University of California Centers of Excellence

# ANNUAL REPORT FY 17/18



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# **OVERVIEW**

СоЕ	Lead	Host Location	Sponsoring Program	Established	Status
BSL-3 Training Program	Gary Landucci	UCI	EH&S	2/1/15	Renewed FY 2018-19
Center for Laboratory Safety	Imke Schroeder	UCLA	EH&S	2/1/15	Renewed FY 2018-19
Event Reporting & Data Management System	Ivy Kolvan	UCSF Health	Professional Liability - Health System	7/5/16	Renewed FY 2018-19
Field Research Safety	Sara Souza	UCB	EH&S	7/1/16	Renewed FY 2018-19
Radiation Safety	Carolyn Mac Kenzie	UCB	EH&S	12/1/17	Renewed FY 2018-19
Readiness	Amina Assefa	UCB	Risk Management - General Liability	3/1/18	Renewed FY 2018-19
Risk & Safety Training	Janette Ducut	UCR	EH&S	4/15/15	Renewed FY 2018-19
Safe Patient Handling & Mobility	Rebecca Hariri	UCSF Health	EH&S - Health System	7/1/16	Renewed FY 2018-19
Safety & Risk Engineering	Jim Gilson	UCB	EH&S	9/14/11	Completed 6/30/2018
Safety in the Performing Arts	Tracy Stark	UCSC	EH&S	6/1/12	Renewed FY 2018-19
Smoke & Tobacco Free	Julie Chobdee	UCR	Wellness	8/15/16	Completed 8/15/2018
Unmanned Aircraft System Safety (Drones)	Brandon Stark	UCM	Risk Management - General Liability	3/1/16	Renewed FY 2018-19
USP 800	Bob Lawson	UCD Health	EH&S - Health System	9/11/17	Renewed FY 2018-19
WorkStrong	Alison Frink	UCLA	Wellness	4/1/16	Renewed FY 2018-19

COE ANNUAL REPORT 2018

# 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 & Risk Engineering
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 training to UC personnel both at the BSL-3 Training Laboratory at UC Irvine and on-site at the UC Riverside campus
- Continued operations and maintenance training for facilities management and biosafety teams
- Supported Medical Center clinical lab site visits
  - Developed a site visit checklist based on published recommended best practices
  - Currently conducting a two-part review of all UC Medical Center operational high-containment laboratories
  - Detailed summery reports with recommendations are being generated for review by Medical Center administration and EH&S, campus EH&S, UCOP and the UC High-Containment Laboratory Oversight Committee
- Provided on-site training at UC Riverside
  - Completed on-site training for eight facilities management personnel. Additionally, UC Irvine BSL-3
     Training Program personnel were on site to participate in a large-scale emergency drill conducted in
     September 2017 (American National Standards Institute (ANSI) Z9.14, operations and maintenance)
  - ANSI Z9.14 standard testing was conducted on the newly commissioned UC Riverside School of Medicine BSL-3 facility in April 2018. Some mechanical/programming issues were identified. UC Riverside had those issues fixed and the lab was re-tested successfully in July 2018
  - Customized a three-day laboratory research training course in February 2018 for a UC Riverside lab working with HIV

### **Metrics**

# **Trainings Conducted at the BSL-3 Laboratory**

200+
Total individuals trained in 2017-18

Participating Entity	O&M	Researcher	ANSI	Misc.
UC Locations	39	21	12	38
Other Academic Universities	11	24	10	0
Government/Military Organizations	0	34	0	0
Corporate	7	5	1	1

# **Current Training Programs**

**Operations and Maintenance Programs** 

Researcher Program

First Responder & Emergency Management Program

**Certified Trainer Program** 

BSL-3 Testing & Validation



# **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 is a founding member of the national Safety Training Consortium, which focuses on developing impactful online training courses for academic institutions and researchers.

