



Continuing to Promote Careful Chemistry in the Post-Settlement Era

Presented By:
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University of California

Los Angeles Co. District Attorney Settlement

Signed in July 2012

Four Year Term - July 2012 to July 2016

Costs - \$24 Million (UCOP), Which Includes:

- ☐ Consultants to Develop SOPs
- ☐ Purchase of PPE for All UC Lab Workers
- ☐ Workers Compensation Costs
- ☐ Legal Fees
- ☐ Does Not Include Individual Costs to the 10 UC campuses



Cal/OSHA Settlement-Related Inspections

2014 - 2016 (3 Campuses/Year)

- ☐ 2014 - Berkeley, Irvine, & Los Angeles
- ☐ 2015 - Davis, San Diego, & Santa Barbara
- ☐ 2016 - Los Angeles, Merced, & San Francisco

Major Cal/OSHA Findings

- ☐ Fume Hood Flow Rate Issues
- ☐ Deficiencies in the CHP
- ☐ Gloves for Use with Pyrophoric Chemicals
- ☐ Unguarded Belts - Vacuum Pumps



Pre Cal/OSHA Inspection -Mock Inspections

Performed at 8 Campuses

Interviewed PI

Reviewed Lab Safety Binders, SOPs, Training Records

Management of Chemicals, Inventory, Storage

Housekeeping, Fume Hood, Electrical Safety

Interviewed Employees (Typically Grad Students)

Employee's Knowledge Regarding H&S



Findings from Mock Inspections

Management of Laboratory Health & Safety Program

- ☐ PIs have General Knowledge of H&S Program
 - ☐ Online Initial Lab Safety Fundamental Course
- ☐ Rely on Lab Manager/Grad Student to Implement the Lab Safety Program
 - ☐ Need to Improve “Succession Planning” for New Grad Student to Take Over Management of Lab Safety Program
- ☐ Lab Safety Binders Not Well Maintained
- ☐ Campuses with “Self-Inspection” Requirements- Not Conducted within the Required Timeframe
 - ☐ Majority of Lab Safety Designees Do Not Proactively Conduct Routine Visual Overview of Lab for H&S Issues
- ☐ “Safety Moment” Concept Not Implemented
- ☐ PI’s View on Health and Safety is Reflective on How the H&S Program is Implemented in the Laboratory



Findings from Mock Inspections

Training Deficiencies

- ☐ New Employee Orientation
- ☐ Initial & Refresher Training
- ☐ Training Documentation

Emergency Response

- ☐ Blocked Eyewash Shower/Shower/Eyewash Co-Located
- ☐ Where's the Spill Kit??
- ☐ Expired First Aid Supplies/Calcium Gluconate

Housekeeping/Sanitation

- ☐ Poor Housekeeping
- ☐ Blocked Aisle-way/Poor Egress/Tripping Hazards
- ☐ Storage of Food & Beverages/Labeling of Refrigerators & Microwaves



Findings from Mock Inspections

Standard Operating Procedures (SOPs)

- ☐ Incomplete SOPs/Lab Specific Information Not Included
 - ☐ Information Copied from SDSs
 - ☐ Lack of Process-Specific SOPs
 - ☐ No Upscale Limits
 - ☐ Missing PI Signature/Approval
- ☐ Too Many SOPs - Hundreds of Chemical Specific SOPs

Personal Protective Equipment

- ☐ Not Wearing Lab Coat/Safety Glasses/Gloves
- ☐ Storage of Used Lab Coats/Gloves in “Clean Area”
- ☐ Not Disposing of Use Gloves



Findings from Mock Inspections

Management of Chemicals

- ☐ Storage
 - ☐ Incompatible Chemicals
 - ☐ Storage On Floor
 - ☐ Peroxide Forming Chemicals
- ☐ Improper Labeling

Fume Hood Use

- ☐ Improper Fume Hood Use
 - ☐ Cluttered/Poor Housekeeping
 - ☐ Sash Position
 - ☐ Large Items in Fume Hood
 - ☐ Pipette Tip Jammed in the Alarm Mute Button
- ☐ Need for Remedial Fume Hood Training



Findings from Mock Inspections

Fire Safety

- ☐ Lack of 18" Clearance Below Fire Sprinklers
- ☐ No Annual Fire Extinguisher Training
- ☐ Flammable Liquids - Quantities/Size of Containers

