

RESEARCH ADVISORY BOARD
November 20, 2018 8:30-10:00 a.m. Medical Sciences Building: S-30

AGENDA

1. Preview of work underway by the Research Space Working Group Lindsey Criswell
(8:30 – 9:15am)

2. Research Supply Chain Mgmt.: Ultra low temperature storage/freezers project Dean Shehu
(9:15 – 9:35am)

3. RASP report Michael Nordberg
(9:35 – 9:50 a.m.)

4. **2019 meeting schedule:** Change recurrence from 3rd Tuesdays to 2nd Tuesdays from 830 – 10:00am?

Remaining 2018 Meetings:

- November 20
- December 18

RESEARCH ADVISORY BOARD (RAB)

November 20, 2018 8:30-10:00 a.m. Medical Sciences Building: S-30

Minutes

Present: Lindsey Criswell, John Ellis, David Erle, Clarice Estrada, MC Gaisbauer, Julene Johnson, Mounira Kenaani, Jim Kiriakis, Gretchen Kiser*, Stephen Lazarus, Georgina Lopez, Wallace Marshall, Sindy Mellon, Theresa Moeller, Suzanne Murphy, Michael Nordberg, Christine Razler, Jon Rueter, Elizabeth Sinclair, Brian Smith*, James Sorensen*, Matthew Springer*, Paul Volberding*. Dean Shehu, John Fahy (guests). Irene Broderick (staff). *=by phone

1. Preview of work underway by the Research Space Working Group** Lindsey Criswell/John Fahy

Lindsey Criswell and Dan Lowenstein charged the Research Space Working Group (RSWG) with developing guiding principles for research space at Parnassus Heights (PH). Co-chaired by John Fahy and Tamara Alliston, the RSWG set out to catalog current space across UCSF's large footprint, and give context between the Parnassus and Mission Bay (MB) sites. The RSWG found:

- Most research labs are on the south side of Parnassus in the Saunders Court area; this placement should remain as the HSIR & IRM buildings are there.
- 17% of buildings at Parnassus Heights (PH) have not been renovated & the only new PH building is the IRM; a meeting is scheduled with Bruce Wintroub about this and that most all building is happening at MB.
- The hospital endowment has had a positive effect at PH and there is optimism for great opportunities to build around the new hospital. This could be transformative.
 - 40% of UCSF researchers are at PH with is equal representation of basic, clinical researchers at PH and MB.
 - PH Principal Investigator Research Productivity:
 - Indirect Cost Return/Assigned Square Footage at PH is \$153 relative to \$177 at MB; the 14% difference in ICR/ASF is accounted for by the dated PH research space.
- Parnassus research leans toward senior investigators, leaving an imbalance in the mix of junior-senior faculty; the result is that many new recruits go to MB. This imbalance has led to unease in the PH research community. PH must be designed and reinvigorated with intentionality.
- UCSF has more than 200 faculty and 580 Clinical Research Coordinators. 40-50% of UCSF funds received are research dollars; UCSF clinical research is under-developed. Although there is no research space at the MB hospitals, co-locate academic, research, and clinical space would be beneficial; the Medical Center leadership is receptive to the idea of imbedding academic space in the hospital/clinical areas.
- Coordinators should have designated space (for coverage analysis, Bill of Rights, etc.) and support services should be available to faculty around the hours the faculty work: 6am– 10pm; perhaps create an Overnight Stay Clinical Research Unit for researchers when support units are closed.
- Guiding principles & recommendations include mobility between PH & MB; modernizing space; and building an allowance for 20% growth rate. Research programs should focus on PH strengths: (diabetes, liver, transplant, etc.); buildings should be intentionally designed for connectivity and community.
- Centers, such as the Clinical & Translational Science Institute, and the Investigational Drug Pharmacy, serve as a core surrounded by investigator led disease focuses. The RSCG recommends breaking these into 10-12 centers that will naturally coalesce.
- Many investigators now conduct research in data science: electronic medical records, Co-Labs, Computational & Engineering Research; all of these put demands on research space.

2. Research Supply Chain Mgmt.: Ultra low temperature storage/freezers project**

Dean Shehu

The frozen samples storage initiatives were introduced in December 2017. The project is focused on ultra-low temperature freezers (ULT) due to their complexity, the lack of base information surrounding them, and the different storage needs they require. The information gathering phase is 50% complete at Parnassus: to date 100 unaccounted for freezers have been located and another 200 are expected.

There are differences in electric and back-up power across buildings; 20% of freezers are not on back-up power and seismic bracing is an issue. Vapor phase liquid nitrogen freezers could present alternatives to ultra-low temperature freezers though they are expensive.

The value of a freezer's contents ranges from \$500K, to millions of dollars, to being completely irreplaceable. As part UCSF's ULT Freezer Cleaning Service, labs are provided with an ULTs, tools and logistics. Currently in the feasibility testing phase, UCSF is offering labs REDCap inventory templates for every brand of -80° freezer. The next step is to create business plan and disaster readiness plan.

UCSF is exploring expansion options; there are discussions in place to secure space at the Blood Centers of the Pacific, and to double capacity at Oyster Point. Discussions are also underway with three commercial storage suppliers.

In the event of a power outage, UCSF will divert power to patient needs after three days, not to research freezers. UCSF's BearBuy is a transaction management system and it is difficult to communicate with people through it.

3. RASP report

Michael Nordberg

The UCSF Research and Administrative Space Policy (RASP) Working Group developed and proposed financial metrics for evaluating campus space utilization and productivity. The RASP looked at many things, such as Indirect Cost Return (ICR), and Assigned Square Footage (ASF), and reallocation of space if pending (vacant) in excess of two years. Proposed metrics: ICR/ASF=health index, percentage of space pending by schools, Assigned Square Footage per occupant; and Scientific / Educational Productivity. The RASP looked at differences between wet and dry research space and investigated the option of charging for space. Targets are set based on a historical data.

Next steps: The school deans are responsible to advise departments that they must keep Archibus data current, and that non-occupied space locations may be re-assigned. Further, if a school consistency has non-occupied space, it may be taken away and re-assigned to a different school. There is a great quantity of unused space at UCSF. The space committee must now come to agreement on how the campus as a whole should move forward on these metrics

- 4. 2019 meeting schedule:** Change recurrence from 3rd Tuesdays to 2nd Tuesdays from 830 – 10:00am? Agreed.

**Contains excerpts from PowerPoint; see PowerPoint for detail.



University of California
San Francisco

Research Space Working Group

Co Chairs

Tamara Alliston
John Fahy

Committee

Robert Blelloch
Jason Cyster
Andrei Goga
Julene Johnson
Thomas Lang
Janel Long-Boyle
Shaeri Mukherjee
Rushika Perera
Art Weiss
Carol Dawson-Rose
Christine Nguyen
Maria Dall'Era
Jeffrey Lotz

Lindsey Criswell

Support

Cara Fladd
Sharon Priest
Joy Glasier

Research Space Working Group (RSWG)

- **Research Space Working Group (RSWG):** A committee reporting to campus leadership as part of the Comprehensive Parnassus Heights Plan project.
- **RSWG Charge:** To develop guiding principles for research space at Parnassus Heights.

