## Agenda: bit.ly/GRAD201

- 1. Lecture: Why and how to develop an independent research program (20 minutes, 10:10-10:30)
- Faculty perspective 1: Planning and selecting your projects as a graduate student. (30 minutes, 10:35-11:05). Isha Jain, PhD. Sandler Faculty Fellow, Principal Investigator.
- Faculty perspective 2: Developing and funding your independent research program as an international postdoc. Ernesto Diaz-Flores, PhD. Assistant Adjunct Professor, Department of Pediatrics. (20 minutes, 11:10-11:30)
- 4. Lecture: Getting started: Designing your research project. Ernesto Diaz-Flores (20 minutes, 11:30-11:50)
- 5. Working lunch: Write your one-page research plan (30 minutes, 12:00-12:30)
- 6. Group work: Get feedback on your plan (45 minutes, 12:30-1:15)
- 7. Faculty perspective 3 & Lecture: Using faculty feedback to improve the fundability of your research program. Felice Dunn, PhD, Assistant Professor (1 hour, 1:15-2:15)
- 8. Break (10 minutes)
- 9. Workshop: Your plan for identifying and reaching out to faculty (40 minutes, 2:25-3:05)
- 10. Wrap up and assignment (15 minutes, 3:05-3:20): Giving a chalk talk.

## Course Objectives: bit.ly/GRAD201

- 1. Describe the research program expectations that faculty hiring committees have of candidates
- 2. Describe the successful components of a research program
- 3. Identify a unique research niche that would distinguish them from other scientists in the field
- 4. Identify mentors and collaborators that would allow them to develop this unique research niche
- 5. Present their research program in the form of both a research statement and a chalk talk

# Where are you in your development? bit.ly/GRAD201A

I understand the research program expectations that faculty hiring committees have of candidates I can describe the successful components of a research program

2

I have identified a unique research niche that would distinguish me from other scientists in the field

З

I have developed a research proposal with specific aims

4

I have presented my proposal to faculty (in writing or orally) and have received critical feedback that can help me improve it

5

#### How to use this workshop series

- Understand what makes a research program successful
- 2. Begin defining your vision & strategy for your future lab
- 3. Develop a network of faculty mentors who can offer critical feedback
- 4. Practice presenting your research plan to peers

# If you are a graduate student:

Identify success metrics for your search for the right postdoc environment

#### If you are a postdoc:

Build your strategy to discuss independence with your PI Why and how to develop an independent research program Laurence Clement

#### Research-Intensive Institutions (R)

Research & Teaching Focused (RT)

#### Teaching-Only Institutions (T)



#### How to get tenure at these institutions







#### Research-Intensive Institutions (R)

Research & Teaching Focused (RT)

#### Teaching-Only Institutions (T)



#### How to get hired at these institutions?



Qualification		Level 1	ell Level2 Level3 Level		Level 4		
career.ucsf.edu/ACRA							
Publications		Candidate has produced a few papers, regardless of authorship or impact.	Candidate has produced first author papers during postdoc and (12) PhD (regardless of impact) (13).	Candidate has produced first author papers during postdoc and (12) PhD, with at least one paper contributing significantly to the field (14).	Candidate has produced first author papers during postdoc and (12) PhD, at least one of which was published in Cell, Nature, or Science (15).		
<b>RT</b> 77% Required		9%	64%	5%			
R 100% Required			3%	95%	3%		
Research Vision & Strategy		Research program is exciting (16) with a clear direction and includes explicit, feasible steps to attain this direction over the first couple of years.	Level 1 & There is an interesting, broad, research question that fills important gaps in the field and provides direction for the next 5 to 10 years.	Level 2 & The research question is broken down into smaller, feasible projects that use appropriate methods to answer the question.	Level 3 & The candidate has demonstrated experience successfully implementing this or a similar vision independently. (17)		
RT	77% Required	41%	18%	18%			
R	87% Required	13%	29%	34%	11%		