Electrical Safety

- ☐ Use of Extension Cords/Daisy-Chaining of Power Strips
- ☐ Blocked Electrical Circuit Breakers
- ☐ Expired First Aid Supplies/Calcium Gluconate

Cal/OSHA Carcinogens

- ☐ No Initial Monitoring (Methylene Chloride, Benzene, etc.)
- ☐ 5209 Carcinogens (13 Carcinogens)- Lack of Regulated Area
- ☐ Chloromethyl Methyl Ether, alpha and beta Naphthylamines



Where Do We Go From Here (UCOP)

Improve Safety Beyond “Compliance”


Implementation Key Elements of APLU A Guide for Implementing a Culture of Safety in Our Universities

- ☐ EH&S Leadership Council
- ☐ Establish System-wide Faculty Advisory Committee
- ☐ UC President Approval


New Faculty Training on H&S Responsibilities



Management Commitment - UCI and UCD



Office of the Provost and
Executive Vice Chancellor
A message from Enrique Lavernia



To the Anteater community:

Universities nationwide have reflected on several tragic accidents that have taken place in recent years, including the death of a laboratory research assistant in a flash fire at UCLA and an explosion in a lab that severely injured a graduate student at Texas Tech University. In response, the Association of Public & Land-grant Universities and the Association of American Universities have called on institutions of higher education across the country to embrace a renewed commitment to improving the culture of safety for all academic research, scholarship and teaching.

Here at UCI, we have a longstanding tradition of excellence in our approach to safety. Several of our safety programs have won national awards, and we are considered a leader in UCI injury prevention. Our campuswide approach is further reinforced by the APLU's publication of [*A Guide to Implementing a Safety Culture in Our Universities*](#), which includes a suggested set of core institutional values, several of which have long been part of UCI's culture:

1. Safety is everyone's responsibility.
2. Good science is safe science.
3. Safety training and safety education are essential elements of research and teaching.

Safety experts know that there are few "freak accidents." Most workplace accidents are preceded by a number of near misses and precursor events, often unrecognized as such. In a safety-conscious environment, employees feel empowered to stop work processes that are unsafe and to immediately bring workplace risks to their supervisor's attention. In such an environment, everyone understands the importance of discussing workplace risks while planning jobs or activities and taking steps to mitigate those risks. This includes completing and documenting safety training.

UCI's Environmental Health & Safety department provides the framework and tools for campus faculty, staff and students to achieve their goals in a safe and responsible manner. Safety basics are available at www.ehs.uci.edu, as are custom tools developed for specific work environments. View the [Safety on Site \(SOS\) Program](#) to get started on integrating safety into your work environment.

Thank you for doing your part to make UCI safe for the entire campus community.

Sincerely,

Enrique Lavernia
Provost and Executive Vice Chancellor
Distinguished Professor of Chemical Engineering and Materials Science

Resources

- [Report an Injury/Safety Concern](#)
- [Lab & Research Safety](#)
- [Safety on Site](#)
- [Safety Training Self-assessment](#)
- [UC Learning Center](#)
- [EH&S Home Page](#)

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RALPH J. HEXTER
Acting Chancellor

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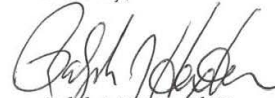
September 1, 2016


TO: All UC Davis Students, Staff and Faculty

A culture of safety in our work environments is embraced and expected at UC Davis. The most valuable UC Davis resource is its people, whose wellbeing and productivity is supported by a safe working environment. In 2008, UC Davis formalized its Principles of Safety, which are shown on the following page. Additional information on Research Safety programs and expectations at UC Davis can be found at <http://safety-services.ucdavis.edu/section/research>. We would like to take this opportunity to reaffirm our strong commitment to safety at UC Davis.

The desired culture necessitates that safety consciousness become integrated into all aspects of our lives, not just for time spent in the laboratory. Accidents cost time, money, and productivity, but most of all, accidents may cost lives. Our safety culture is a reflection of our actions, attitudes, and behaviors. We hope that you will share our desire to provide a safe place in which to work every day. In order for our safety program to be successful please join us and help each other in practicing safe work habits.

Sincerely,


Ralph J. Hexter, Ph.D.
Acting Chancellor


Kenneth C Burtis, Ph.D.
Acting Provost and Executive Vice Chancellor

Think Safe. Act Safe. Be Safe.