Co Chairs Tamara Alliston John Fahy
Committee Robert Blemloch Jason Cyster Andrei Goga Julene Johnson Thomas Lang Janel Long-Boyle Shaeri Mukherjee Rushika Perera Art Weiss Carol Dawson-Rose Christine Nguyen Maria Dall'Era Jeffrey Lotz
Lindsey Criswell
Support Cara Fladd Sharon Priest Joy Glasier Maryam Farshad



Review of current research space at PH



UCSF-PH is a successful and impactful research campus

PH Researchers: 40% of UCSF researchers at PH

- Similar representation of basic, clinical, etc. PIs at PH and MB (based on survey data)

PH PI Research Productivity:

- ICR/ASF at PH is \$153 relative to \$177 at MB
- 14% difference in ICR/ASF accounted for by the dated PH research space

UCSF-PH Research is tilted toward senior investigators

PH PI Recruitment and Retention:

- Healthy academic research center has a balance of junior and senior investigators: 33% Full, 33% Associate, 33% Assistant +/- 10%.
- PH: 55% Full, 22% Associate, 23% Assistant.
- New research space is needed to invigorate the PH research enterprise, and to recruit and retain new faculty

Clinical Research at UCSF

1. A large research enterprise
 - More than 200 faculty
 - 580 clinical research coordinators
 - a large portion of UCSF's research funding

2. Under-developed community
 - Investigators and coordinators, data managers and statisticians do not know each other or interact
 - Poor advocacy to generate research resources from campus leadership.
 - Inadequate space.
 - Inadequate support from the medical center.

Future Research Space at UCSF PH - **Guiding Principles**

- 1. World-class biomedical research campus** - a magnet science community.
- 2. Blend of research activities** - basic, clinical, translational - not dominated by any research category or program and with each research activity populated by a **critical mass** of faculty.
- 3. High quality shared research resources**, including central research laboratories (Co-Labs), etc.
- 4. Integration with clinical enterprise** that takes advantage of the research and discovery opportunities provided by new PH medical center.
- 5. Inspiring interaction and research space** intentionally designed to provide:
 - high quality research space
 - co-location of collaborating researchers
 - high quality shared space for community, collaboration and communication
- 6. Secure space allocation that accommodates dynamic needs** and opportunities, programmatically and scientifically.

Future Research Space at UCSF PH - Recommendations

1. Re-invest in the UCSF research campus at PH:

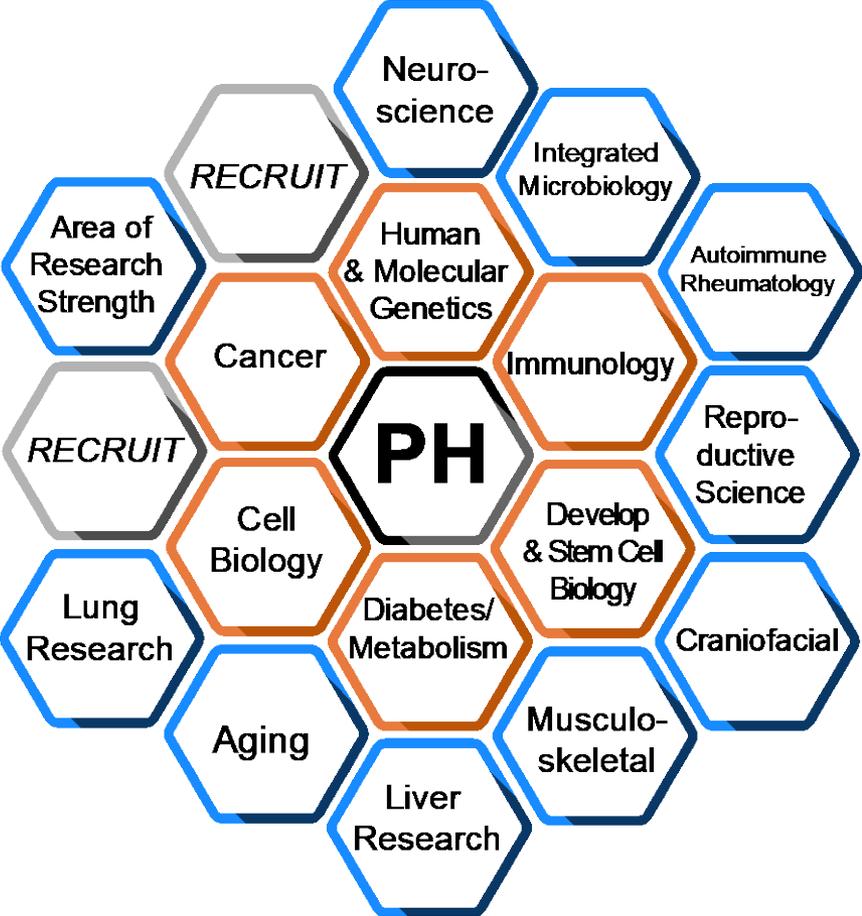
- UCSF should re-commit to the research enterprise at PH and invest in it. UCSF should modernize the 559,000 ft² of space that is currently allocated to research and plan to construct an additional 110,000 ft² of research space to allow for 20% growth in the research enterprise in the next 20 years

2. Focus research programs on areas of historic PH strengths and to take advantage of the new hospital and clinics: The programmatic focus of PH research should..

- build on existing research strengths at PH, complement research activities at Mission Bay and other UCSF campuses;
- take advantage of co-location with the new hospital, and allow for a critical mass of investigators in each research area.
- re-organize space for research programs in basic science, and expand the research space for clinical research and for data science