Qualification		Level 1	Level 2 Level 3 Lev		Level 4			
career.ucsf.edu/ACRA								
Funding Plan		Candidate can suggest specific funding agencies and program names to fund proposed research program. (18)	Level 1 & Proposed research program is ambitious and impactful enough to be funded by an R01 grant. (19)	Level 2 & Candidate has developed specific aims that can be realistically achieved with a first R01 grant. (20)	Level 3 & Candidate has developed a funding plan beyond the first R01 grant. (21)			
RT	45%	45%						
R 68% Required		8%	24%	34%	3%			
Research Independence		Candidate has the technical expertise to run their proposed research program independently. (22)	Level 1 & Candidate shows ability to lead a research program, by developing own ideas and new collaborations independently. (23)	Level 2 & Candidate's proposed research program does not appear to be in competition with their current advisor's. (24)	Level 3 & Candidate can provide evidence of independence through advisor's recommendation letter.			
RT59% RequiredR82% Required		27%	23%	5%	5%			
		11%	32%	24%	16%			
P	92% Bequired	24%	5%	32%	32%			
n		2770	070	0270	0270			

#### Qualification

career.ucsf.edu/ACRA

Recommendati ons RT 73% Required R 92% Required		Enthusiastic and personalized recommendations from both PD and PhD advisors. (25)	Level 1 & letters from other respected scientists who are well known by the search committee AND who know the candidate well. (26)	Level 2 & letters emphasize candidate's ability to be successful as a principal investigator.	Level 3 & letters emphasize that the candidate shows the potential to become a leader in the field.
		59%	9% 5%		
		24%	5%	32%	32%

Qualification		Level 1 Level 2		Level 3	Level 4	
career.ucsf.edu/ACRA						
Research Feasibility with Available Resources		Candidate demonstrates ability to develop a research program within the limitations of the start-up funds. (8)	Level 1 & Candidate demonstrates the ability to independently manage and run the equipment required for their research program. (9)	Level 2 & Research program is feasible in the institution's research and geographic environment, which includes some minor constraints. (10)	Level 3 & Research plan is tailored to the non-R1 institution's highly limited resources. (11)	
RT	82% Required	14%	9%	36%	23%	
R	66% Required	16%	26%	24%		
		-				
Verbal Communicatio n of Research		Can present research clearly and effectively to labmates.	Can present science clearly to scientists in the same sub-discipline (for example, to other microbiologists).	Can present science clearly and effectively to scientists outside of subfield.	Can present science clearly and effectively and can spark the interest of scientists outside of subfield and non-PhD students.	
RT	73% Required			14%	59%	
R	87% Required		3%	61%	24%	

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New Results The Acad expectation Laurence Cle doi: https://d This article is a	emic Car ons for fur ment, Jennie loi.org/10.110 a preprint and	eer Readines ture life scien B. Dorman, © Ric 01/829200 has not been certifi	<b>s Assessment: Cl</b> <b>ces faculty</b> :hard McGee ed by peer review [what	Comment on this pap arifying training does this mean?].	er	<ul> <li>Previous</li> <li>Posted November 06, 2019.</li> <li>Download PDF</li> <li>Supplementary Material</li> </ul>	<ul> <li>✓ Email</li> <li>→ Share</li> <li>④ Citation Tools</li> </ul>	Next 🧲
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Total		I,7I9 Blogged by <b>1</b> Tweeted by <b>62</b>	291	453		Animal Behavior an Biochemistry Bioengineering Bioinformatics	d Cognition	

#### Time to reflect on your developmental stage

- 1. Go to our in-class activity/survey: bit.ly/GRAD201A
- 2. Complete all questions 1 (on two pages) and stop at "wait for the instructor here"
- 3. Share with a partner