Where Do We Go From Here (UC Campus)

Some Chemistry/Biochem Depts./EH&S Offices are
“Worn Out” - But Positive H&S Gains

- ☐ Policies (Training, PPE)
- ☐ ‘Free’ PPE
- ☐ Lab Safety Fundamentals Training
- ☐ Technology Tools
- ☐ Increased Collaborative EH&S Visibility in the Labs
- ☐ Faculty-Lead Chemical/Laboratory Safety Committees
- ☐ Chemical Hygiene Officers
 - ☐ Most with Ph.D.s - Improved Credibility with PIs

Insure Continuity - Keep Implemented Systems Going

- ☐ Campuses that just Focused on Chem/Biochem Depts
Need to Expand to Other Depts.



Where Do We Go From Here (UC Campus)

Improving Technology Tools

- ❑ Chemical Inventory
- ❑ Enhancing the SOP Development Process
 - ❑ Focus on High Hazard Processes



Improve Reporting and Sharing of Lessons Learned and Near Misses



Where Do We Go From Here (UC Campus)

One Campus - Pendulum Has Swung Too Far

From PI Perspective:

- ☐ Safety is Not Their Mission
- ☐ To Conduct Research Safely Is Their Mission

Looking for Better Collaboration and Solutions to Access the Risk Appropriately



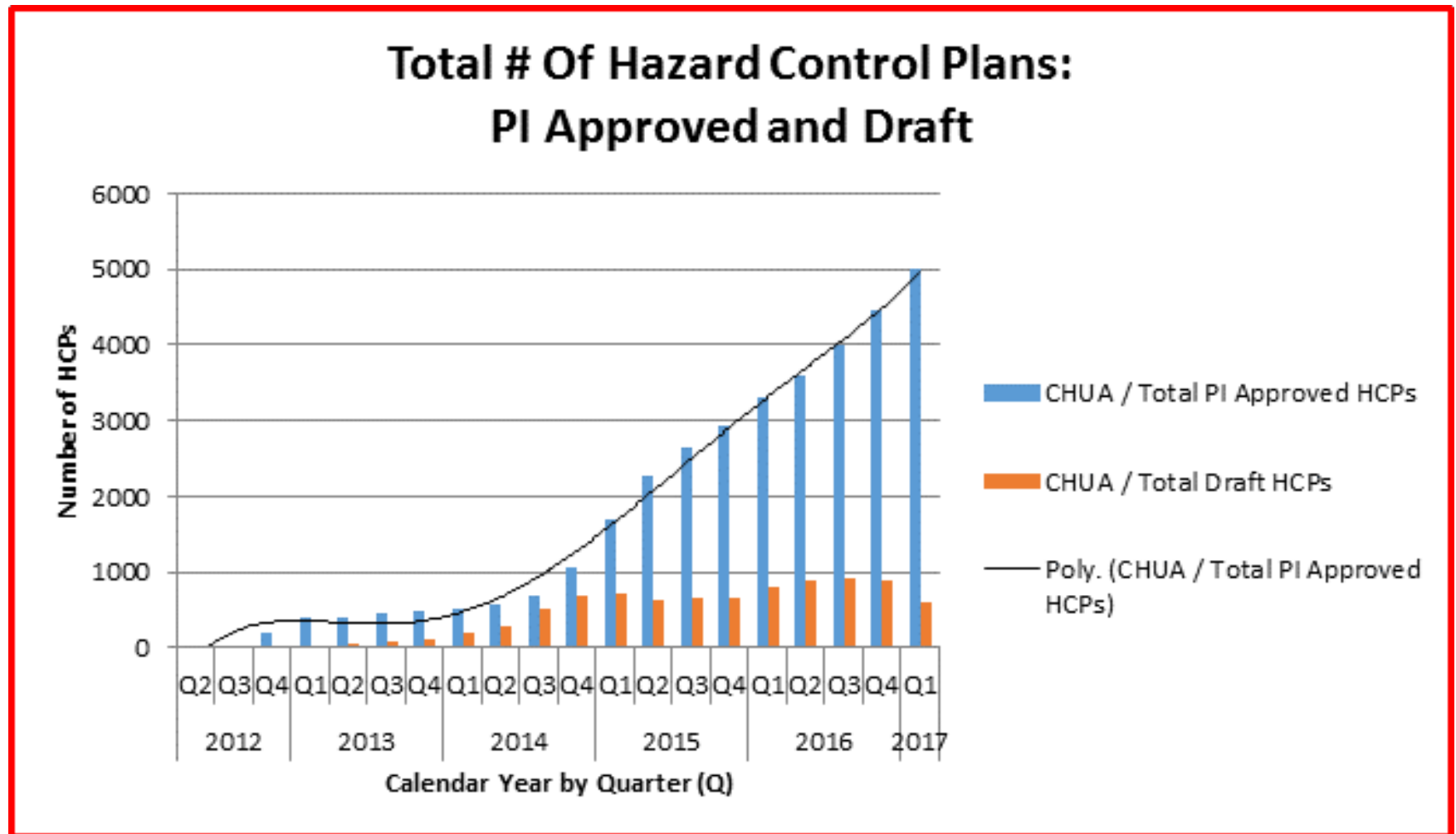
Further Thoughts on Impacts & Progress

Reiterate - the positive gains ARE evident

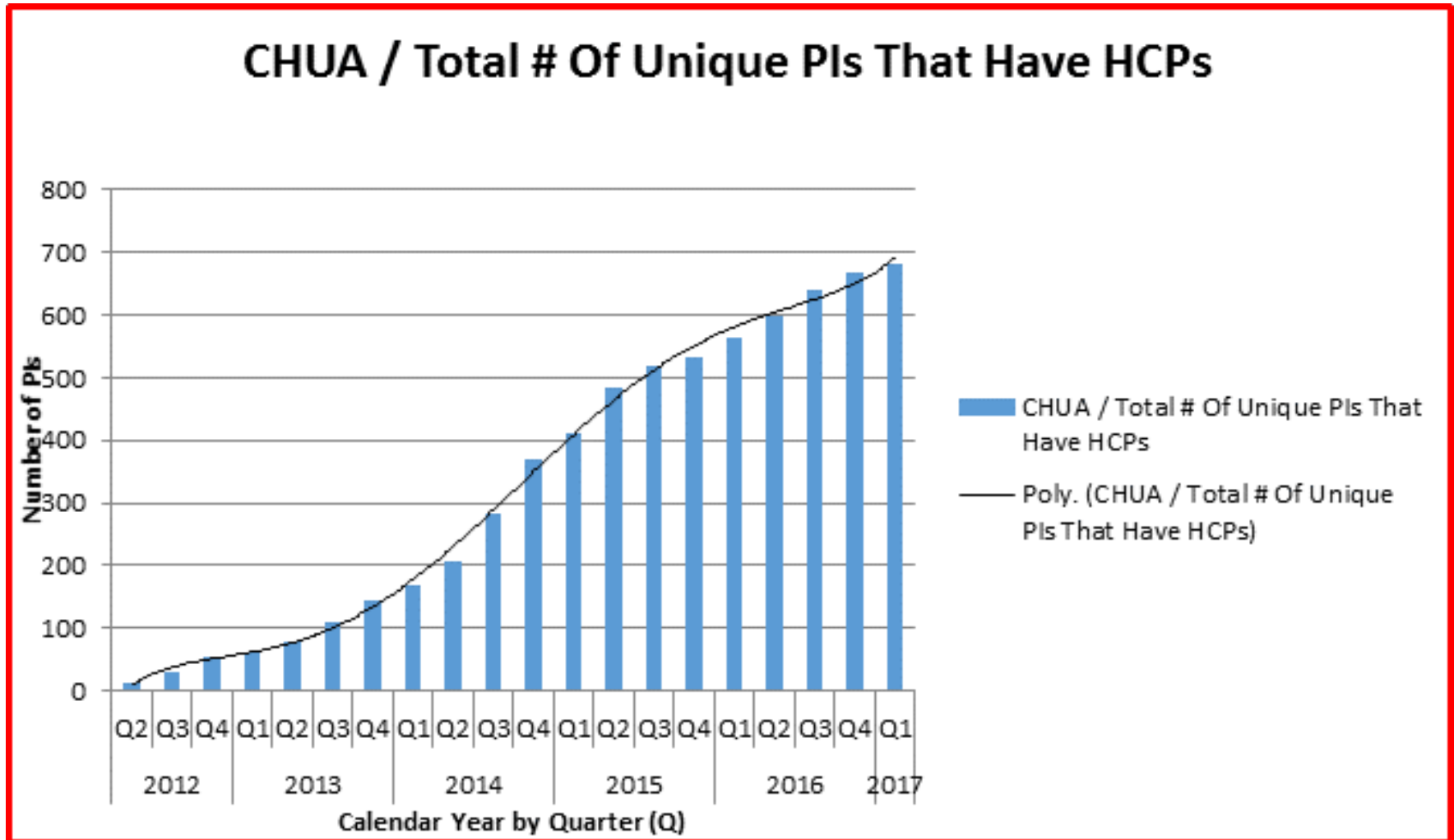
- ☐ Engagement and Clarification of Responsibility continues
- ☐ Appropriate Tools and Resources Continue to Mature
- ☐ Faculty Leadership and Ownership are evident
- ☐ Chemical Hygiene Officers
 - ☐ Ph.D.s have improved communication but...
 - ☐ EHS Staff that engage faculty, staff, & students are being welcomed and appreciated
- ☐ ACS Board, staff, divisions, local sections and committees have helped move “safety” to a fundamental tenant of the profession and continue to support improved resources and leadership