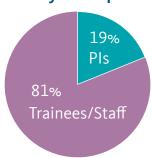
- Conducted three research projects:
  - Surveyed the safety culture, wrote comprehensive reports, analyzed data and provided safety culture recommendations to UCLA, UC Santa Cruz, UC San Francisco and UC Berkeley
  - Analyzed the impact of UCLA's safety program on laboratory accidents and injuries over time
  - Surveyed U.S. R1 universities (doctoral degree-granting institutions conducting research) for active faculty-led laboratory safety committees and made recommendations to improve campus safety structures
- Organized the 2018 Workshop on Laboratory Safety in Chicago in coordination with the American Chemical Society (ACS), National Institutes of Health (NIH), Northwestern University and UCOP, which was attended by 125 individuals
  - The workshop provided a forum for researchers and EH&S experts to focus on hazard identification and assessment
- Managed and provided subject matter expertise for the Safety Training Consortium
  - Provided administrative support to the Safety Training Consortium and served as the UC liaison between the Safety Training Consortium (STC), the UC Risk & Safety Training CoE and all 10 UC campuses
  - Recruited two new member institutions
  - o STC money raised: \$263,000 of which \$79,000 is revenue to the UC Center for Laboratory Safety (UCCLS)
  - Newly released courses:
    - Fundamentals of Laboratory Safety (Mandarin language)
    - Fundamentals of Laser Safety
  - New courses in development:
    - Fundamentals of Radiation Safety: For release in December 2018
    - Hazard Identification and Risk Assessment: For release in 2019

### **Metrics**

- Safety Culture Survey was conducted at four UC campuses (UCLA, UC Santa Cruz, UC San Francisco and UC Berkeley)
  - o 837 Trainees and Staff participants
  - o 197 Principal Investigator (PI) participants

# Safety Culture Survey Participants

N Superinter Workshop



# **Safety Culture Survey Highlights**

Trainees and Staff	Average
Have access to all required Personal Protective Equipment (PPE)	96%
Regularly wear long pants in the lab	96%
Regularly wear close-toed shoes in the lab	98%
Regularly wear gloves in the lab	93%
Report major injuries requiring medical help to their PI	96%
Pls	Average
Speak openly with the EH&S department about safety issues regarding work in their lab	95%
Would take immediate action if they saw a researcher in their lab act unsafely	97%
Their students have access to all the PPE needed for their experiments	95%



# 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.

- Launched inReach satellite communication device lending program for UC Natural Reserves and others traveling to remote areas
- Developed an Epinephrine Auto-Injector training program approved by Cal Emergency Medical Services
   Authority (CAL EMSA), which allows UC staff working in remote areas to obtain and carry epinephrine as "Lay
   Rescuers" in the event someone has a severe allergic reaction
- Launched monthly newsletter in August 2017 highlighting emerging and/or seasonal hazards, training opportunities and new resources
- With support from Risk & Safety Solutions, created and implemented the new UC Field Operations Safety Manual, which serves as a reference document and teaching tool to promote safe, successful field courses and research trips. Guidance includes sections on:
  - Planning
  - Training
  - Incident Response
  - Risk Assessment
  - o Effective Communication
  - Campus Resources
  - Common Field Hazards

- 1,000 newsletter views per month
- 120+ staff and researchers trained in Wilderness First Aid
- 4 Automated External Defibrillators (AEDs) installed at Valentine, Sierra Nevada Aquatic Research Laboratory (SNARL), Santa Cruz Island and Hastings Reserves
- Four-wheel Drive/Off-road training provided to staff from Agriculture and Natural Resources (ANR), UC Berkeley, UC Santa Cruz and UC Merced







# RADIATION SAFETY

The Radiation Safety CoE provides expert guidance on radiation safety concerns within the University of California system. The CoE is collaborating with Risk and Safety Solutions and the UC Radiation Safety Officers to develop the UC Radiation software application, which will support the management of radiation safety functions and regulatory requirements. The CoE also manages the UC Cesium Irradiator Replacement Program (CIRP), which endeavors to remove or replace cesium-based machines with x-ray irradiators due to the potential risk of malicious use of Cesium 137.