#### OCPD academic career programs are mapped to ACRA goals

Teaching Experience	Pedagogical Practices	Ability to Serve a Diverse Student Population	Recommendations	Inclusion of Undergraduate Research Experiences in Research Plan	Experience Conducting Research with Students	
Trainee has been fully responsible for organizing and teaching a course. Trainee is familiar with the evidence supporting the use of active learning strategies in the classroom.		Trainee demonstrates the sensitivity, respect for individuals of all backgrounds, and the interpersonal skills to interact with them,		Research plan is specifically tailored to the institution's undergraduate and/or Master's population.	Trainee can infloute a scientific mentoring philosophy that meets the needs of the non-PhD student population served by this institution.	
Trainee has been fully responsible for organizing and teaching a variety of courses with undergraduate students.	Trainee demonstrates that they can use active learning shategies effectively in the classroom, reflects on own teaching effectiveness and uses an iterative process to teaching to improve curriculum.	Trainee has immersed self in a diverse community, or has mentored, advised or taught diverse populations of students.	Letters from other respected scientists who are well known by the search committee AND who know the candidate well.	Trainee is able to propose projects of different calibers for different student populations.	Trainee has experience conducting research with non-PhD students	
STEP	P-UP Introduction to Pedagogy er.ucsf.edu/step-up-course (GR	/ Course AD 302)	MANAGE UP	TRAI Introduction to N	N-UP Mentoring Course	
STEP-UP USF-UCSF Teaching Residency career.ucsf.edu/step-up-tea ching-residencies-usf	STEP-UP         STEP-UP         TRAIN-UP           USF-UCSF         CCSF-UCSF         CCSF-UCSF           Teaching Residency         Teaching Residency         Partnership           career.ucsf.edu/step-up-tea         career.ucsf.edu/step-up-tea         career.ucsf.edu/step-up-tea           ching-residencies-usf         ching-residencies-usf         18			Career.ucst.eou/ TRAIN-UP-course TRAIN-UP CCSF-UCSF Mentoring Partnership career.ucsf.edu/NSFATE2018		
Publications, Scholarship	Research Vision & Strategy	Funding Plan	Research Independence	Research Feasibility with Available Resources	Verbal Communication of Research	
Trainee has produced first author papers during postdoc and PhD (regardless of impact)	Trainee has produced first author papers during postdoc and PhD (regardless of impact)		Trainee has the technical expertise to run their proposed research program independently.	Research program is isasible in the institution's research and geographic environment, which includes some minor constraints.	Trainee can present	
Trainee has produced first author papers during postdoc and PhD, with at least one paper contributing significantly to the field.	There is an interesting, broad, research question that fills gaps in the field and provides direction for the rest 5 to 10 years. The question is broken down into smaller, keable projects that use appropriate methods.	agencies and program names to fund proposed research program.	Trainee shows ability to lead a research program, by developing own ideas and new collaborations independence through (& widence of independence through advisor's recommendation letter.)	Research plr to the nor institutii limited		
PAC-UP Applying for faculty	Prepa Developing a	PAC-UP ring for an Academic Career C n independent research program	ourse (GRAD 201)	bit.ly/AC	RAroadmap	
https://career.ucsf.edu/pac	PAC-UP Getting feedb	ack on your research state	ment Demonstration:	https://ca		
	Teaching Experience         Trainee has been fully responsible for organizing and teaching a course.         Trainee has been fully responsible for organizing and teaching a variety of courses with undergraduate students.         STEP-UP USF-UCSF Teaching Residency career.ucsf.edu/step-up-tea ching-residencies-usf         Dublications, Scholarship         Trainee has produced first author papers during postdoc and PhD (regardless of impact)         Trainee has produced first author papers during postdoc and PhD, with at least one paper contributing significantly to the field .         PAC-UP Applying for faculty positions         PAC-UP Applying for faculty positions	Teaching ExperiencePedagogical PracticesTaime has been fully responsible for organizing and teaching a course.There is familiar with the disense supporting the use of absorber.Taime has been fully responsible for organizing and teaching a variety dramaThere is familiar with the disense supporting the use of absorber.Taime has been fully responsible for organizing and teaching a variety dramaThere is familiar with the does on supporting the use of absorber.Taime has been fully responsible for organizing and teaching a variety dramaThere is familiar with the does on supporting the use of absorber.Taime has been fully responsible for organizing and teaching a variety dramaThe demonstrates that they can use of the support of the use on absorber on the support of the support of the use of absorber.SEP-UP UPS-UPSF Taching Residency taing-residencies-use?SEP-UP Introduction to Pedagogia.MatterSEP-UP UPS-UPSF Taching Residency tacting-residencies-use?Dublections, Scholarship tation papers during postdoc and PhO with as on papers during postdoc and PhO, with asi to absorber on the teaching on the teaching on the teaching absorbed on the support of the teach.Thine has produced first up optices of memory.The an interesting-troat results of the support of the teaching on the teaching absorbed on the teachingThine has produced first up optices of memory.The an interesting-troat results on the support of the teaching on the teaching absorbed on the teaching on teaching residencies on the teaching residencies on the teaching residencies on the teaching residencies on the teach	Teaching ExperiencePadagogical PracticesAbility to Serve a Diverse Statent PopulationTrainee has been fully responsible for organizing and teaching a variety of usures with undergraduateThis is further with the saming strategies in the issure.The organization the saming strategies in the the saming strategies in the issure.The organization the saming strategies in the the saming strategies in the the saming strategies and uses and the saming strategies and uses and the saming strategies and uses and the saming strategies and second the saming strategies and uses the saming strategies and uses the saming strategies and uses the saming strategies and uses the saming strategies and program the s	Teaching ExperiencePedagogical PracticesServe a Diverse Student PopulationRecommendationsTrainee has been fully responsible for organizing and teaching a course.There is terminar with the statement subscription is served in the served is the served term with the served on the served is the served is the served term with the served on the served is the served is the served term with the served on the served is the served term with the served on the served term with the served term with the served on the served term with the served on the served term with the served on the served term with the served term with the served term with the served term with the served term with the served term with the served term with the served term with the	Tasching Bprinze       Padagogia Pattos       Ability to Scree Diverses       Becommendation       Inclusion of Undergraduate Basching A course.         Thisposible for organizing and eaching a course.       This to stamp strength with the scheming a warely of strength and becommendations from topic to the institution of strength and becommendations from topic topic the institution of strength and becommendations from topic topi	

