

University of California
Centers of Excellence

ANNUAL REPORT FY 18/19



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OVERVIEW

CoE	Lead	Host Location	Sponsoring Program	Established	Status
BSL-3 Training Program	Gary Landucci	UCI	EH&S	2/1/15	<i>Renewed FY 2019-20</i>
Center for Laboratory Safety	Imke Schroeder	UCLA	EH&S	2/1/15	<i>Renewed FY 2019-20</i>
Field Research Safety	Sara Souza	UCB	EH&S	7/1/16	<i>Renewed FY 2019-20</i>
Radiation Safety	Carolyn Mac Kenzie	UCB	EH&S	12/1/17	<i>Renewed FY 2019-20</i>
Readiness	Amina Assefa	UCB	Risk Management - General Liability	3/1/18	<i>Renewed FY 2019-20</i>
Risk & Safety Training	Janette Ducut	UCR	EH&S	4/15/15	<i>Renewed FY 2019-20</i>
Safe Patient Handling & Mobility	Rebecca Hariri	UCSF Health	EH&S - Health System	7/1/16	<i>Completed 12/31/18</i>
Safety in the Performing Arts	Tracy Stark	UCSC	EH&S	6/1/12	<i>Completed 6/30/2019</i>
Unmanned Aircraft System Safety (Drones)	Brandon Stark	UCM	Risk Management - General Liability	3/1/16	<i>Renewed FY 2019-20</i>
USP 800	Bob Lawson	UCD Health	EH&S - Health System	9/11/17	<i>Renewed FY 2019-20</i>
WorkStrong	Alison Frink	UCLA	Workers' Compensation	4/1/16	<i>Renewed FY 2019-20</i>

ENVIRONMENTAL HEALTH & SAFETY (EH&S)

CENTERS OF EXCELLENCE:

BSL-3 Training Program

Center for Laboratory Safety

Field Research Safety

Radiation Safety

Risk & Safety Training

Safety in the Performing Arts

BSL-3 TRAINING PROGRAM

The BSL-3 training CoE develops and delivers high-containment laboratory safety training for personnel groups, including laboratory staff, biosafety professionals, first responders and operations & maintenance personnel. The CoE is integral in supporting the systemwide High-Containment Laboratory Oversight Committee by conducting BSL-3 lab evaluations, plan reviews and on-site training.

- Provided BSL-3 related training on site at UC campuses
 - Completed training at UC Riverside and UC Berkeley for 20 facilities management personnel (ANSI Z9.14 and operations and maintenance)
- Participated in planning and review for new and/or renovations for BSL-3 facilities at UC Merced, UCLA, UC Riverside and UC San Francisco
- Provided technical consultation and subject matter expertise to the UC High-Containment Laboratory Oversight Committee

Metrics

- Campus participants trained at UC Irvine’s national training center (124 participants):
 - UC Berkeley
 - UC Davis
 - UC Irvine
 - UCLA
 - UC Merced
 - UC Riverside
 - UC San Diego
- Trained 230+ individuals
- Completed microbiology diagnostic lab site visits at the five UC Health Systems

Trainings Conducted at the BSL-3 Laboratory

Participating Entity	O&M	Researcher	ANSI	Misc.
UC Locations	44	14	2	64
Public Health	0	3	0	6
Other Academic Universities	0	75	4	0
Government/Military Organizations	0	11	0	0
Corporate	2	4	4	0

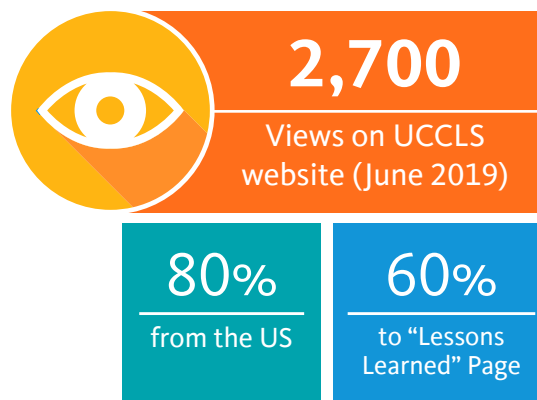
CENTER FOR LABORATORY SAFETY

The Center for Laboratory Safety CoE sponsors and supports research on laboratory safety practices with the goal of identifying, developing and applying best practices in laboratories. The Center for Laboratory Safety (UCCLS) is a founding member of the national Safety Training Consortium (STC), which focuses on developing impactful online training courses for academic institutions and researchers.