3. The research buildings should be designed for connectivity and community.

Basic Research



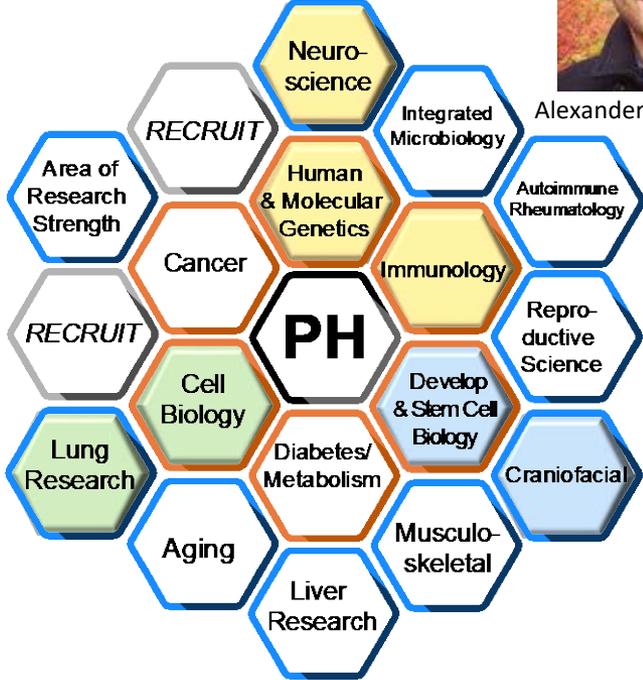
Basic Research



Yin Shen, PhD



Alexander Marson, MD, PhD

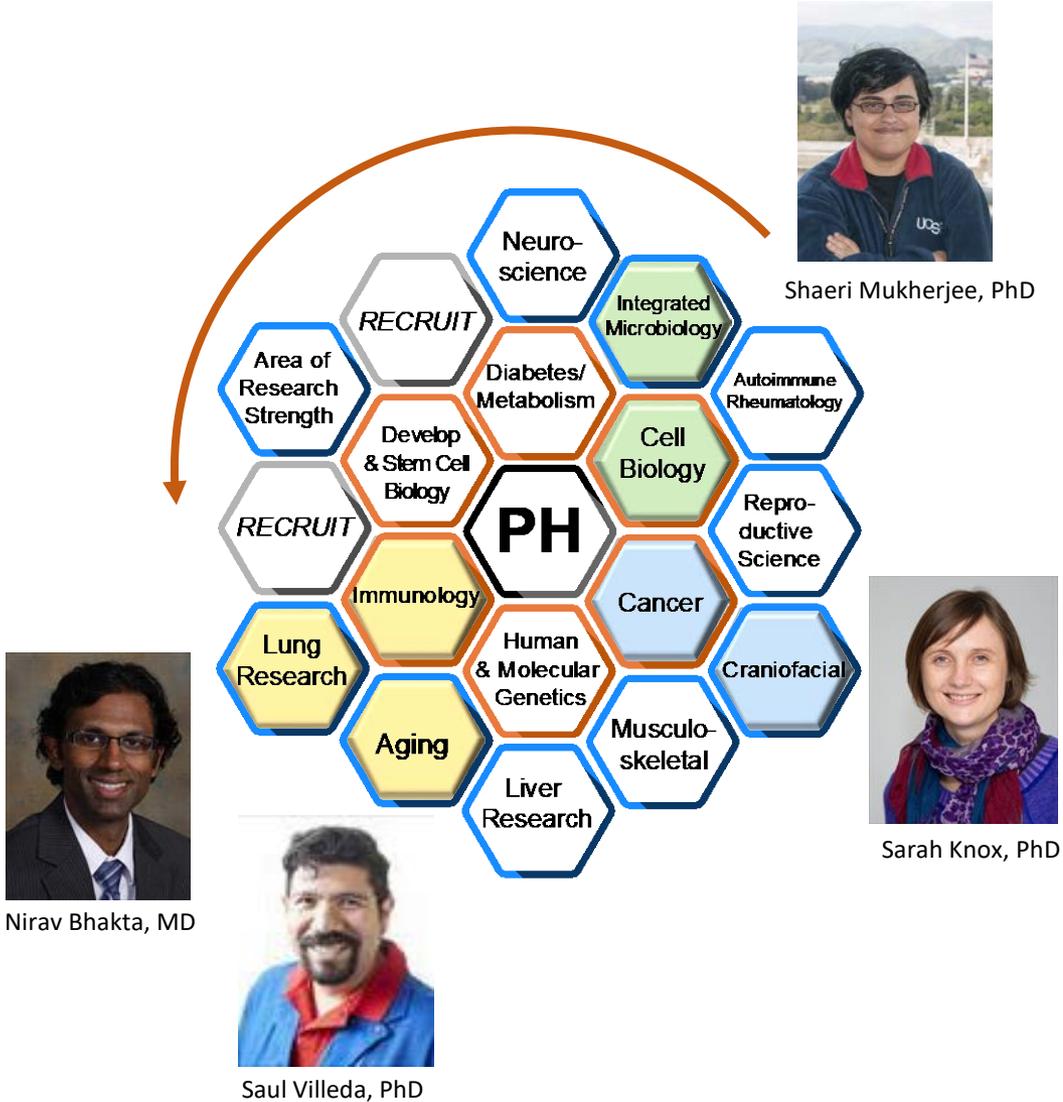


Tien Peng, MD

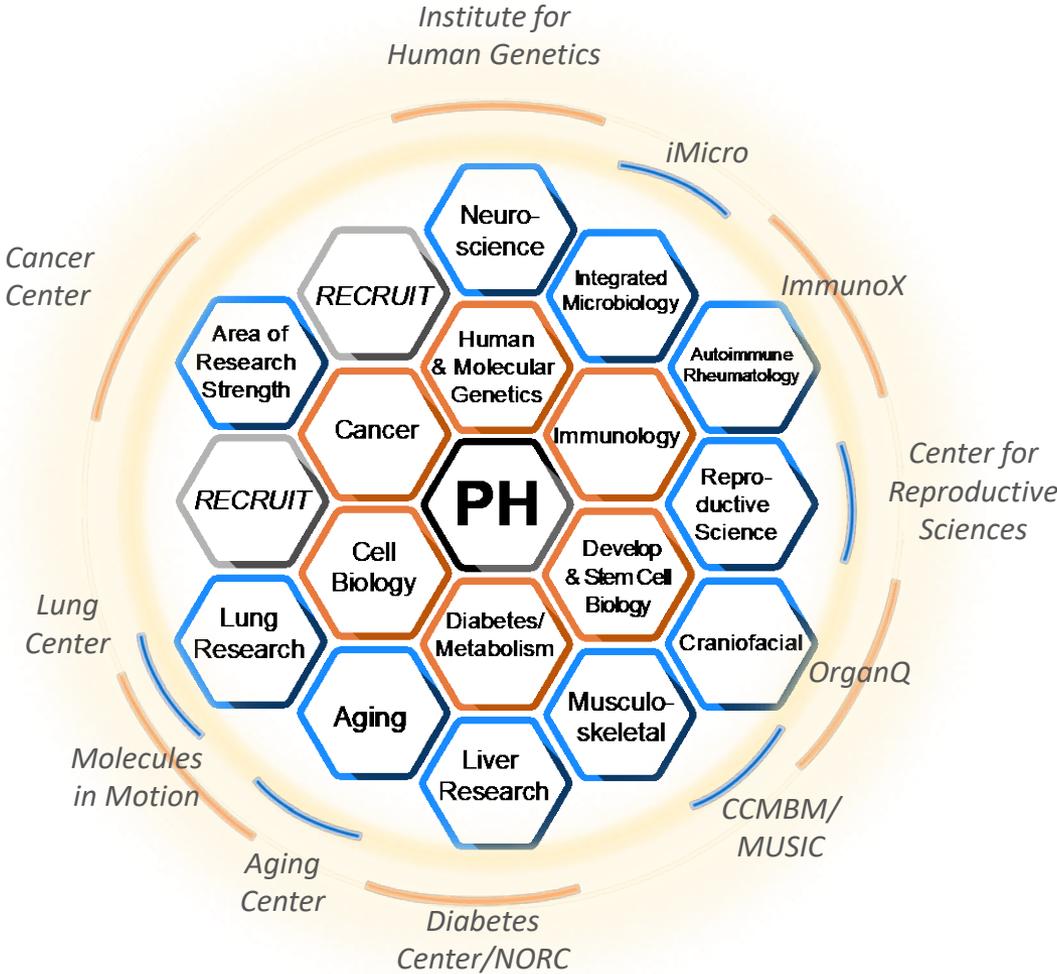


Sarah Knox, PhD

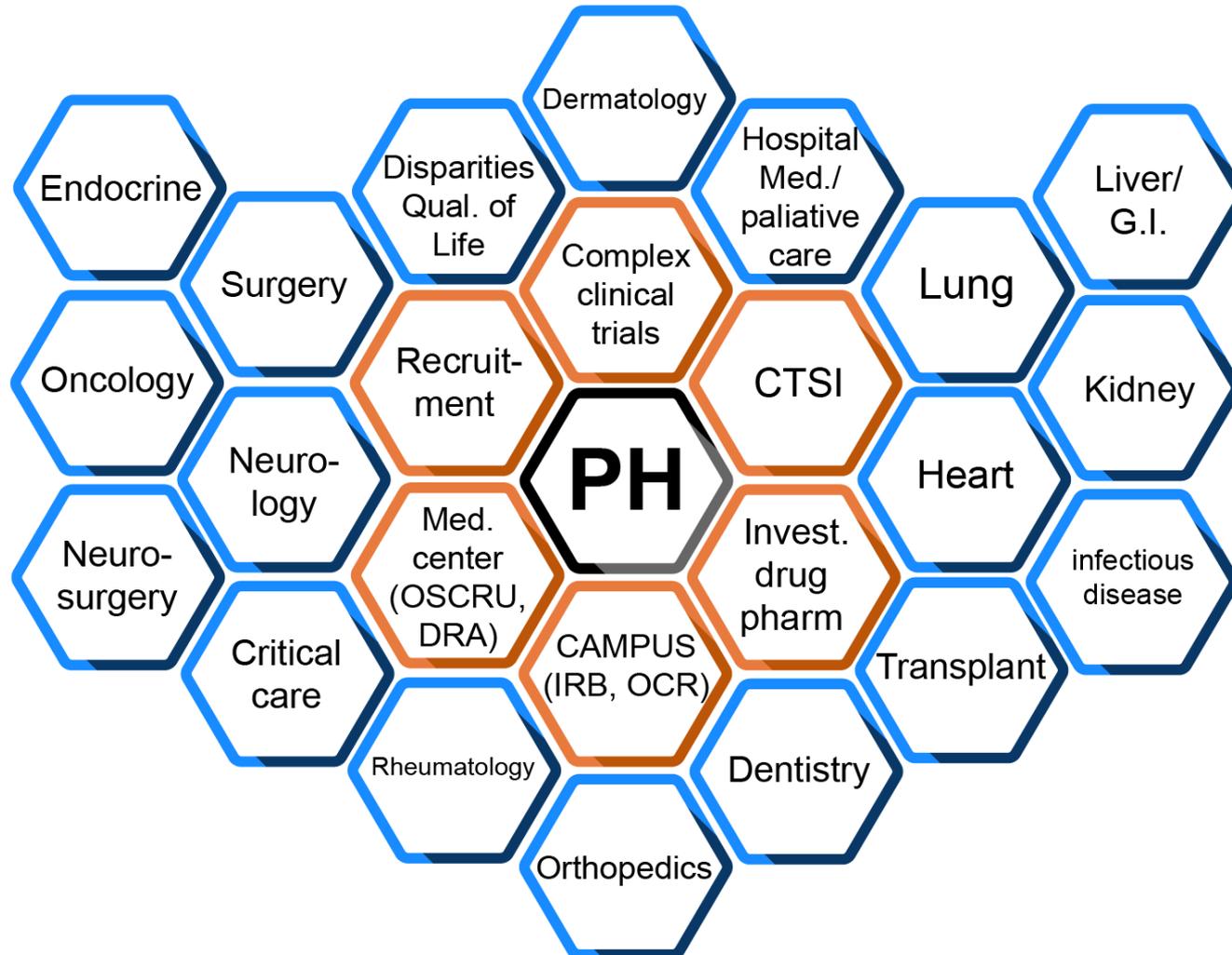
Basic Research



Basic Research



Clinical Research

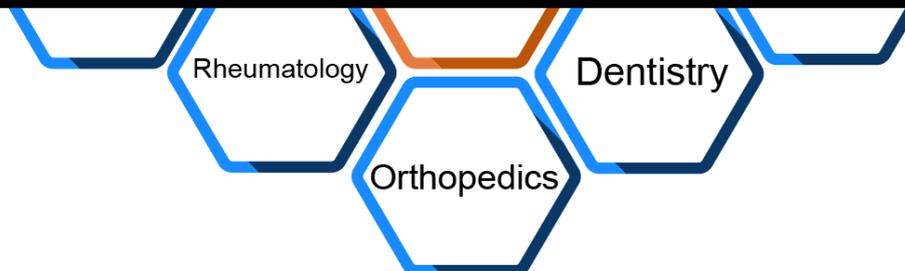


Clinical Research

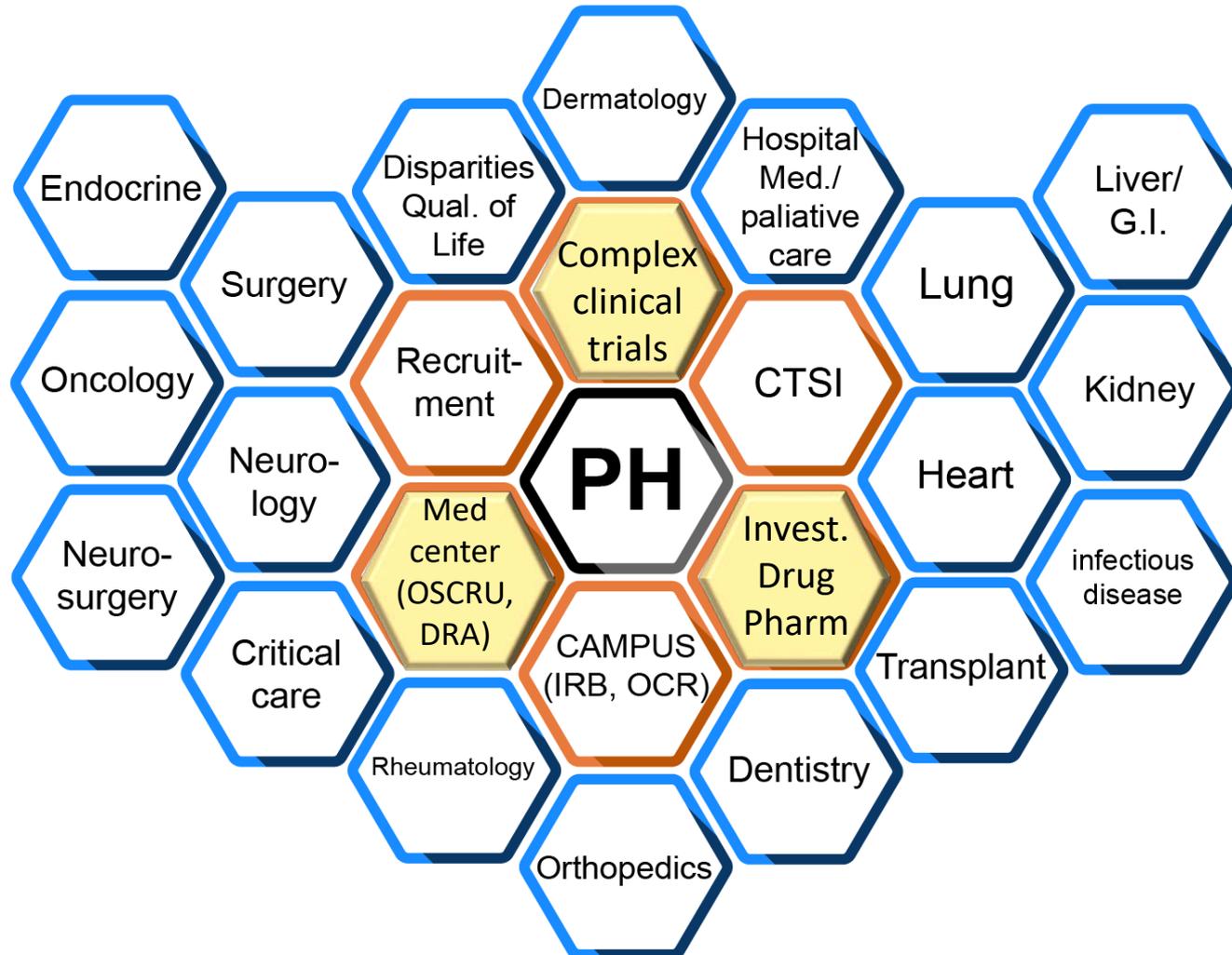


Proposed Medical Center Resources for Clinical research.

1. Designated Research Areas (DRAs)