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We asked faculty what they did to develop an independent research program when they were trainees.



- Take the time to plan your career path Select the right lab environment Stay open to multiple research
  - directions
- Take the time to choose and design your projects
- Take the time to plan your projects early-on
- If you haven't done so yet, move to your independent project in the last few years of your training
- Calculate the resources needed for the projects
- Get your first independent project funded



- Get feedback on your project plans from your lab early-on
- Regularly track and assess progress on your project(s)
- . Connect with faculty about your independent project
- Ask for critical reviews from facultyAddress all critiques
- . Identify and cultivate mentors and sponsors



- Identify the big picture and target audience (funders, departments) Learn how to communicate your project
- Be proactive about promoting your work
- Use fellowship opportunities to have a discussion about independence with your PI

#### Common challenges faced by faculty who did succeed

Afraid to admit my career goals to my PI

Perceived as an implementer of my PI's ideas

Not having a discussion about independence

Not considering faculty on equal footing when engaging with them

#### Common challenges faced by faculty who did succeed

Relying on my PI's validation to know if I am ready for the next step

Getting wrong advice on how to spend my time in grad school/postdoc

Not knowing if I am qualified for a faculty position

Believing the idea I pitch is my life project



#### Common challenges faced by faculty who did succeed

Underestimating the time it takes to complete the project

Not knowing how to demonstrate potential impact of my work

Not being comfortable with the "PR" required

Not having a long term plan



# Common challenges relate to systemic issue with graduate and postdoctoral training

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supervisoremployee Relying on my PI's validation to know if I am ready for the next step

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mentormentee Underestimating the time it takes to complete the project

Not knowing how to demonstrate potential impact of my work

Not being comfortable with the "PR" required

Not having a long term plan



trainertrainee

# There are different relationships for a research mentor and their trainee

Role**	Is responsible for	When?		
The traditional	Career development	When you are expected to support a mentee to attain their career goal of navigate professional challenges		
	Psychological support			
		navigate professional enalieriges.		
The adjugator	Scientific knowledge	When your mentee is expected to learn		
	Technical skills	new knowledge and skills for which you		
八 (trainer)	Critical and analytical thinking	have expertise during their time with you, as part of an educational or training		
	Identification of creative projects	program.		
The supervisor	Performance	When the performance, behavior and		
(manager)	Behavior	success or that of someone on your team,		
	Productivity	and you have the authority to hire, fire, pay, and recommend someone for promotion.		