- UC Cesium Irradiator Replacement Program (CIRP):
  - o Established database of all 47 Cobalt and Cesium UC Irradiators
  - A White Paper was submitted for consideration by UC leadership with recommendations and conclusions based on technical discussions with the UC systemwide faculty Working Group on Radioactive Source Replacement
  - Presented to the Council of Vice Chancellors, UC Health CEOs/COOs, UC Academic Senate and other UC campus and hospital organizations to gain their cooperation
  - Established a contract with Sandia for all 47 UC irradiators. Negotiations resulted in a contract for UC where the majority of the costs will be paid for by the National Nuclear Security Administration (NNSA) instead of UC
- Approximately 58,000 curies of Cesium 137 are planned for removal through the UC CIRP
- UC Radiation Safety Support
  - Produced a White Paper on the pros and cons of separate Radioactive Material Licenses for hospitals and campus environments to assist in the decision as to whether to separate the licenses or keep them as one
  - Worked with UC locations to facilitate excess radioactive source removals where feasible
  - Worked with UC legal counsel on assessing the legal status of UC's radioactive shipment policies on UC roads and pursue exceptions as necessary
- UC Radiation Safety Software Application
  - UC Merced, UC Riverside and UC Davis have entered their data into UC Radiation. They are awaiting completion of the application by UC Risk & Safety Solutions to use it. The application is 90% complete

- Estimated cost savings to the UC:
  - Waste Costs Saved: 42 irradiators x 230K \$9.7 million savings in disposal costs
  - Subsidies received to buy replacement x-ray equipment: \$4.72 million is expected from NNSA in reimbursement funds
  - o TOTAL: \$14.42 million



# **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 50 resources, including training courses, presentations and videos, were developed for distribution throughout the UC system
- Created a training index that identifies mandatory training requirements and regulatory references
- Published an overview of online course development and testing processes
- Organized a library of online resources for audio, video, images, assessments and collaboration
- Updated over 50 courses to meet the Americans with Disabilities Act (ADA) guidelines and resolve issues due to Adobe Flash
- EH&S Professional Education workshops successfully held at four campuses (UC Irvine, UC Berkeley, UC Riverside and UC Davis). Participants from all 10 UC campuses attended
- Provided EH&S Professional Education Program, which is a blended learning experience that promotes continuing education for EH&S professionals in a university setting. Three certification tracks are available:
  - 1. EH&S Generalist
  - 2. EH&S Professional
  - 3. EH&S Specialist
  - Received the following awards:
    - Campus Safety, Health and Environmental Management Association (CSHEMA) Innovation Award of Honor 2017 and 2018
    - Focus on Efficiency Award 2018 (California Public Higher Education Leadership/California Higher Education Collaborative)
    - Certificate of Appreciation 2017 (University of California, Irvine)

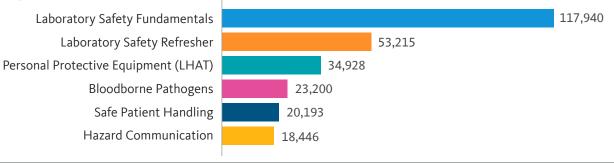
# **Metrics:**

- Major training initiatives:
  - Active Shooter
  - Concussions
  - EH&S Professional Education program
  - Motorized Cart
  - Reasonable Accommodations
  - o Travel Abroad
  - Workplace Violence Prevention



Awarded through the **EH&S Professional Education program** 

# **Top 5 most used courses**





# **SAFETY & RISK ENGINEERING**

(CoE Completed 6/30/2018)

The Safety and Risk Engineering CoE served as an equipment, facility and injury loss-prevention resource for EHQS departments systemwide. The CoE also served as a technical resource available to researchers for integrating safety management into their work.

