

Postdoctoral and Doctoral Extramural Grants Workshop

Sponsored by the Office of Postdoctoral Affairs,
the Office of Graduate Fellowships and Awards, and
the VP for Research

Debra Ann Fadool
and Keith McCall



Speakers TODAY –

Debi Fadool – Overview of Strategies

Kay Jones – United States Department of
Agriculture (USDA)

Alan Spector – Biomedical Grantsmanship and the
NIH R01 Grant Proposal

Lara Perez-Felkner – NAEd/Spencer and AERA fellowships

Anasa Hicks – Best Grant Practices for Humanities
Proposals

Keith McCall – Newcombe, ACLS/Mellon, Fulbright

PEER Mentor Networking – Introduced during
Writing workshops, Part II and III.

Speakers THURSDAY –

Debi Fadool – Overview of Strategies

Jim Fadool – NIH F31, F32 NRSA

Hengli Tang – NIH R03 and R21

Linda Rinaman – NIH K99/R00

Beth Stroupe – American Heart Association (AHA)

Emily Moriarty-Lemmon – NSF GFRP and NSF Postdoctoral Fellowship

PEER Mentor Networking – Introduced during Writing workshops, Part II and III.

What they intend to tell you!

1. What is the eligibility?
2. What are the application components?
3. Are there supporting documents that are required?
4. How much preliminary data are required? And how much has to be generated by you?
5. What are common mistakes in designing your first grant application?
6. How long is the grant award, if funded? What is provided?
7. What is a pre-proposal? Is there an oral interview? What is current success rate?

Why Should You Design a Grant AND Submit it?

- Being able to express **your idea** is pinnacle as a postdoctoral scholar or doctoral researcher.

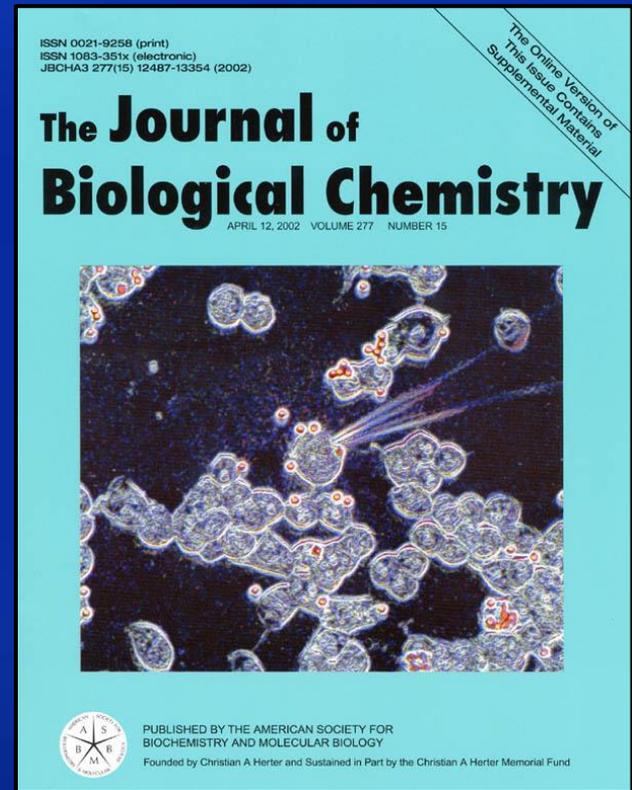
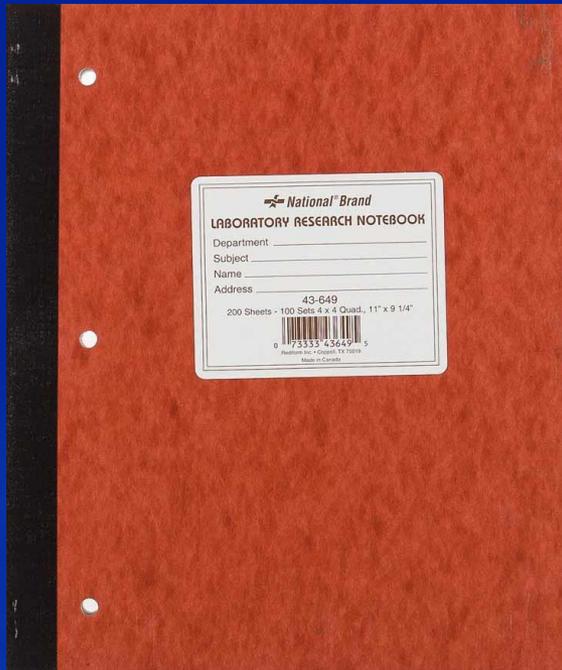
The Idea



Why Should You Design a Grant AND Submit it?

