



UCSF: RESEARCH DURING RESIDENCY

UCSF Department of Anesthesia and Perioperative Care

Outline

- Overview of UCSF Anesthesia research training program
 - Pathway to Scientific Independence (PSI)
- Describe opportunities for research for UCSF Anesthesia Residents
 - Research Scholars Track
 - Categorical Residency

UCSF Anesthesia's Pathway to Scientific Independence (PSI)

- Goal: To train and develop anesthesiologist physician-scientists to research independence
- Provides a clear pathway to a significant research career
 - Protected research time (75-80%, multiple years)
 - Mentor matching
 - Milestone requirements (presentations, manuscripts, grant proposals)
 - Coursework
- Points of Entry
 - Research Resident Scholar Track (CA1-CA4)
 - Categorical Residency (CA1-CA3)
 - Post-doctoral fellowship
 - Junior faculty

UCSF PSI: Key Players

Vice Chairs for Research		Residency Director	
Bill Young	Jeanine Wiener-Kronish	Manny Pardo	
			
Anesthesia Chairs		Research Administrator	
Ronald Miller	Mervyn Maze	Michael Gropper	Claire Harmon
			

Bill Young, M.D. 1954-2013

Sapere Aude!: the 2009 Excellence in Research Lecture. Anesthesiology. 2010 Apr;112(4):802-9



Mr. Piano Man: Reflections on the Life of Physician, Scientist, and Humanitarian. William L. Youns. MD (1954-2013)
 Warner, David S. MD¹; Lanier, William L. MD^{1,†}
 Journal of Neurosurgical Anesthesiology: January 2014 - Volume 26 - Issue 1 - p 1-3
 doi: 10.1097/ANA.000000000000006
 In Memoriam

Facets Required for Successful Research Training and Development

- Commitment to research at all levels
 - Trainee
 - Department
 - Institution
- Mentors
 - Research mentor(s)
 - Career mentor(s)
- Training plan
 - Coursework
 - Education in writing papers and grants
 - Participation in local, regional, and national research meetings

Points of Entry into Anesthesiology Research Training at UCSF

- Residency
 - Categorical Residency
 - Innovative Research Tracks
- Fellowship
- Junior Faculty



Research During Residency

Categorical Residency with Research Time

- 2 residents/year
- Up to 6 months research time
- Research in CA2 and/or CA3 year
- Minimal clinical responsibilities
 - +/- 1d/week clinical work
 - Call

UCSF Research Scholar Track

- For residents that have decided to pursue a career as a physician-scientist
- Basic features
 - Early mentor pairing
 - Research starting early during residency (CA-2)
 - 80% protected time during research blocks
 - Educational and Research in Programs seminar series
- Research focuses are broad
 - Basic, Translational, Clinical
 - Research Tracks
 - Critical Care, Neurosciences, Pain and Addiction, Vascular Biology and Bioengineering, Human Genetics and Bioinformatics
 - Dedicated leader for each track

UCSF Research Scholars Track - Specifics

- 4 year residency (CA1-CA4)
 - Internship at UCSF
- Research in CA2-CA4 years
 - 3-12 months/year in 1-12 month blocks
 - 19 Total research months
- Stipend to support research
- Protected research time post-residency
- Clinical work during research rotations
 - ~ 4 days/month
 - Call
- Website: <https://anesthesia.ucsf.edu/research-scholars>

Mentors

- Mentors can be inside or outside department
- Mentors are vetted by research training program director
 - Mentoring track record
 - Viability of research program
- Trainees encouraged to meet multiple potential mentors as well as members of their research groups

Research Mentors from Multiple Depts

<https://anesthesia.ucsf.edu/research-mentor-list>

Application, Interviews, and Selection of Residents for Research Scholars Track

- Applicants
 - Select Research Scholars Track during application
 - Encouraged to list Categorical and Research Scholars Tracks on match list
- Selecting Candidates to Interview
 - Must have strong research background
 - MD/PhD or MS are good indicators
 - -OR- Substantial research time before or during medical school
 - Strong clinical evaluations necessary
- Match List
 - Clear dedication to research as part of career
 - Evidence of past productivity in research
 - Strong letters from research advisors/mentors
 - Evidence of clinical competence - Well-ranked on Categorical list

Research Time for Different Pathways

Postgraduate Year (PGY)	PGY 1		PGY 2		PGY 3		PGY 4		PGY 5	
	TITLE	RESEARCH	TITLE	RESEARCH	TITLE	RESEARCH	TITLE	RESEARCH	TITLE	RESEARCH
STANDARD RESIDENCY	CBY		CA1		CA2		CA3			
CATEGORICAL RESIDENCY WITH RESEARCH	CBY	0-1 Months	CA1		CA2	0-3 Months	CA3	6 Months*	Research Fellow	Negotiated
RESEARCH SCHOLARS PROGRAM**	CBY	0-1 Months	CA1		CA2	6 Months	CA3	6-9 Months*	CA4	9-12 Months*

* Research time allotment during CA3, CA4/Research Fellow years may vary by year depending on the trainee's research and clinical program.

** When doing research rotation, trainees will do 4 days/month clinical time (on average) and will be responsible for call.

CATEGORICAL VS INNOVATIVE TRACKS

Why one over the other?

Advantages of Categorical Residency Route

- Individuals with a research background can continue with their research or explore a new research direction during residency
- Individuals without research experience can explore research
 - This group represents a pool of potential anesthesiologist researchers
- Can set the stage for further research training after residency
- No extension of residency
 - Relevant for those doing clinical fellowships after residency
 - Geographic considerations (i.e.: plan to move post-residency)

Advantages of Research Scholars Track

- Early engagement in research
 - Identification of research mentor by end of CA1 year
 - Begin research project during CA2 year
 - Up to 24 months total of research during residency
- Yearly research stipend
- Continued limited clinical activity during research months (20%)
 - Build and maintain clinical skills
- Research farther along by completion of residency
 - earlier independence

Outcomes of Research Scholars Track

- 13 residents on Research Scholars Track
 - 7 Completed Residency → ALL ARE IN ACADEMICS AND DOING RESEARCH
 - 5 Current Residents
 - 1 Changed to Critical Care track after 1st 6 month block
- Topics – Basic-Translational-Clinical – Multiple topics
- Early Successes
 - Catherine Chen, MD – Faculty, UCSF
 - Grants: FAER RFG and MRTG
 - Publications during residency: 1st author NEJM 2015
 - Elizabeth Whitlock, MD, MS – Faculty, UCSF
 - Assistant Professor, UCSF
 - Grants: FAER MRTG, NIH GEMSTAR
 - Publications: 1st author British Medical Journal 2015
 - Paul Riegelhaupt, MD, PhD – Faculty, Cornell
 - Grants: FAER MRTG
 - Publications: Neuron 2014

Residency → Post-Residency → Independence

- Residency
 - 4 years (CA1-CA4)
 - Support: Departmental stipend, FAER (RFG)
- Postdoctoral Fellowship
 - 2-3 years
 - Support: Departmental, NIH T32, FAER (RFG)
- Junior Faculty
 - 2-7 years
 - Support: Departmental, FAER (MRTG), IARS, AHA, K08, K23, etc

Up to 14 years from entry onto PSI to 1st major independent grant (i.e.:R01)!



Thank You!!