- Federal Pacific Electric (FPE) Equipment Hazard Evaluation and Reporting
- FPE equipment was common place in construction from the 1950s-1980s but has since lost rating from Underwriters Laboratories (UL) due to the possibility of fatal arc flash events and significant loss of property due to fires
  - Evaluated FPE switchgear at UC Berkeley following two incidents and provided a report with recommendations to the campus
  - Presented an overview of FPE equipment concerns and possible interim mitigation measures at the spring 2018 meeting of the UC Campus Architects and Project Managers (known as the P-4 group) held at UC Berkeley
  - o Worked with UCOP EH&S Deputy Director to present a webinar to UCOP Capital Programs
  - Provided background information and incident reports to the UC systemwide Occupational Safety workgroup
  - Developed a one-page fact sheet for distribution to campus leaders and Facilities Maintenance staff
  - Worked directly with a number of campus Facilities groups, including UC Irvine and UCLA, to raise awareness about the FPE issues and how best to address them
- UC Riverside on-site Support
  - Coordinated with the Performing Arts Safety Center of Excellence to conduct an in-depth inspection and review of electrical hazards at UC Riverside theater facilities, including identification of FPE equipment, with a corresponding report to the campus
  - Cross-trained new Safety Engineer
  - o Assisted newly hired Safety Mentors
- UC San Francisco Gap Analysis
  - Conducted a gap analysis on implementing an effective safety management system for the Campus Life Services unit
    - Reviewed program materials and performed on-site evaluations and interviews to develop a report and recommendations to the unit
- UC Procedures Software Application Development
  - Provided Risk and Safety Solutions (RSS) with feedback on the development of the UC Procedures tool, which will address systemwide needs related to standard operating procedures (SOPs), work procedures, and protocols
  - Worked with RSS to migrate the Lockout Tagout (LOTO) application, previously supported by a private vendor, to UC Procedures





Performing Arts Safety Manual

# SAFETY IN THE PERFORMING ARTS

The Safety in the Performing Arts CoE provides EHQS 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 Theater Safety Manual continues to be leading reference for theaters nationwide
- Completed numerous outreach activities, including:
  - Presented at the following conferences:
    - Campus Safety, Health and Environmental Management Association (CSHEMA) – Rigging Safety Program
      - Completed a four-hour professional development session with attendees
      - Provided education, regulations and standards as it relates to theatrical rigging
      - Discussed unsafe hardware and practices, as well as safer alternatives
    - American Society of Safety Engineers (ASSE)
    - National Association of Music Merchants (NAMM)
    - United States Institute of Theater Technology (USITT)
      - Hosted a UC and CSU networking event
  - o Presented "Safety Netting for Performing Arts Safety"
    - · Hosted two webinars focusing on Safety Netting for Performing Arts Safety with 45 attendees
- · Campus visits:
  - UC Riverside (Consultation, Safety Audit, Occupational Safety and Health Administration (OSHA) 10hour & Safety Orientation training)
  - UC San Diego (Consultation and OSHA 10-hour training)
  - UC Davis (Consultation and Safety Audit)
  - CSU (Consultation and Fall Protection Authorized User Class)

# **Metrics**

- 200+ subscribers of the Performing Arts Safety distribution list
- 80+ Facebook followers with selected posts reaching over 1,100 viewers
- 40 participants from UC Riverside and UC San Diego for OSHA 10-hour training



Facebook (@UCCoEPAS)
followers with selected posts
reaching over 1,100 viewers



# **HEALTH SYSTEM**

# **CENTERS OF EXCELLENCE:**

Event Reporting & Data Management System
Safe Patient Handling & Mobility
USP 800