- Being able to express **your idea** is pinnacle as a postdoctoral scholar or doctoral researcher.
- Having a planned roadmap of your proposed work that has been rigorously examined by many individual experts that have provided feedback to you – will save you time!

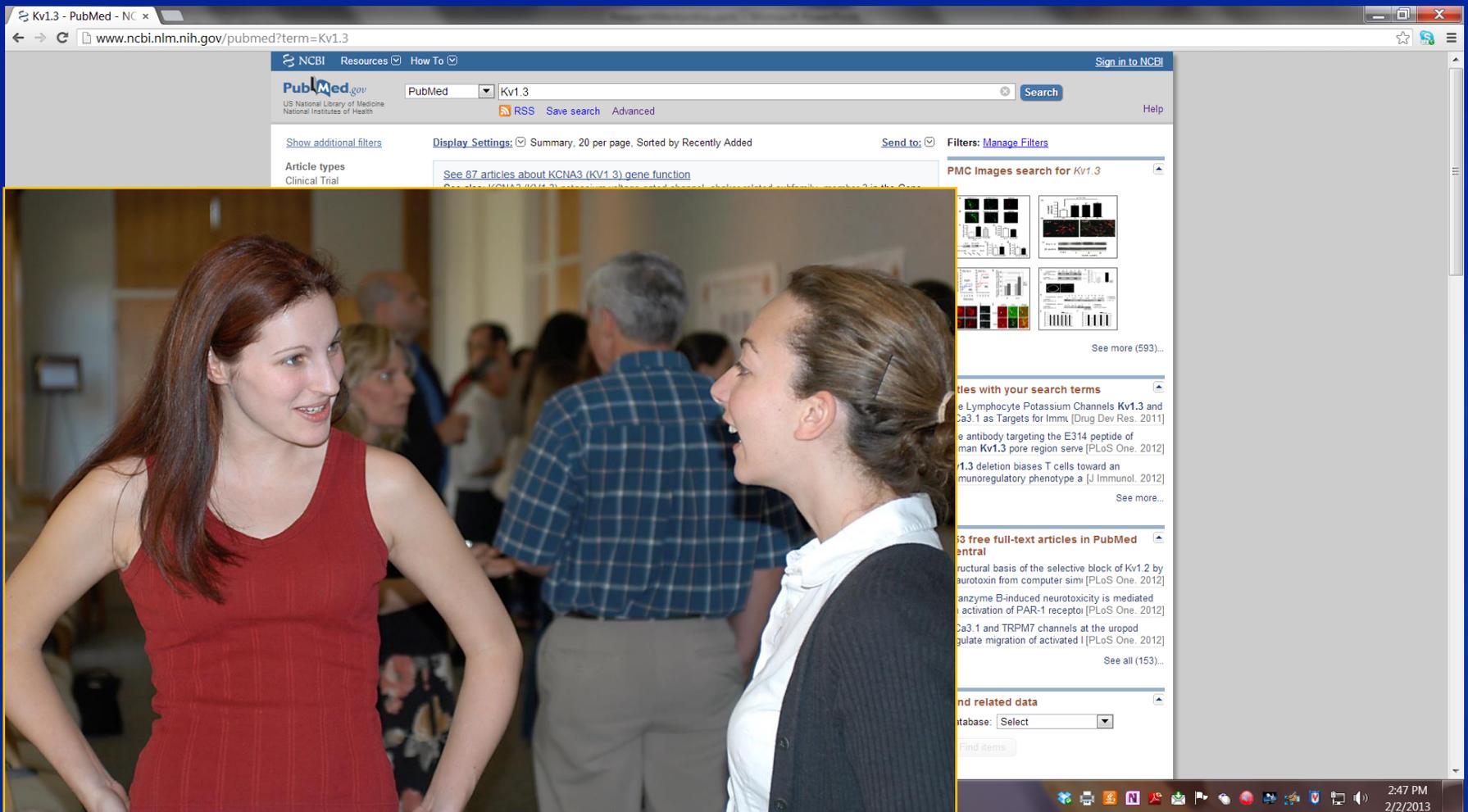
The Road Map



Why Should You Design a Grant AND Submit it?