2. Overnight Stay Clinical Research Unit (OSCRU)
3. Investigational Drug Pharmacy (IDP)



Clinical Research



Designated Research Areas (DRAs) in the Hospital and Clinics

- Embedded within the clinical research areas of the hospital and clinics:
 - ~ 200asf areas in large clinics, on hospital floors, in urgent care clinics, the emergency department, and surgical/perioperative areas.
- Allow CRCs to store equipment and supplies
- Enable CRCs to interact privately with research participants:
 - Recruitment
 - Consent, questionnaires
 - Collection of biosamples

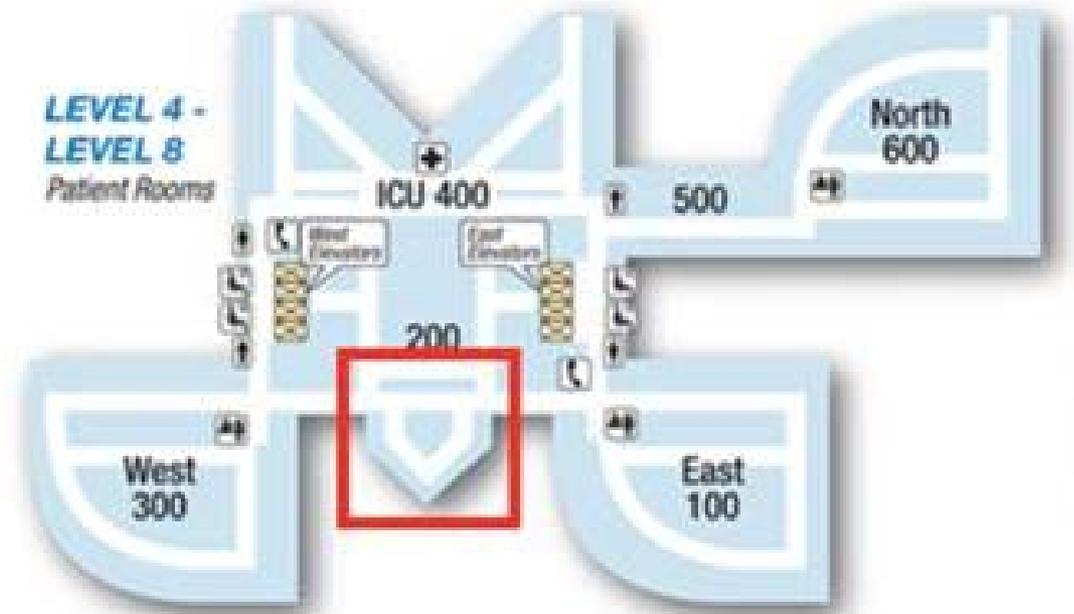
CONVERGENCE

**SUPPORTING/INTEGRATING
EDUCATION AND RESEARCH INTO
CARE ENVIRONMENTS**

SHARED FACILITIES

UCLA RONALD REAGAN MEDICAL CENTER

- SHARED CLINICAL RESEARCH AND TEACHING HUBS ON NURSING FLOORS



UCLA Ronald Reagan Medical Center



Overnight Stay Clinical Research Unit (OSCRU)

Currently: “all beds are research beds”

→ Suboptimal

- expensive

- potential for protocol violations

(because of reliance on clinical care vs. research personnel for study procedures)

Proposal:

- 5-10 room OSCRU designed with negative pressure, observation ante rooms, and technologies for monitoring research participants.