- Performed statistical analysis of Safety Culture surveys conducted at UCLA, UC Santa Cruz, UC San Francisco and UC Berkeley
 - Correlated safety factors (e.g. safety communication, engagement, attitude) with incidents to find PI engagement and risk assessment significantly correlate with fewer injuries
- Conducted education and outreach to inform on research outcomes and UCCLS activities
- Provided 18 presentations and two webinars
- Published five papers:
 - N. L. Wayne, S. Duarte-Vogel, S. Kraemer, J. D. Rager “Exposure Assessment of Laboratory Workers to Hazardous Waste from Mice Treated with Tamoxifen and Bromodeoxyuridine” J. Chem. Health Safety 2019, 26(1): 2-8. This worked was funded by a grant from UCCLS.
 - Schröder “Biological Safety: Principles and Practices, 5th Edition” Emerging Infectious Diseases 2019, 25: 195.
 - E. Czornyj, I. Schröder, N. L. Wayne, C. A. Merlic “Organic Peroxide Incident” J. Chem. Health Safety 2019, 3:3-4.
 - E. Czornyj, I. Schröder, N. L. Wayne, C. A. Merlic “Lessons Learned - Mercury Thermometer Incident” J. Chem. Health Safety 2019, 4-5: 6-8.
 - E. Czornyj, I. Schröder, N. L. Wayne, C. A. Merlic “Lessons Learned – Vacuum Pump Fire” J. Chem. Health Safety 2019, In Press
- Managed and provided subject matter expertise for the Safety Training Consortium (STC), which recruited four new members: Carnegie Mellon University, Northeastern University, Concordia University Irvine and New Mexico Tech University
- Coordinated with Risk & Safety Training CoE on development of four courses:
 - Fundamentals of Radiation Safety (for release in September 2019)
 - Fundamentals of Biosafety (for release in December 2019)
 - Waste Anesthetic Gas (WAG) Safety (for release in March 2020)
 - Hazard Identification and Risk Assessment (for release in 2020)

Metrics

- Total STC members: 18 (49 campuses)
- UCCLS website metrics in June 2019:
 - 2,700 views
 - 80% from the US
 - 60% to “Lessons Learned” Page





FIELD RESEARCH SAFETY

The Field Research Safety CoE facilitates the sharing of lessons learned and best practices in field work, while promoting risk management through the development of safety planning tools and resources.

- Held a UC Field Safety Workgroup meeting at UC San Diego to promote professional development and sharing of best practices and resources
 - The meeting included risk assessment exercises, international security, presentations on drones and tours of the SIO pier and neighboring natural reserve
- Improved instruction and competency of users for all 40 inReach communication devices
- Received a CSHEMA Marketing/Communications award for the UC Field Operations Safety Manual
- Participated in various planning meetings regarding wildfire smoke
 - Cal/OSHA advisory meeting on the new emergency standard to protect outdoor workers from wildfire smoke
 - Evaluation of air monitoring equipment



Metrics

- 335 staff and researchers trained in Wilderness First Aid
- 120+ staff and researchers were trained as Lay Rescuers to carry and use Epinephrine Auto-Injectors
 - UC Berkeley
 - UC Davis
 - UC Santa Barbara
 - UC Riverside
- 20+ international field projects supported through loan of Garmin inReach emergency satellite communication devices; as well as ongoing support of UC-managed field stations and projects within California



RADIATION SAFETY

The Radiation Safety CoE provides expert guidance on radiation safety concerns within the University of California system. The CoE is supporting development of the UC Radiation software application and is managing the UC Cesium Irradiator Replacement Program (CIRP).

- Obtained final decisions on the removal of irradiators:
 - 40 of the irradiators will be replaced with x-ray irradiators; seven will be retained for two to three years
 - Developed a checklist to assist campuses and hospitals with the removal of their Cesium/Cobalt (Cs/Co) irradiators
 - Received reimbursement of incentive money from National Nuclear Security Administration on all Cesium irradiators removed under the CIRP program to date
- Provided presentations and lessons learned information on the UC Source Irradiator Removal Project to management, as well as at national and international professional meetings
- Implemented UC Radiation software successfully to the following campuses:
 - UC Davis
 - UC Merced
 - UC Riverside
 - UC Davis Health, UC Santa Cruz, UC Irvine Health, and UC Irvine are planned for completion by the end of 2019