\*\*Laurence Clement, Karen Leung, James Lewis and Naledi Saul, 2016

# There are different relationships for a research mentor and their trainee

Role** The traditional mentor (advisor)	ls responsible for Career development Psychological support	
The educator (trainer)	Scientific knowledge Technical skills Critical and analytical thinking Identification of creative projects	Some of these roles are in conflict with each other
The supervisor (manager)	Performance Behavior Productivity	

\*\*Laurence Clement, Karen Leung, James Lewis and Naledi Saul, 2016

# Common challenges relate to systemic issue with graduate and postdoctoral training

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Not being comfortable with the "PR" required

Not having a long term plan



trainertrainee

#### Time to reflect on own barriers

- 1. Go to our in-class activity/survey: bit.ly/GRAD201A
- 2. Complete questions 2 and 3 (on two pages) and stop at "wait for the instructor here"
- 3. Share with a partner (what you feel comfortable sharing)

Faculty perspective 1: Planning and selecting your projects as a graduate student Isha Jain, PhD. Sandler Faculty Fellow Principal Investigator.

#### Notes from Isha's talk: Choosing Projects

- Choose at least 1 collaborative project
- Re-evaluate projects regularly (4-6 months)
- 1-2 high risk projects, 1-2 low risk projects
- Every project has two "humps"
  - After 6 months: can I get a paper out of this?
    - What is the paper outline?
      - Figures
      - Narrative as bullet points
  - 3-4 years: is this going to have an important impact?

Notes from Isha's talk: Day-to-day

- Start the day with exciting science
  - le read the twitter feed of a favorite scientist
  - Or skim a few new papers
  - Instead of checking email
- Take the time to plan: schedule it
- Be deliberate about planning "down time"

#### Notes from Isha's talk: Getting new ideas/developing your research

- Attend talks outside your field
- Read up on topics that are unfamiliar
  - Papers that are a one-paper-radius away from your project
    - After all, you're trying to establish yourself in something DIFFERENT from what your PI studies!
- Have an "ideas" book/document/OneNote
  - Over time you will accumulate hundreds of ideas, the best of which can fuel your first grants
- Take the time to train in the skills you need before starting a lab
  - OCPD's programs: TRAIN-UP to manage, hire, fire
  - Ask to be involved
    - Managing a budget
    - Talking with journal editors
    - Editing papers
    - Hiring people
  - Ask to be a corresponding author
- Keep a whiteboard with 3 aims, add to it over time

#### Notes from Isha's talk: Get help/connect/network

- In the last 3-6 months of her postdoc, Isha emailed 10-15 faculty she didn't know in her region and asked for:
  - Feedback on her research program
  - Sponsorship for conferences
  - Hosting for talks
  - ...gave her a foot in the door to "the club"
- When she had her first paper, she reached out to people she didn't know
  - Some will turn into advisors/mentors
- Stay in touch with your thesis committee, grad school advisor, send them your paper
- Did a mini-sabbatical after postdoc, traveled in Europe visiting labs and giving talks
  - How to protect your ideas at this stage?
    - Is it a 2-way conversation? As you share more, do they share more too?
    - What's their reputation?
- Have an online presence
- Submit abstracts for <u>talks</u> at conferences

Faculty perspective 2: Developing and funding your independent research program as an international postdoc **Ernesto Diaz-Flores PhD** Assistant Adjunct Professor Pediatrics Department (UCSF) ernesto.diaz-flores@ucsf.edu

### Developing your project

- Discuss scope of project with your PI and colleagues
  - What is the major question in the field?
  - What is the question you want to address?
  - Does your work provide advances beyond the scope of your particular field/project?
- Delve into the literature and become a scholar in your field
- write your project in 1 page
  - Get it reviewed and learn the different aspects of it to shape your project
- Be mindful of your timeline:
  - Year 1 (learn), year 2 (produce and write), year 3 (apply: K99/R00, K,...)