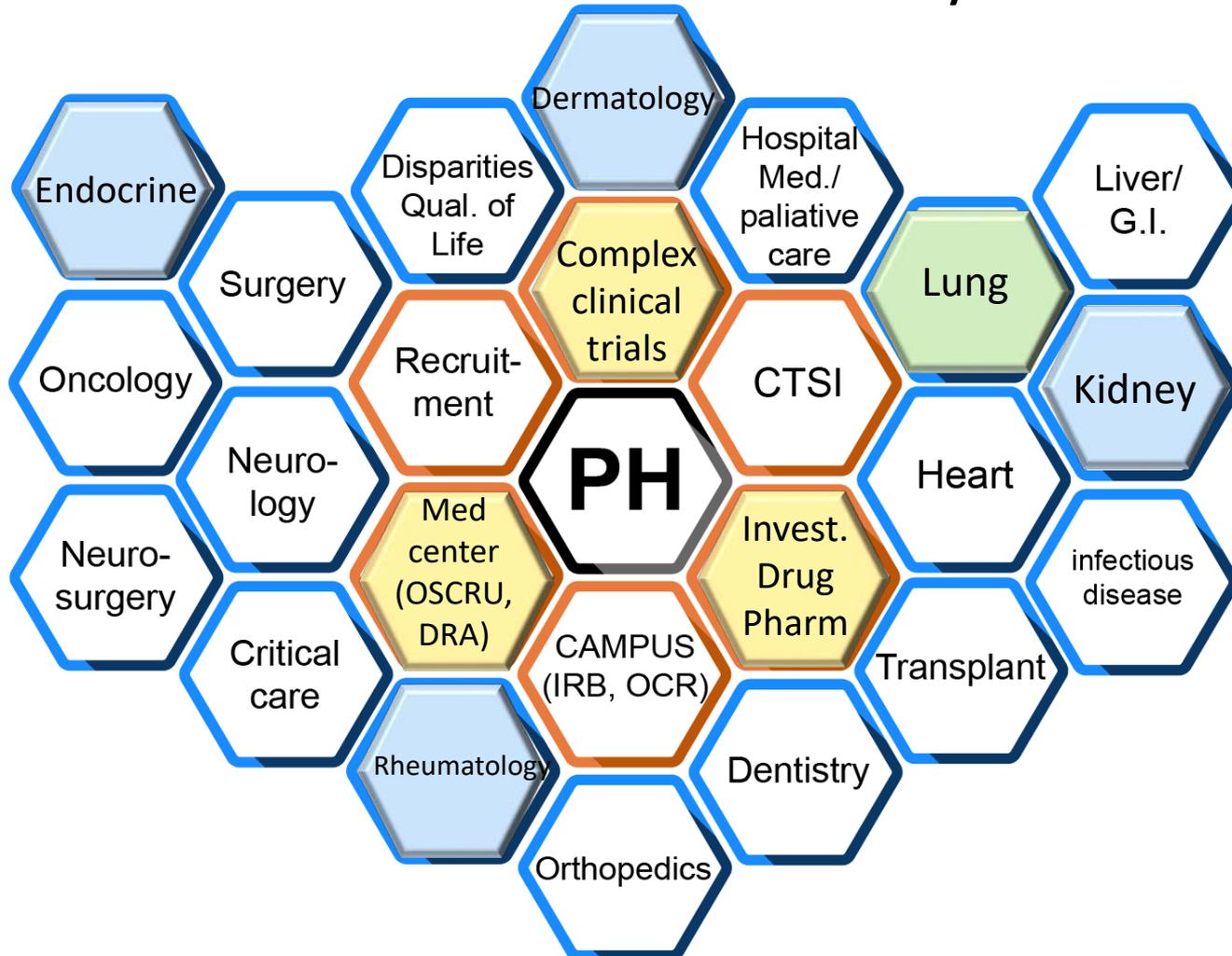
- necessary and valuable research resource for clinical investigations, including for clinical trials of novel therapeutics.

Centralized Clinical Research Resources

1. Designated Research Areas (DRAs)
2. Overnight Stay Clinical Research Unit (OSCRU)
- 3. Investigational Drug Pharmacy (IDP):**
 - IDPs have competencies in the provision of care for research participants
 - IDPs are aware of regulatory requirements that govern clinical research
 - Need for pharmacy operations required to support evolving and complex clinical research enterprise

Clinical Research

- Pulmonary Clinical Research Center
- Airway Clinical Research Center



- Multidisciplinary Clinical Research Center

Clinical Research Units (CRUs)

Currently:

~ 15,000 asf is assigned to patient-facing clinical research units at PH (2-3% of the non-hospital research space at PH).

Proposal:

Assign 60,000 asf to increase the number of CRUs from 4 to 15.

Clinical Research Units (CRUs)

Currently:

~ 15,000 asf is assigned to patient-facing clinical research units at PH (2-3% of the non-hospital research space at PH).

Proposal:

Assign 60,000 asf to increase the number of CRUs from 4 to 15.

- CRUs are envisaged as 2500-5000 asf spaces that accommodate the program needs of 5-10 PIs (*coalition*) who do patient-facing clinical research, led by a *champion* who directs the space.
- Each CRU will be customized to meet the specific needs of the specialized research groups that occupy them.
- Ideally, each CRU linked to bench research units to form research neighborhoods with a specific disease or organ focus.