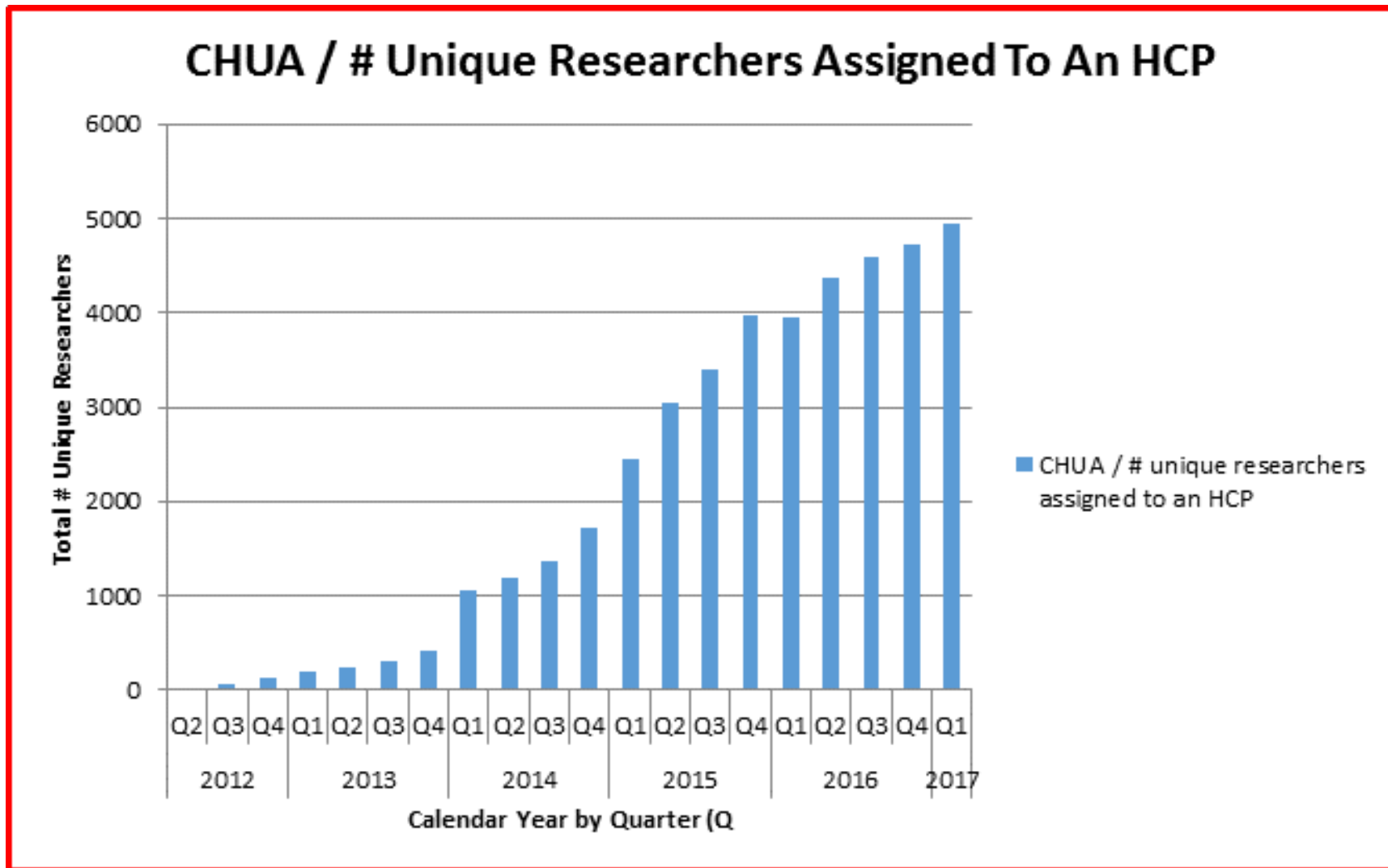
PI Approved “HCPs” (UCSD)