## Implementing your project

- Plan your project as a funnel (from top to bottom) and start your project (from the bottom up)
- Be creative and productive
- be systematic and efficient to generate compelling data
- Learn the craft:
  - o how to write (competitive) grants, (high impact) papers and (winning) abstracts
  - o how to give dynamic presentations
- Stay on top of literature: read reviews
- Set up collaborations (go to learn skills to other institutions)
- Attend conferences (large and small), seminars and workshops
- make beautiful visuals of your data (Prism, R, BioRender)

#### Examples of compelling visuals



#### Microenvironment



#### BioRender.com





#### Diaz-Flores, et al., Cancer Research (2019)

### Designing your independent research

- What is missing in your field?
- What is missing in your lab's research that would benefit from another perspective
- Start working on it as a side project
- Set up your goals and be strategic on how to pursue them
- Become and expert in your field and start developing a track record
- Present it when you have a compelling case
- Establish independent collaborations
- Apply to a K99/R00 and other grant opportunities
- Think about the Oscars, you want to compete in the top categories

### Funding your project as an international student

- Identify grant sources
  - o From labmates
  - o Foundations (use your keywords)
  - o Pivot
  - o Listservs
  - o Companies
- Make a list to keep track
- Establish strategic collaborations
- Set up a reviewers committee

#### Example of a list of grant opportunities

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4	When everyone survives	WES	1-Jun	\$50k	Transcriptomics-guided preclinical study to validate effective therapies against high-r lymphoblastic leukemia	o identify and sk childhood acute h	ttps://www.wheneveryonesurv	ives.org/grant_applicati	on
5	R01 (PA-19-056)	NIH	5-Jun-19	\$400/Y	Exploiting aneuploidy to identify therapeu prevent relapse in pediatric hypodiploid le	tic targets and ukemia <u>h</u>	ttps://grants.nih.gov/grants/gui	ide/pa-files/PA-19-056.l	ntml
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_					high risk of relapse to inform novel the	apies with			
7	Cookies for kids Cancer Clinical and	Cookies for	June 19th LOI	\$200k	curative potential	h	ttps://orit.research.bcm.edu/Co	ookiesForKidsCancer/De	fault.aspx
8	Children Leukemia Research Grant	CLRA	30-Jun	\$100k	Identifying specific therapeutic opport childhood leukemia exploiting genomic aneuploidy.	alterations due to	ttp://www.childrensleukemia.o	rg/research-grants-sum	mary.asp
					Reversing the poor prognosis of hypodiploid leukemia				
					through cancer mapping: Identifying vuln	erabilities that			
-					inform selective therapeutics while reduc	ing the risk of			
9	Kleberg Foundation	Kleberg Fou	July 9th LOI	\$1M	relapse	h	ttp://www.klebergfoundation.o	org/grant-guidelines/me	dical-research/
10	RAP	UCSF	23-Sep	\$40K	largeting polyploidy in hypodiploid leuke	mia to prevent relapse			
11	NSF	UCSF-Iroy	29-Sep	\$160K/Y	MECOMP.NET Project: Cell computing inspir	ed by membranes in vivo		weletionel were wele was	
12	LLS Australia	LLS Dite Allen	August 31 LOI	\$650K	Precision medicine in hypodipiold ALL to	ncrease efficacy, red n	ttps://www.lis.org/researcn/tra	http://www.ansiational-research-pro	gram
13		Rica Allen	11-Seb			n	ttp://humanupacinoconsist	http://ritaalien.org/sch	101d15/
14	Michelson prize	Michelson r	31-Oct	\$150K	transformative research in human immur	ology 4	Ta1-a8f2-f580c620a01d/the-mi	chelson-prizes-initial-ap	plication
15	Innovation Grant	ALSF	4-Nov	\$250k/Y		h	ttp://www.alexslemonade.org/g	grants/guidelines	

## Special Recommendation: Excel at Writing

#### Learn to write Science in English:

- O Grammar courses
- scientific writing courses
- get Grammarly

#### Learn to write competitive grants:

- D learn to write compellingly <u>Book resources:</u>
  - "The elements of style" by Strunck and White
  - "Designing and writing scientific research papers" by Thomas Annesley
  - "Essentials of Writing Biomedical Research Papers" by Mimi Zeiger
  - "Publishing and Presenting Clinical Research" by Warren Browner
- Get them reviewed by peers and someone external

## A final word: Remember that the world would always be ready to embrace people with talent



Starting an independent career: Designing your project Ernesto Diaz-Flores

- 1. **Step 1**: Identify what you are most passionate, excited about. What is your scientific vision and mission?
- 2. **Step 2**: Convince your target audience that they should care about your vision and your mission: impact, significance, relevance of the work?
  - a. study section at specific funding org
  - b. hiring faculty at research institutions
- 3. **Step 3:** Convince the audience that you can successfully lead this project on your own.
- 4. **Step 4**: Determine if the environment, department, institution is conducive to your success.