Metrics

- National Nuclear Security Administration contributing 13.3 M to remove Cesium irradiators and to assist with the purchase of new x-ray equipment
- UC is contributing 2.7 M towards the purchase of 24 new x-ray equipment
- Dashboard:
 - Cesium & Cobalt Removals – 40
 - Irradiator Removal Done – 9
 - Pending Removal – 14
 - Planned Removal – 17
 - Replacement X-ray Purchases – 25
 - Installation Done – 9
 - Pending Purchases – 15
 - Planned Purchases – 1
 - Cesium & Cobalt Retained - 7



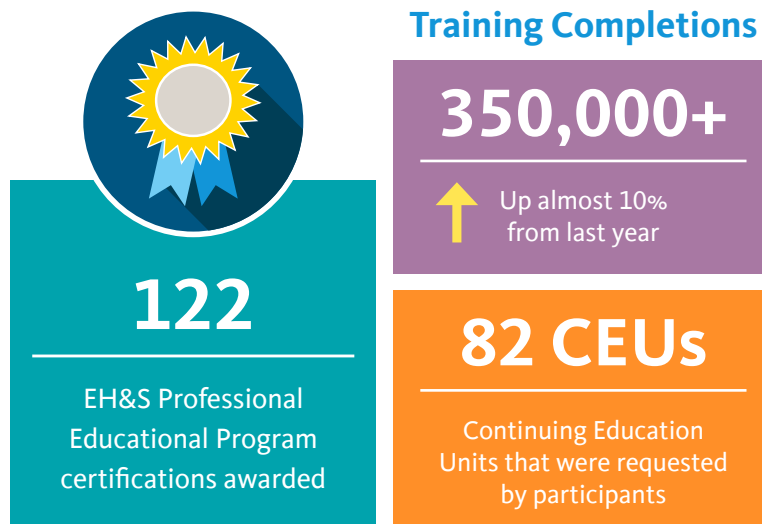
RISK & SAFETY TRAINING

The Risk & Safety Training CoE develops, distributes and analyzes systemwide training on environmental health and safety topics and risk-related initiatives. The CoE produces training in a variety of blended formats, including online (eLearning), instructor-led, tutorials (video), and webinars.

- Over 76 resources, including training courses, presentations and videos, were developed for distribution throughout the UC system
- Completed the update of over 54 courses to meet ADA guidelines to ensure accessibility
- Created and implemented an “Accessibility Needs” form into all courses, to triage any issues not covered by redesign
- Created a Course catalog listing 100+ courses containing course titles, codes, description and year published
- Held EH&S Professional workshops at two campuses (UC Santa Barbara and UC San Diego)
- Maintained partnerships with Center for Occupational & Environmental Health (COEH) at UC Berkeley, Southern California Educational Resource Center at UCLA/UC Irvine, and UC San Diego Extension

Metrics:

- Top five most used courses:
 - Laboratory Safety Fundamentals
 - Laboratory Safety Refresher
 - Personal Protective Equipment (LHAT)
 - Bloodborne Pathogens
 - Safe Patient Handling
- Over 350,000 training completions (up almost 10% from last year)
- 82 CEUs (Continuing Education Units) were requested by participants
- 122 EH&S Professional Educational Program certifications awarded