- Allows an intense thinking period for you to devise the best research.

Intense Thinking and Reading



The image is a composite. The background is a photograph of two women in a professional setting, likely a conference or meeting. The woman on the left has long red hair and is wearing a red sleeveless dress. The woman on the right has brown hair pulled back and is wearing a white collared shirt under a dark cardigan. They are both smiling and looking at each other, appearing to be in conversation. Overlaid on the right side of the photograph is a screenshot of a PubMed search results page for the term 'Kv1.3'. The browser address bar shows 'www.ncbi.nlm.nih.gov/pubmed?term=Kv1.3'. The PubMed header includes the logo and search options. The search results show 'See 87 articles about KCNA3 (Kv1.3) gene function'. Below this, there are sections for 'PMC Images search for Kv1.3' (displaying several small image thumbnails), 'Articles with your search terms' (listing several articles with titles like 'Lymphocyte Potassium Channels Kv1.3 and Ca3.1 as Targets for Imm...'), '33 free full-text articles in PubMed Central' (listing titles like 'Structural basis of the selective block of Kv1.2 by tetrotoxin from computer sim...'), and 'Find related data' (with a dropdown menu for 'Database: Select'). The Windows taskbar at the bottom right shows the time as 2:47 PM on 2/2/2013.

Bounce ideas off your colleagues

Why Should You Design a Grant AND Submit it?

- Allows an intense thinking period for you to devise the best research.
- Makes you consider the big picture of your research.

The Shopping Mall

Who is your consumer?

What do they want?

How do you know that is what they want?

How do you place your ideas into context?

What is everyone else's product?

How is your product better?

Once you get your "loan", you can build
any store that you want....

But you must generate a product....

And it is good to have stock supplies....

Why Should You Design a Grant AND Submit it?

- Allows an intense thinking period for you to devise the best research.
- Makes you consider the big picture of your research.
- Your submitted grant can be used for more than just that extramural review committee.

What Mileage Can You Get from Your Grant Proposal?

- You can use the proposal for your prospectus (doctoral).
- You can use the proposal for your research statement of your job application packet (postdoctoral).
- You can use the background introductory material for a Review Paper.
- You can use prepared images on websites, in oral presentations, conference posters.

Why Should You Design a Grant AND Submit it?

- Allows an intense thinking period for you to devise the best research.
- Makes you consider the big picture of your research.
- Your submitted grant can be used for more than just that extramural review committee.
- Makes you competitive on the job market – that your idea was reviewed and approved for funding.

More Competitive for the Next Career Move

- Demonstrates you are organized and an effective communicator of ideas.
- Makes you knowledgeable about your broad field of research.
- Your resume/c.v. is higher impact – sets you apart from your peers.
- Institutes comb federal data bases to search for young scholars that have been funded and they invite them to apply to their ongoing job searches.

When is it NOT a good time to prepare a grant application?