1. Identify what you are most passionate, excited about. What is your scientific vision and strategy?

**Passion**: Be specific - avoid generalities like "I am passionate about biology or social sciences". What are values drive your interests? "Someone I know had this disease, and my mission is to find a treatment for this disease."

**Vision**: What is the big picture goal of your future lab? "I want a lab where I would use proteomics to solve cancer-related biological challenges."

**Strategy**: "I want to develop new tools in proteomics, because I believe that it will solve cancer-related biological challenges than genomics."

2. Convince your target audience that they should care about your vision and your mission: impact, significance, relevance of the work?

**Relevance**: Tailor to the funding context, or to what already exists. Instead of saying *"I want to find a new therapeutic targeting X protein,"* which already exists, you say that *"I will develop a project that will help understand X protein's biology."* 

**Significance**: How novel is this? What is different about your approach? What is your edge, your niche? *"I will use Y technique in addition to the other things I do (that may not seem novel)."* 

**Impact**: How is this going to change your field? "By better understanding the biology of X protein, our field will be able to .... and ...."

2. Convince your target audience that they should care about your vision and your mission: impact, significance, relevance of the work?

#### Impactful but not relevant:

We will define the crystal structure of X protein, but we don't know where it is expressed and why this protein is important.

3. Convince the audience that you can successfully lead this project on your own.

**Technical expertise**: What technical expertise do you have to support this strategy? "I have experience in computational science in my graduate work, and have developed animal experimentation skills in my postdoc."

**Scientific expertise**: What scientific expertise do you have to support this strategy? *"My understanding of the physiology of type 2 diabetes and the neural pathways in food intake equip me to address this issue."* 

**Productivity**: What have you accomplished as a trainee? What did you publish? Is it potentially impactful? Have you secured fellowships or grants?

4. Determine if the environment, department, institution is conducive to your success.

**Physical resources**: What physical resources will be available for you in this department, at this institutions? Do you have everything you need to successfully run your program?

**Scientific experts**: Will your colleagues be able to mentor you or support you? Have they been productive and successful in their own work?

**Collegiality**: How collegial is your department? Have your predecessors succeeded in this environment?

Working Lunch Write your research plan. You will share it with others after lunch.

## Working Lunch

#### Write your one-page research plan, to share after lunch.

- 1. **Step 1:** Identify what you are most passionate, excited about. What is your scientific vision and mission?
- 2. **Step 2**: Convince your target audience that they should care about your vision and your mission: impact, significance, relevance of the work?
  - a. study section at specific funding org
  - b. hiring faculty at research institutions
- 3. **Step 3**: Convince the audience that you can successfully lead this project on your own.
- 4. **Step 4**: Determine if the environment, department, institution is conducive to your success.

# Group work Get feedback on your plan Laurence Clement

#### Improving your research plan: Share in groups of 3

- Present for 4 minutes to your peers
- Peers discuss it for 10 minutes: ask questions, share their reaction, make suggestions
- 1. **Criterion 1**: Is the scientific vision and mission clear?
- 2. Criterion 2: Is it clear what is the impact, significance, relevance of the work?
  - a. study section at specific funding org
  - b. hiring faculty at research institutions
- 3. **Criterion 3**: Is it clear that the strategy can get them to their outcome? Is it clear that they can successfully lead this project on their own?
- 4. **Criterion 4**: Is it clear whether the environment, department, institution is conducive to their success? Can they do this work with the expertise and resources available to them?

