District
Apple Blossom Elementary Baseline Consulting
Bellevue Elementary
Binkley Elementary
CalFire
California Conservation Corps
California Department of Fish & Wildlife
California Department of Water Resources
California Fire Science Consortium
California Geologic Survey
California Lichen Society
California State Parks – Annadel
Charlie Judson Photography
City of Penngrove
City of Rohnert Park
City of Santa Rosa
Community Foundation of Mendocino County
CSU Monterey Bay
D’Argenzio Winery
US Fish & Wildlife
Department of Transportation
Earthways, LLC
Friends of Copeland Creek
Gold Ridge Resource Conservation District
Grant Elementary
Harmony Drum Circles
Institute for Bird Populations
James Monroe Elementary
JUMP
La Tercera Elementary
Luther Burbank Elementary
Madrone Audubon Society
Meadow Elementary
Mendocino County Resource Conservation District
Michigan State University
Miwok Valley Elementary
National Audubon Society
Navarro River Watershed
North Bay Conservation Corps
Occidental Arts & Ecology Center
Osher Life Long Learning Outward Bound
Pacific Watershed Associates
Pennsylvania State University
Pepperwood Preserve
Pacific Gas & Electric
Point Blue Conservation Science
Proctor Terrace Elementary
Rancho Cotati High School
Regional Air Quality Control Board
Re-Oaking Coalition
Santa Rosa Creek Stewardship Program
Scott Hess Photography
Shelly Benson Consulting
Sacramento Municipal Utility District
So Co Fire & Emergency Services
So Co Office of Recovery & Resiliency
Sonoma County Sheriff’s Office
Sonoma County Technical Services
Solano Audubon Society
Sonoma County Forest Conservation Working Group
Sonoma County Office of Education
Sonoma County Regional Parks
Sonoma Water
Sonoma County Youth Ecology Corps
Sonoma Master Gardener
Sonoma Mountain Preservation Group
Sonoma Mountain Ranch Preserve
Sonoma Resource Conservation District
Sonoma State Facilities
Strawberry Elementary
The Conservancy
Tim Dye Consulting
TREET Fund
UC Cooperative Extension
UC Cooperative Extension Sudden Oak Death Program
UC Davis Bodega Marine Reserve
UC San Diego California Institute for Telecommunications & Technology
University of Nevada, Reno
University of San Francisco
US Forest Service
US Geological Survey
Utility Arborists Association
West Side Elementary
Western Weather Group
Wildlife Conservation Society
DONORS & VOLUNTEERS

Thank you for helping create an engaged and environmentally ready society!

Donors*

Visionaries (Lifetime) $100,000 & Above
- The Federated Indians of Graton Rancheria Tribal Council
- Fred & Jean Galbreath
- Robert & Sue Johnson
- Norwick
- William & Joan Roth
- Daphne Smith

Benefactors $20,000–99,999
- Alexander & Brenda Leff

Explorers $5,000–19,999
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- Clark & Carol Mitchel

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- Dougherty Family Fund of the Community Foundation of Sonoma County
- Earthways, LLC
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- Paul & Dorothea Geiger
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- Laguna de Santa Rosa Foundation
- Butch & Vivien Lindley
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- William Sterling
- Hugh Stevenson & Diane Paleczny-Stevenson
- UBS Employee Giving Programs
- Richard Whitkus

Legacy & Endowed Gifts
- Fred & Jean Galbreath
- Marthe & Stephen Norwick
- Daphne Smith

Volunteers

Galbreath Preserve
- Andy Balestracci
- Lisa Bauer
- Alice Bonner
- Pam Callaghan
- Johanna Cummings
- Brittany Davis
- Lori Dudzik
- Nancy Armstrong-Frost
- Curtiss Frost
- Peter Gordon
- Jill Hannum
- Kerry Heise
- Bob Helms

Osborn Preserve
- Paulin Aguilar
- Claire Anderson
- Bonnie Betts
- John Branscome
- Janet Calhoon
- Patricia Castaneda
- Makayla Freed
- Diane Fritz
- Emma Forester
- Kara Haley
- Charlie Judson
- Alan Keller
- Linda MacElwee
- Sandy Mailliard
- Debby Mefferd
- Jade Paget-Seekins
- Mark Rawlins
- Tina Walter
- Leela Hammond
- Patricia Hatfield
- Janet Henker
- Al Janulaw
- Sharon Janulaw
- Robyn Jensen
- Michael Knappman
- Judith Lerner
- Bruce Linscott
- Elias Lopez
- Justin Ly
- John Lynch
- Laurie Marshall
- Jessica McGready
- Nicole McGoin
- Jason McGuire
- Nicolette Michel
- Al Myers
- Anna Myers
- Becky Olsen
- Jessica Rodriguez
- Emily Rosa
- Paolo Solari
- Shay Stalnaker
- David Stark
- Virginia Hotz-Steenhoven
- Jon D. Steenbehen
- Kate Symonds
- Ariella Tiber
- Cheryl Ulrich
- Mike Weinman
- Megan Wilson
- Kendra Wolf
- Amanda Young

Campus
- Annemarie Brown
- Vic Liptak
- Tania Montes

*Based on gifts received between July 1, 2016 and June 30, 2018

OPERATIONS

Revenue / Endowments
- 38% Corporations & Agencies
- 36% SSU/CSU
- 14% Individuals
- 9% Endowments
- 4% Other
- Total: $646K

Expenditures
- 72% Programs
- 7% Lands & Facilities
- 14% Marketing & Communications
- 7% Operations
- Total: $576K

Staff
- Dr. Claudia Luke, Center Director, WATERS Lead
- Dr. Chris Halle, Nature!Tech Lead
- Suzanne DeCoursey, Education Manager

Student Employees
- Jimmie Cao
- Zak Erickson
- Makayla Freed
- Dustin Howland
- Robyn Jensen
- Jaime Johnson
- Justin Ly
- Victor Madrid
- Richard Mitts
- Taylor Moran
- Kyle Peele
- Sharon Picton
- Celia Ringold
- Emily Rosa
- Brandon Russell
- Vincent Schartz
- Javier Urbina
- Desirea Varga
- Kendra Wolf
INVEST IN THE FUTURE

Your gift helps empower every SSU student to develop the skills they need to create a resilient future. Together, we can:

- **Boost** the number of student projects by providing supplies they need to study air, water and wildland challenges.
- **Give** students first-hand experiences investigating environmental challenges by supporting travel to sites in the North Bay.
- **Strengthen** student commitment and passion by offering immersive overnight experiences at SSU preserves.

"In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught."

– Baba Dioum

We can create an empowered generation ready to address today’s environmental challenges and prepared to face tomorrow’s.

The Center is a public/private endeavor. More than half of our funding comes from the generosity of private individuals, partners and organizations.