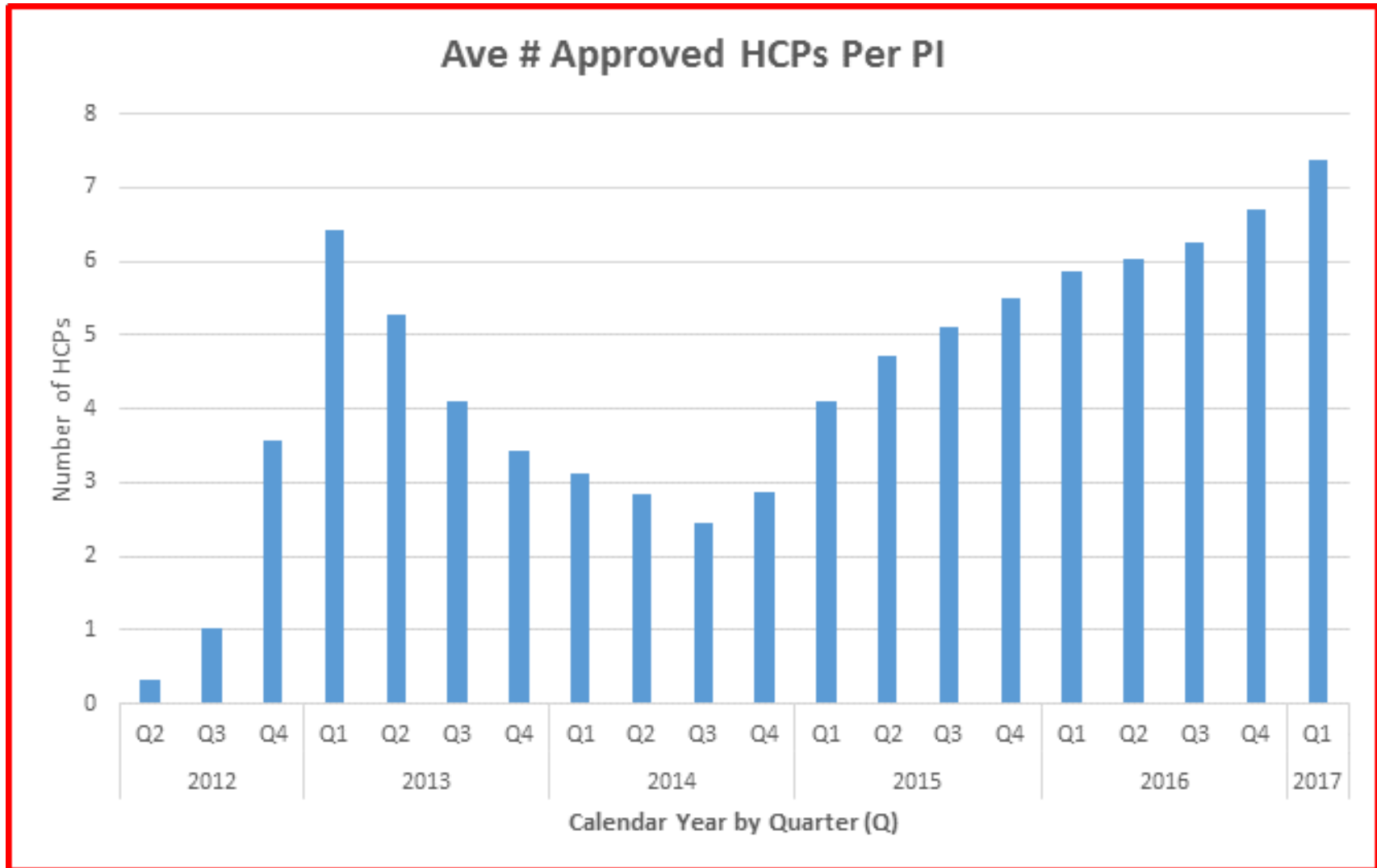
UNIQUE PI Adoption of online HCPs (UCSD)



UNIQUE Research Assignments of “HCPs” (UCSD)



HCP's per PI (UCSD)



HCP use frequency (UCSD)