SAFETY IN THE PERFORMING ARTS

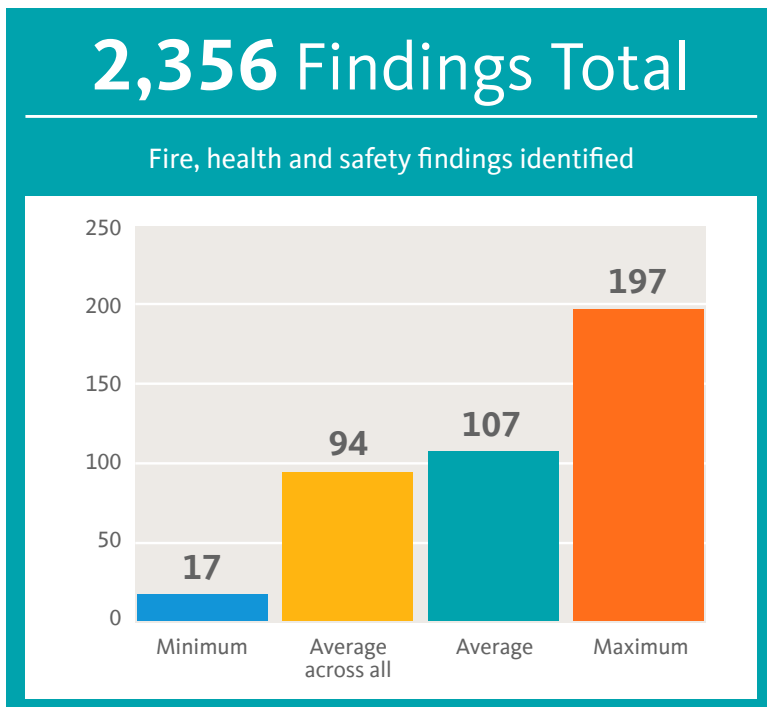
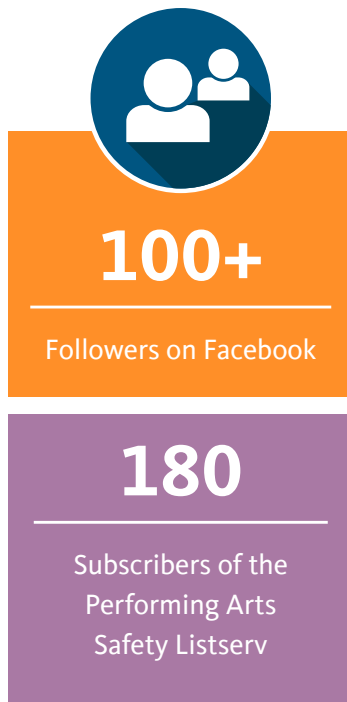
The Safety in the Performing Arts CoE provides EH&S consultation services to academic theater departments and performance venues. The CoE provides training, reference materials, and on-site support focused on integrating safety into technical theater operations, student projects, production and performance activities.

- UC Performing Arts Safety Manual continues to be leading reference for theaters nationwide
- Developed and delivered targeted theater safety training:
 - OSHA 10-hour class at UC Riverside
 - Webinar on safety netting options for orchestra pits and catwalks
 - Fall Protection for California State University (CSU), Fresno
- Campus visits:
 - UC Davis
 - UCLA
 - UC Riverside
 - UC San Diego
 - UC Santa Barbara
 - CSU (Consultation and Inspections)



Metrics

- 180 Subscribers of the Performing Arts Safety Listserv
- 100+ followers on Facebook
- Identified 2,356 fire, health and safety findings



HEALTH SYSTEM

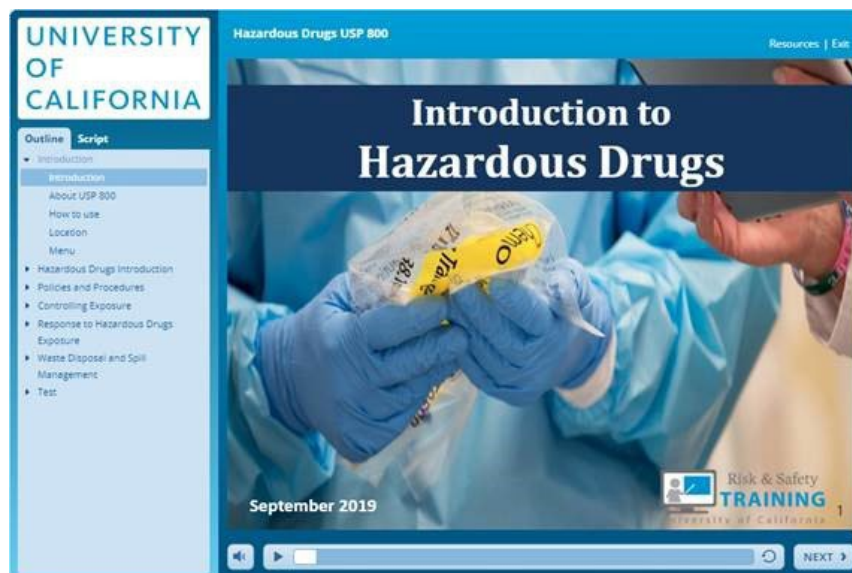
CENTERS OF EXCELLENCE:

USP 800

USP 800

The USP 800 Center of Excellence (CoE) focuses on coordinating compliance with new hazardous drug guidelines issued by the U.S. Pharmacopeia, referred to as USP 800. This CoE provides support and guidance for compliance efforts at all UC Health Systems and the Veterinary Medicine Teaching Hospital at UC Davis.