Informatics & Engineering

1. Computer science

- Data analysis from sensors and images
- Machine Learning/AI

2. Genome Engineering

3. Bioengineering

- Digital tools and sensors
- Devices, Fabrication

4. Biotherapeutics

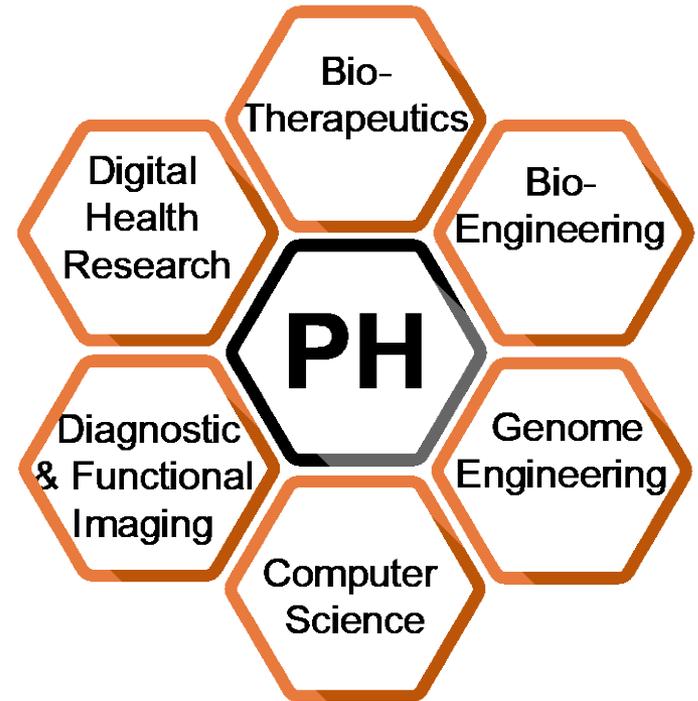
- Drug delivery
- Biomaterials

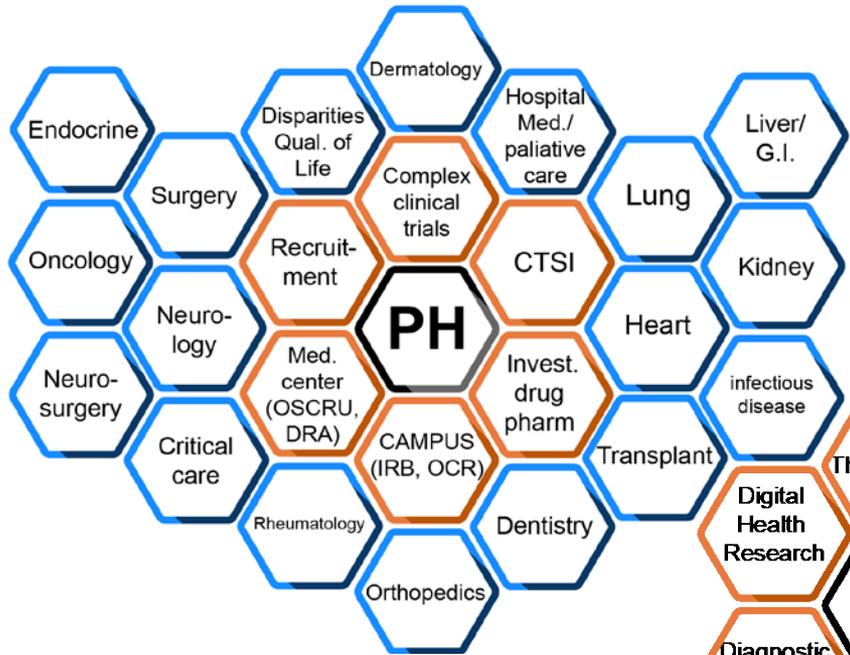
5. Digital Health Research

- EMR research
- Clinical informatics
- Cohort-based clinical research

6. Diagnostic and functional Imaging

- Human/Clinical
- Preclinical

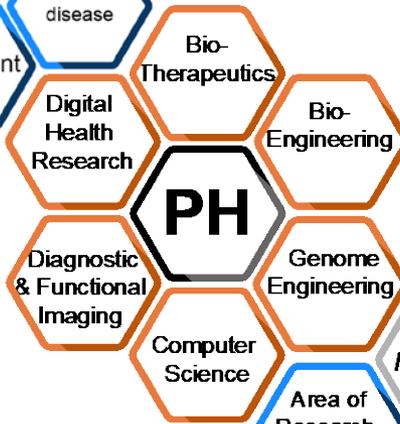




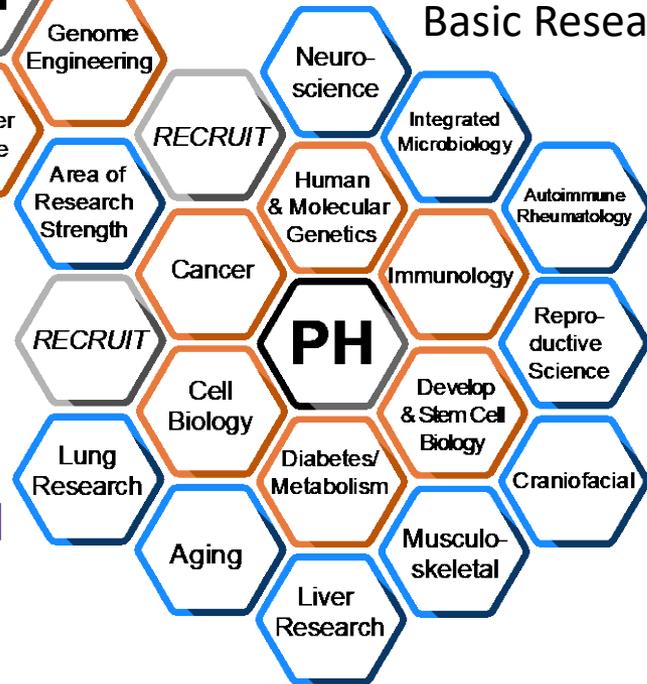
DIGITALHUB

Clinical Research

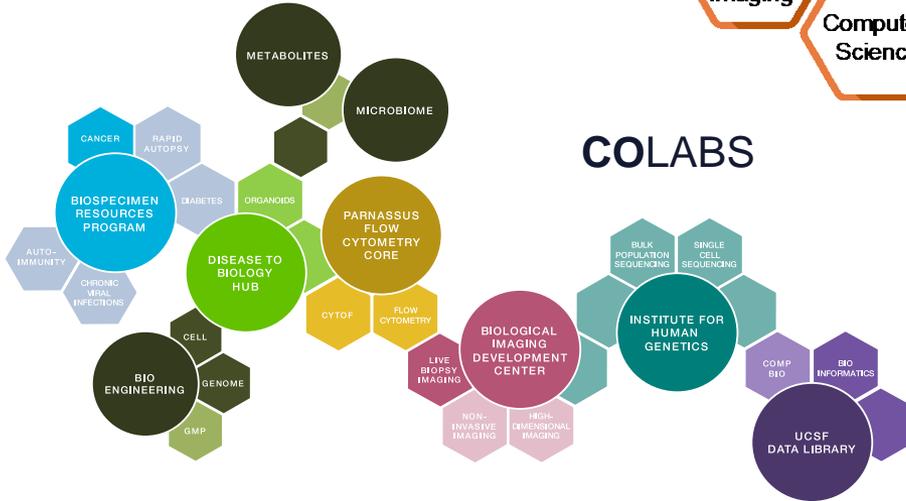
Computational & Engineering Research



Basic Research



COLABS



Ultra-low Temperature Storage Strategy for UCSF

Dean Shehu

Research Commodities Manager | Strategic Sourcing
Supply Chain Management

UCSF

2/15/2019

Supply Chain Management

Background

**Frozen samples storage initiatives introduced by Greg Macway,
Director Supply Chain Management on December 5, 2017**

- Exploratory work in research assets management
- Sample storage management
- Campus wide cold storage solutions