Faculty perspective 3 & Lecture: Using faculty feedback to improve the fundability of your research program Felice Dunn, PhD, Assistant Professor Workshop Your plan for identifying and reaching out to faculty Laurence Clement

#### The "feed forward" process Suggested by Keith Yamamoto, PhD, UCSF Vice Chancellor for Science Policy & Strategy

- 1. Identify 3 faculty and invite them to be part of your mock review committee
- 2. First meeting (90 minutes)
  - a. Do not provide anything in writing.
  - b. Discuss your ideas.
  - c. Allow them to "grill" you on why this is important, what difference it would make if it was done.
  - d. Listen actively to their questions, concerns, suggestions. Observe their disagreements.
  - e. Use what you learned to write one page of three to five specific aims, addressing their points.
- 3. Second meeting:
  - a. Send your 1-pager with enough notice for them to read it
  - b. Listen actively to their debate, let them grill you further.
  - c. If they don't like it, throw it away and start again.
  - d. If they like it, you are good to go write your full proposal.

Source: Dr. Yamamoto and https://www.nigms.nih.gov/research/application/pages/tips.aspx

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# Why would people in your professional community help you?

- 1. Because you're doing interesting work
- 2. Because your work could forward their goals
- 3. To share their knowledge
- 4. Because they have hard won lessons
- 5. Because they wish someone had helped them
- 6. To repay a favor
- 7. To help a friend
- 8. They have the time/interest to do so
- 9. Because they consider it part of their job
- 10. You have an affinity to each other; they see themselves in you
- 11. Because they like something about you
- 12. Because you remind them of someone
- 13. Because you asked respectfully

#### In Your Academic/ Professional World



You can talk to anyone in your professional community, but you need to modulate **how** you speak with them

The farther people are from you, the more clear and concise you need to be

- People you don't know at all
- People who are senior in their field
- People who know your friends or colleagues
- People 1-2 stages ahead in their careers
- People you know
- People who are the same stage in their career



### **Application Materials**

#### Things to note

What? Get feedback on statements (research, teaching, diversity)

#### Who?

•Someone who can critique your work with an 'insider's eye'.

•You do not have to know this person well.

•You do not need to like this person.

# Why? Determine whether your statement is compelling.

How? You can use our ACRA to guide the discussion (for e.g. you may need feedback on your vision, strategy, rationale, fundability,

#### structure)

Dear Dr. Franklin

I know it's been a while, and I hope you're well. I'm applying for tenure track R1 positions and would like to ask if you would consider reviewing my research statement.

It would be extremely helpful to get perspective on my research program, because of your work on X. I would be grateful for any feedback you find necessary, but in particular your thoughts on the scope of my work and it's potential fundability would be most welcome.

Currently, I'm preparing materials for UPENN's Biology department and Harvard's Biochemistry department. I've attached my materials to this email. If you are able, I defer to your preferred style of giving feedback (by email, in person, on the phone, etc.).

Thank you for considering my request.

Best,

Albert Einstein





#### Where are you in your development?

I understand the research program expectations that faculty hiring committees have of candidates I can describe the successful components of a research program

2

I have identified a unique research niche that would distinguish me from other scientists in the field

З

I have developed a research proposal with specific aims

4

I have presented my proposal to faculty (in writing or orally) and have received critical feedback that can help me improve it

5

#### Your stage of development and your ask



I can describe the successful components of a research program

2

I have identified a unique research niche that would distinguish me from other scientists in the

З

I have developed a research proposal with specific aims

4

I have presented my proposal to faculty (in writing or orally) and have received critical feedback that can

5

Someone who can share how they developed their program Someone who could help you brainstorm ideas for projects Someone who could help you define specific aims Someone who could provide critical feedback on your proposal

## Workshop: Your plan for identifying and reaching out to faculty

- 1. Identify 3 faculty and invite them to be part of your mock review committee
- Why are they the most appropriate people? What value, perspective will they bring to the proposal?
- What concerns do you have about approaching them? How can you overcome your concern?
- What will be your ask to them? What language will you use to invite them?

Source: Dr. Yamamoto and https://www.nigms.nih.gov/research/application/pages/tips.aspx

# Assignment, due next session

- Finish your research plan using the feedback received today (to turn in next session, for credit students)
- 2. Identify 3 faculty members to ask for support that matches your level of development
- 3. Prepare to present your updated plan in 10 minutes in groups of 3 using a board (no slides!)
  (Watch the video of Seemay Chou's Chalk Talk Demonstration at bit.ly/ChalkTalkdemo, also linked on Syllabus)