- Helped facilitate the first in-person meeting of UC pharmacy USP 800 experts, who provided guidance on the hazardous drugs list, and shared processes for assessment of risk for hazardous drugs
- Created technical guidance documents for USP 800 compliance and distributed it to nursing, pharmacy and EH&S leads at each health system to address the following issues:
 - Use of protective equipment, including respiratory protection
 - Hazard communication for hazardous drugs
 - Labeling, packaging transportation and disposal of hazardous drugs
 - Job duties for the USP 800 designated person
 - Compliance with designated area requirements
- Collaborated with the Risk & Safety Training CoE to create a hazardous drugs awareness online class
- Developed recommendations for evaluation of options for wipe sampling for hazardous drug residues
- Collected and reviewed all health system gap analysis



WELLNESS

CENTERS OF EXCELLENCE:

WorkStrong

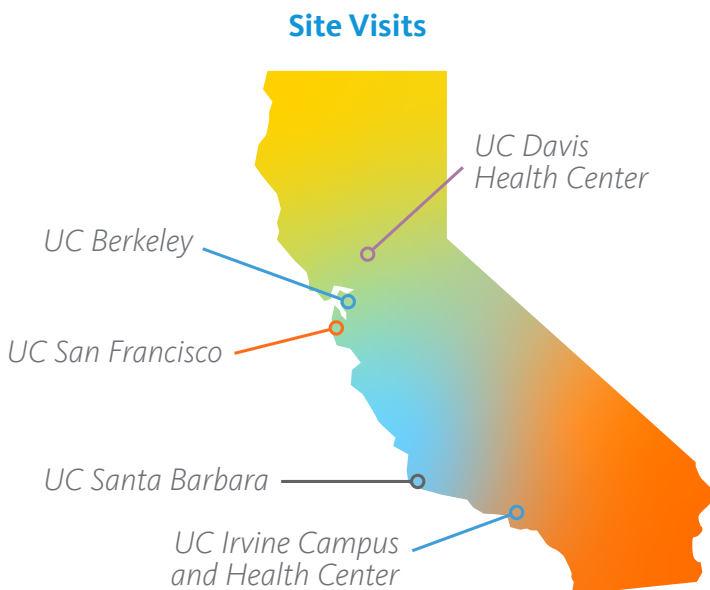
WORKSTRONG

The WorkStrong program is designed to promote recovery and prevent future workplace injuries with the expertise and collaborative support of UC staff in wellness programs, occupational health and recreational services. Participation in WorkStrong will decrease the likelihood of repeat occupational injuries and result in improved worker health, fitness, and overall well-being. The WorkStrong CoE is a shared resource for all campuses to support increased enrollment in the local WorkStrong programs.

- Implemented the “One WorkStrong” initiative
 - Standardized paperwork and processes systemwide to increase professionalism to internal and external partners
 - Allowed for more effective program oversight
- Collaborated with Kaiser on the Job Occupational Health clinics statewide to integrate WorkStrong referrals and medical clearances into the workflow of their treatment for UC Workers’ Compensation patients
- Planned and facilitated an all-day workgroup meeting at the UC Risk Summit in order to provide meaningful content and foster collaboration
- Audited all FY 18/19 WorkStrong funding requests for accuracy and appropriateness

Metrics

- Five site visits
 - UC Berkeley (August 2018)
 - UC San Francisco (October 2018)
 - UC Davis Health Center (November 2018)
 - UC Irvine Campus and Health Center (February 2019)
 - UC Santa Barbara (March 2019)
- 300 UC employees participate in WorkStrong at any given time



300
UC employees that participate in WorkStrong at any given time

RISK MANAGEMENT

CENTER OF EXCELLENCE:

Readiness

Unmanned Aircraft System Safety

READINESS

The Readiness CoE provides support and guidance to three functional areas across the system: Mission Continuity, Emergency Action Planning and Information Technology Disaster Recovery. These three functional areas are aligned under a shared technology platform, UC Ready, which supports and guides planning efforts and programmatic improvements in each area. The CoE provides leadership and programmatic guidance to support the implementation of the UC Ready platform, as well as providing training and technical support.