Project Overview

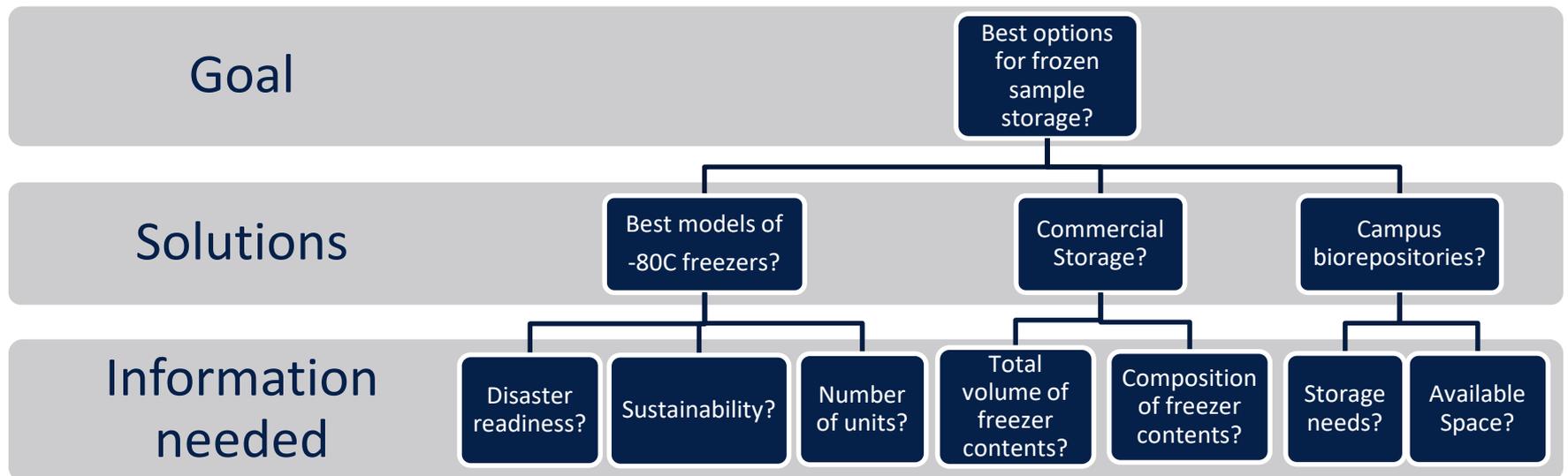
- **Sponsors:** Joe Bengfort (Finance), Brian Smith (Research)
- **Project Lead:** Dean Shehu (Strategic Sourcing)
- **Steering Team:** Jim Hine (SCM), Andrew Clark (SCM), Brian Smith (Research), Elizabeth Sinclair (RRP), Scott Vandenberg (Biospecimen Resource Program), Gail Lee (Sustainability), Salman Mahboob (AIDS Specimen Bank), Sandy DeVries (Cancer Specimen Bank)

Project Scope

In Scope	Out of Scope
-80 ULT Freezers (initial effort)	Under-counter freezers
LN2 freezers	Upright freezers incapable of cooling to -80°C

Evolution of frozen storage project

Not enough known about the current state



Low-temp storage sub-projects

Information

Countermeasures	Description	Start-End (FY)
1) Campus-wide -80C freezer Inventory	Inventory of all ULT freezers at UCSF	S: Q1 18/19 E: Q3 18/19
2) Backup power assessment	Determine capacity, by building, to add additional red plugs	S: Q2 18/19 E: Q4 18/19
3) Basic research freezer contents analysis	Freezer contents survey: 30 labs	S: Q2 18/19 E: Q3 18/19
4) Biospecimen banks contents analysis	Freezer contents survey	S: Q2 18/19 E: Q3 18/1
5) Fusion™ freezer beta test	Evaluate new safe and sustainable storage freezer	S: Q1 18/19 E: Q2 18/19
6) Freezer monitoring systems	Identification of best value system by Facilities	S: Q1 18/19 E: Q2 18/19

Initiatives

7) Freezer cleaning service	Feasibility analysis of UCSF-managed freezer cleaning service	S: Q1 18/19 E: Q3 18/19
8) ULT storage expansion	Evaluate opportunities to expand biorepository space	S: Q2 18/19 E: Q3 18/19
9) Biorepository data systems	Integration with LabVantage and RedCap software	ongoing
10) Freezer Replacement	Replace energy inefficient freezers	ongoing

On track

Timeline at risk

Will miss deadline

Freezer inventory data capture

LOCATION					
DEPT NAME	PI / LAB NAME	CAMPUS LOCATION	BUILDING NAME / FLOOR	ROOM NAME	ROOM NUMBER
PSYCHIATRY	WEISS LAB	PARNASSUS	LPPI / 1 FL	EQUIP. ROOM	LP-A120
PSYCHIATRY	VOLGMAIER LAB	PARNASSUS	LPPI / 1 FL	EQUIP. ROOM	LP-A120

EQUIPMENT INFORMATION							
UCSF ASSET #	HHMI ASSET #	ULT FREEZER TEMP.	MAKE/MFG	MODEL	UCSF ASSET ACQN YEAR	MFG DATE	SERIAL NUMBER
082000988	-	-80	THERMO SCI.	ULT2186-6-A43	2008	--	126825301081106
072000412	-	-80	THERMO SCI.	ULT1790-9-A33	2007	--	P26S-239255-RS

TYPE/SIZE		UTILITIES					
SL /WD /UC	CHEST (SM /MD /LG)	VOLTS	AMPS	NEMA	EMERG. PWR	GAS BACKUP	MONITORING
-	-	115	16.0	5-20	Y	-	N
-	MD	115	16.0	5-20	Y	-	N

TYPE & SIZE KEY

- SL = Extra Slim; WD = Extra Wide; UC = Under-counter; Standard dimensions 42"W x 36"D x 78"H)
- Chest Style Length: SM = <54"; MD = 55 -84"; LG = >85"

Alternatives to -80 ULT freezers

Fusion® Vapor Phase Liquid Nitrogen (LN2) Freezer

- In production; official product launch pending
- UCSF is beta testing
- Pricing not yet finalized

Operational benefits

- **Only one LN2 fill required**
 - ~\$1,200 annual savings
 - Reduced manufacture and deliveries of LN2 cylinders
- **Low electricity consumption:** Only 6.4 kWh/day
- **No heat exhaust** reduces HVAC use
- **Eliminates damaged floors** due to LN2 spills

Performance benefits

- **-170C storage temperature**
- **Power outage security:** 18 days to warm to -80C.
- **Temperature stability:** no temp rise with door openings
- **Dry storage:** contents don't contact liquid nitrogen



Asset Management

ULT Freezer Cleaning Service Feasibility Analysis for better management & consolidation of -80C freezers

Challenges: Limited resources, time and knowledge

- **No institutional support.** Labs fund and solve problem themselves
- **No equipment or supplies** e.g. spare -80 freezers
- **Staffing:** Many labs lack a designated person to manage their storage
- **Expertise varies greatly:**
 - Equipment & maintenance practices
 - Storage organization methods
 - Best practices for sample preparation and storage

Initiative: Feasibility analysis of Freezer Cleaning Service

UCSF provides lab with an ULT freezer, tools and logistics

- Disaster readiness assessment and remediation
- Annual consolidation of contents
- Provide preventive maintenance
- Offer RedCap freezer organization templates
- Staff to log samples into Lab Vantage biospecimen database
- Evaluation for freezer replacement rebates
- Dissemination of best practices for sample preparation and storage



Opportunities for ULT storage expansion

Bio specimen facility at 270 Masonic

- A UCSF lease has soon will be signed for a significant portion of 270 Masonic Avenue (Vitalant, formerly Blood Centers of the Pacific and BSRI)
- ~10,000 square feet in the basement is available for use as a freezer facility
- Discussions underway

Expansion of Oyster Point freezer farm

- Potential to add up to 70 freezers and run as biorepository
- Feasibility analysis needed

Commercial storage suppliers

- Discussions and/or visits underway with Fisher, EPL (VWR), and Brooks
- Researching other firms nationally
- Suppliers need UCSF to provide information on amount and types of contents



University of California
San Francisco

THANK YOU

2/15/2019



Supply Chain Management