~~Therefore we anticipated that~~ ~~We therefore asked whether~~ mitral cells contained in slices prepared from Kv1.3-null mice would be unresponsive to insulin-induced spike frequency changes. We first screened wild-type mice with a more highly selectively blocker of Kv1.3 that binds the vestibule of the channel at pM affinity. Under current-clamp mode, application of X pM ShK186 (X pM) significantly increased the firing frequency of mitral cell neurons by rapidly eliminating the pausing between spike clusters (Supplemental Figure 3A). ~~to exhibit a~~ ~~The firing pattern of firing not unlike observed in the presence of ShK186 was similar to~~ that of mitral cells obtained from Kv1.3-null mice (see Supplemental Figure 4). ~~Under~~ ~~In~~ voltage-clamp ~~moder~~ recordings, application of X pM ShK186 (X pM) blocked 70% of the outward current in mitral cells that were additionally pretreated with X nM TTX (X nM) to block ~~contaminating contributions from~~ voltage-gated sodium channels (Supplemental Figure 3B). Subsequent application of insulin elicited a reduction in peak current amplitude of only X pA, representing only X percent of the total current (data not shown). Since bath application of insulin to cells not pretreated with toxin causes a reduction in peak current amplitude of X pA, or X percent of the control current, only a minor amount of unidentified current is modulated by insulin that is not contributed by Kv1.3 (Supplemental Figure 3C). ~~In fact~~ ~~Consistent with these observations, the firing behavior of mitral cells in slices that were prepared from Kv1.3-null mice and recorded in current-clamp mode were~~ was largely insensitive to ~~bath~~ the application of insulin (Figure 2D,E). Recordings from slices obtained from Kv1.3-null mice have not yet been reported ~~for the slice configuration~~. Here we show that, ~~in~~ comparison ~~to~~ ~~with~~ wild-type mice, mitral cells with a gene-targeted deletion of Kv1.3 ~~have an increased sensitivity to applied current steps~~ respond to lower current injections (lower threshold to first spike), ~~display~~ a more depolarized resting membrane potential, an increased firing frequency ~~and a concomitant decreased ISI~~, a decreased time to latency ~~for to the~~ first spike, and a decreased pause duration between spike clusters (Supplemental Figure 4). Basal biophysical values are compared across genotypes in Supplemental Table 2.

Comment [PP12]: It's mostly a style issue, but I have the feeling that this way of arguing (expect, anticipate, etc...) takes away a bit of the novelty of the result...

Comment [PP13]: This is not so evident from Suppl. Fig. 3a, because the current injections were too short to appreciate the spike clusters. Instead, the increase in firing frequency is very clear. Could you include a different trace (longer current injection) to illustrate the effect on the spike clusters?

Comment [PP14]: I find this a bit confusing. Please tell me if I got it right. In Suppl. Fig. 3b you added TTX+ShK and say a reduction in outward current by 70%. You SUBSEQUENTLY added insulin: this for me means that you added insulin to the cells treated with TTX+ShK. Insulin has only a small effects on cells treated with ShK: this fits nicely in the story, but Suppl. Fig. 3c seems to show something different, with insulin being applied first to control cells (mid panel) and ShK strongly reducing the leftover current after insulin application... This seems to go against the claim that most of the insulin-sensitive current is also ShK sensitive, and can therefore be ascribed to the activation of Kv1.3 channels... Maybe simply showing the effect of insulin applied after ShK application would be more effective in illustrating your point, and I would omit Suppl. Fig. 3c: what do you think?

Comment [PP15]: Have you determined their input resistance? This would be quite important in the comparison, because it could explain some of the differences in the firing behavior.

Comment [PP16]: Here I would provide some

When is it NOT a good time to prepare a grant application?

- Too much demand between manuscript/book/thesis and grant application.
- Still completing your coursework.
- You are too senior for a particular grant mechanism.
- You did not perform well in the classroom.
- Your advisor has conflicting time commitments and cannot develop a training plan with you.
- You do not have an expert to help analyze the planned research.

When is it NOT a good time to prepare a grant application?

- Conflict with a planned off-campus experience that would also provide research opportunity.
- Poor match of environment to the research planned.
- No one knows your experiences well (letters).

What Type of Peripheral Preparations are Required?

- Vertebrate or human subject approval
- Recombinant dna, virus, hazardous materials, select agents
- Conflict of interest approval
- Budget approval
- Departmental signatures
- Form pages and navigating the program announcements
- Familiarity with the submission software - RAMP
- Government ID or registrations

How to Navigate and be Competitive with your Research Idea?

Find a Mentor!

Get Copies of Funded
and Unfunded
Applications

Ask lots of questions!



Logistics of the Workshop

April 15 – Abstracts due and Set up OneDrive

May 1 – Submission of Specific Aims with 5 names of committed reviewers for your discipline

May 13-14, & June 3-4 – Critique of your Specific Aims
Writing review in small groups

August 10 – Full proposal due to your 5 committed reviewers

Sept 17-18 or Oct 1-2 – Mock Study Section w/ reviewers

RESPOND TO NEXT
QUALTRICS End of March!!!

*Whether
continuing or not*

All Visuals Will Be Accessible Online
at the OPDA Slide Archive!