- Completed the first systemwide Emergency Management and Continuity Planning “Needs Assessment”
- Developed a fully-compliant Enterprise Continuity Plan Model that outlines the organizational and operational framework for campus-level continuity operations
- Launched several collaboration opportunities to facilitate better engagement and coordination across the system in areas of Emergency Management and Continuity Planning, including California Regional meetings and Health System Continuity monthly calls
- Developed a Continuity Planner Welcome Packet, consisting of newly updated training materials, programmatic guidance, and other resources, to support and guide the onboarding of new Continuity Planners/Managers
- Restructured UC Ready Administrator Training into a dynamic training that better aligns with adult learning methodologies and allows for ongoing engagement and knowledge development
- Developed a master UC Ready template for campus Emergency Action Plans that allows for quicker implementation of this planning initiative
- Launched several initiatives to better facilitate the systemwide sharing of successes and best practices, including aligning the UC continuity core competencies with existing standards and adding a Sharing Success Series component to monthly systemwide continuity conference calls

Metrics:

- Onboarded 10 new continuity planners
 - Included over 20 training sessions and monthly one-on-one consultation and guidance
- Resolved over 100 technical UC Ready inquiries/issues





UNMANNED AIRCRAFT SYSTEM SAFETY (UAS)

The Unmanned Aircraft System Safety CoE provides guidance and training in support of the safe operation of Unmanned Aircraft Systems, commonly known as drones. The CoE curates the UC Drones software application that was developed in partnership with Risk and Safety Solutions to manage flight requests and the reporting of flight data. The CoE also created the Presidential Policy affecting the use of drones within the UC system and maintains the related policy guidance document.

- Filed for additional FAA authorizations that encompass flying at night and flying over people.
- Provided UAS consultation and support with latest rule-making, implementation changes and in preparation for upcoming changes
- Finalized the formation of the UC UAS Advisory Board
- Collaborated with UC ANR and California State University, Monterey Bay for Drone Camp 2019
- Developed training materials for flight training workshops, training for multimedia teams and advanced UAS operations
- Provided guidance and support with the latest rule making and implementation changes

METRICS

- 1,268 UAS Missions (+14% from FY 17-18)
- Average Approval Time: <24 hours
- 19 Safety Incidents (-24% from FY 17-18)

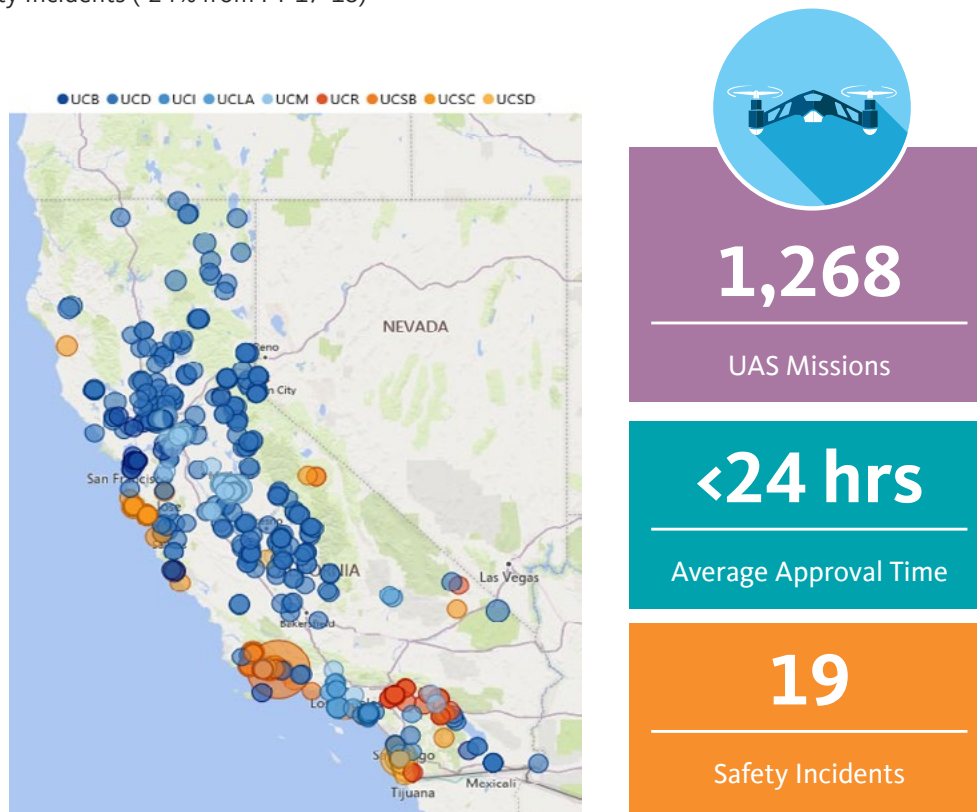


Figure 1: UC UAS Flight Across California