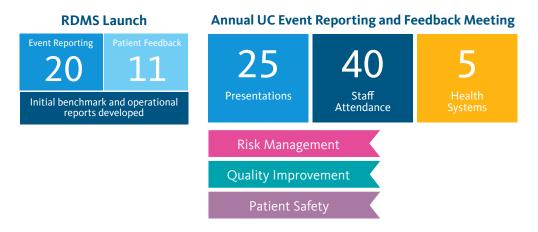


# **EVENT REPORTING & DATA MANAGEMENT SYSTEM**

The Event Reporting & Data Management System CoE provides support to the UC Health Systems and Campus Health Centers in event reporting, complaint tracking, and data management. The CoE is integral to the creation and ongoing development of a consolidated data management system (DMS) that allows for the processing and reporting of data from multiple sources in support of quality control and risk management programs at UC healthcare facilities.

- Launched the Risk Services Data Management System (RDMS) for event reporting and patient feedback
  - Event Reporting:
    - Developed 20 initial benchmark and operational reports
    - Added 9 Medication Error Benchmark reports and 5 Workplace Violence Benchmark reports
    - Coordinated training for users
  - Patient Feedback:
    - Developed 11 initial benchmark and operational reports
    - Coordinated training for users
- Developed content and launched the Patient Safety Organization (PSO)/Patient Safety Evaluation System Policy (PSES) website, which assists staff in understanding requirements of the systemwide PSES and event reporting to the PSO
  - o Finalized content for a UC-specific PSO/PSES training module
- Conducted a Precautionary Incident Notification (PIN) Analysis
  - Reviewed and analyzed 238 files from 2 medical centers to determine pros and cons of current workflow and lag time in reporting to UC's third party administrator
  - Identified ways to increase efficiency and presented results and proposed recommendations to Risk Managers

- Conducted 4 systemwide analyses of event data on the following:
  - Patient Feedback
  - Medication Error
  - Serious Safety Events
  - Workplace Violence Benchmarking
- Organized, facilitated and presented at the Annual UC Event Reporting and Feedback Meeting. This was a 3-day event that included 25 presentations, attended by 40 staff from 5 health systems representing Risk Management, Quality Improvement and Patient Safety



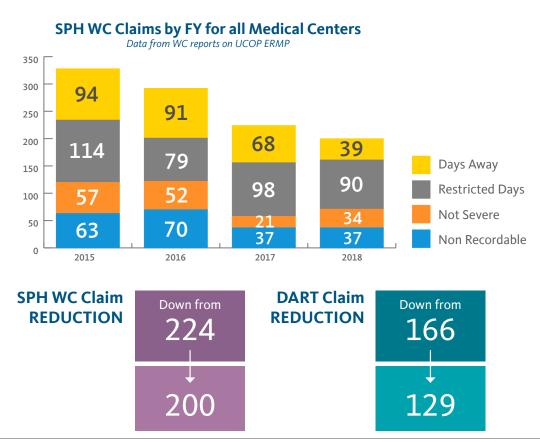


# SAFE PATIENT HANDLING & MOBILITY

The Safe Patient Handling & Mobility CoE assists UC Health Systems with ensuring compliance of required Safe Patient Handling programs and recommended Early Mobility programs. The CoE supports the development and implementation of best practices with respect to equipment use, training, assessments, and record keeping for both programs.

- Completed Safe Patient Handling & Mobility (SPHM) program reviews for each of the five health systems
- Completed current Cal-OSHA compliance report, which provided systemwide opportunities based on program review findings
- Developed a SPHM resource guide and poster for publication in the Medical Center Safety Spotlight
- Partnered with UC Risk & Safety Solutions to build a systemwide tool (Procedures) for completion of department-specific Safe Patient Handling Plans (a Cal-OSHA requirement)
- Provided an assessment and Cal-OSHA compliant work plan to a medical center, which has the potential to reduce workplace injuries related to patient handling
- Provided webinar trainings on new SPH Procedures tool for SPH plans

- Fiscal Year 2017-2018 injury rates for each medical center are monitored and used to identify best practices
- Injuries FY 2016-2017 to FY 2017-2018:
  - o Reduction of total SPH Workers' Compensation Claims from 224 to 200; DART Claim reduction 166 to 129



# **USP 800**

In September 2017, the USP 800 Center of Excellence (CoE) was formed with a focus 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.

# Specific CoE goals include:

- Develop consensus best practice recommendations for key challenges posed by USP 800 including:
  - Assessment of risk for hazardous drugs
  - Use of protective equipment, including respiratory protection
  - Response to spills
  - o Training for all hazardous drugs handlers
- Prepare a systemwide preparedness assessment of facility for USP 800 requirements

# Top 5 accomplishments during first year:

- 1. Established formal partnership with UC Chief Pharmacy Officers to work toward shared solutions to the main technical challenges posed by USP 800
- 2. Progressed toward a UC-wide approach to adding drugs to the Hazardous Drugs list and determining handling precautions (through assessment of risk)
- 3. Collaborated with UCLA School of Medicine (SOM) and UC Davis School of Veterinary Medicine to improve compliance in the two USP 800 affected programs that are not hospital-based
- 4. Collaborated with the Risk & Safety Training CoE to produce a USP 800 basic training class suitable for use UC-wide
- Collaborated with the systemwide Occupational and Employee Health Advisory Council (OEHAC) and the Health System EH&S Leadership Council to create shared solutions to key USP 800 challenges in the area of medical surveillance, spill response and respirator use

# **WELLNESS**

# **CENTERS OF EXCELLENCE:**

Smoke & Tobacco-Free WorkStrong



# **SMOKE & TOBACCO-FREE**

(CoE Completed 8/15/2018)

The Smoke and Tobacco-Free (STF) CoE coordinated the implementation of the systemwide UC Smoke and Tobacco-Free Policy. The CoE managed and administered systemwide STF Task Force activities and developed training materials, reference guides, communications and on-line content to support the UC Smoke and Tobacco-Free Policy.

- Held systemwide Task Force meeting with President Napolitano's Deputy Chief of Staff, Bernie Jones
- Finalized and distributed the UC Smoke & Tobacco-Free Dashboard, which provided a snapshot of policy activities and is used to measure improvements
- Developed a multi-year plan to establish and sustain UC's leadership in ensuring a tobacco and cannabis smoke-free environment systemwide
- Completed the UC Smoke & Tobacco-Free Post Policy toolkit
- Reviewed systemwide Smoke & Tobacco-Free Policy with the Policy Advisory Committee (PAC), Policy Steering Committee (PSC), Office of General Counsel (OGC) that was approved by President Napolitano
- Reviewed each UC location's policy to ensure compliance with American Non Smokers' Rights model
  policy and criteria: incorporation of marijuana, inclusion of electronic nicotine delivery systems, removal of
  exemptions other than research and ceremonial use
- · Represented UC at the Eliminate Tobacco Summit held by the University of Texas, Austin
- Collaborated with the California Smoke and Vape Free Scholarship Program

### **Metrics**

• The California Youth Advocacy Network (CYAN) received funding from the California Tobacco Control Program to conduct compliance interventions at UC locations and provide \$5,000 to each campus





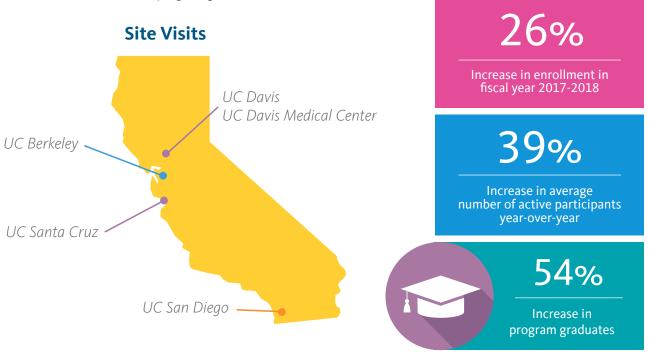


# **WORKSTRONG**

The WorkStrong program is designed to promote recovery and prevent future workplace injures 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.

- Completed and distributed the WorkStrong Coordinator Handbook
- Continued site visits to demonstrate UCOP support for the program, ensure standardization and continue to drive participation in the program

- Six site visits:
  - o Aug 2017: UC Santa Cruz
  - o Oct 2017: UC Davis Medical Center
  - o Nov 2017: UC Davis
  - o Feb 2018: UC Berkeley
  - o Apr 2018: UC San Diego
  - o Jun 2018: UC Santa Cruz
- Fiscal Year 2017-2018 results:
  - o 26% increase in enrollment
  - o 39% increase in the average number of active participants year-over-year
  - Average of 300 UC employees participating at any given time
  - o 54% increase in program graduates



# **RISK MANAGEMENT**

# **CENTER OF EXCELLENCE:**

Readiness

Unmanned Aircraft System Safety

**CALIFORNIA** 

# **READINESS**

In 2018, a new Center of Excellence (CoE) was established with a focus on UC readiness and resiliency. The Readiness CoE will provide support and guidance to three functional areas across the system:

- Mission Continuity
- Emergency Action Planning
- 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 new CoE is responsible for providing programmatic guidance to support the implementation of the UC Ready platform in all three functional areas, as well as providing training and technical support. The CoE will also provide leadership and council to the associated systemwide workgroups and monitor and support the completion of the Continuity Core Capabilities by each UC location.

# Specific CoE goals include:

- Development of onboarding materials for new administrators
- Development of best practices documents and outreach materials
- Identification and development of a systematic and documented process for requesting, prioritizing, and implementing enhancements to the UC Ready platform

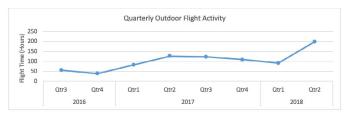




# **UNMANNED AIRCRAFT SYSTEM SAFETY (DRONES)**

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.

- Finalized and published the systemwide Unmanned Aircraft Systems Policy
- Published the UC Unmanned Aircraft Systems (UAS) Policy Guidance manual to explain the regulatory drivers, UAS activity review process, best practices and other relevant information on the establishment of a UAS oversight system
- Provided regular consultation and expertise with requests for UAS activities, consistent with applicable laws, regulations and policy requirements
- Served as a liaison for the Federal Aviation Administration (FAA) to file special use authorizations and waivers to enable UAS activity
- Developed material for: UAS flight training workshops, core competencies for UAS users, flight instructors
  and program managers, monitoring for low-altitude air traffic, specialized training for media use, and FAAapproved curriculum for night time flying operations
- Collaborated with UC ANR and UC San Diego for the UC Drone Camp at UC San Diego
- Conducted 17 UC campus visits for workshops, guest lectures, flight training, campus presentations and consultations



### **METRICS**

- Peak quarterly drone usage has increased by 262% since 2016
- All 10 UC campuses have now published their initial campus policy or procedures
- Conducted over 1600+ flight request reviews average processing time < 36 hours
- 5/10 UC campuses have UC-owned UAS for media teams
- 4/10 UC campuses have UC-owned UAS for construction, facility or inspection services
- All UC campuses have had UAS usage in construction projects

UAS Activity Purpose	% of Flight Time
Env. Research	36%
Ag. Research	28%
Eng., Dev.	16%
Media	8%
Class	5%
Other	7%

Location	% of Flights
On UC prop.	61%
Off UC prop.	39%

Risk Scale	% of Flights
Minor	55%
Low	26%
Escalated	9.5%
Moderate	6%
High	2.5%

Pilot Status	% of Flight Time
Staff	54%
Grad. Student	28%
Und. Std.	17%
Faculty	1%