Break it Down to Build it Better

Pacing yourself for your K Award submission

Carol E. Lorenz, PhD
Workshop Agenda

• Introductions
• Information from questionnaires
• Quick overview of K Award types; NIH updates; submission cycles
• Workshop objectives
• Form peer accountability groups; hold initial discussion
• Background and context
• Timelines and milestones (explanation and group work)
• Work breakdown—work packages (explanation and group work)
• Work breakdown—activities (explanation and group work)
• Building your timeline
• Implement, monitor, evaluate
• Why do this?
• Common pitfalls
• Brief evaluation (time permitting)
Questionnaires
(Last two questions)
Questionnaires
(Last two questions)
Research Doctorate

Career Development Awards (K Awards) for Individuals with a Research Doctorate

College | Graduate School | Postdoctoral |
---|---|---|

<table>
<thead>
<tr>
<th>Independent Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Scientist Award (K05)</td>
</tr>
<tr>
<td>Career Enhance. Award for Stem Cell Res. (K18)</td>
</tr>
<tr>
<td>Independent Scientist Award (K01)</td>
</tr>
<tr>
<td>Mentored Research Scientist Development Award (K01)</td>
</tr>
<tr>
<td>Career Transition Award (K22)</td>
</tr>
</tbody>
</table>

Note: The following awards are not shown:
- Academic Career Award (K07)
- Mentored Quantitative Research Career Development Award (K25)
- Midcareer Investigator Award in Mouse Pathobiology Research (K26)

http://grants.nih.gov/training/kawardhp.htm

Version 7.1
Clinical Doctorate

Career Development Awards (K Awards) for Individuals with a Health-Professional Doctorate

<table>
<thead>
<tr>
<th>Medical School</th>
<th>Residency</th>
<th>Specialty/Sub-Specialty</th>
<th>Independent Investigator</th>
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<tr>
<td></td>
<td></td>
<td>Mentored Clinical Scientist Development Program (K12) (note: two types)</td>
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<tr>
<td></td>
<td></td>
<td>Mentored Clinical Scientist Development Award (K08)</td>
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<td></td>
<td></td>
<td>Mentored Patient-Oriented Research CDA (K23)</td>
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<td></td>
<td></td>
<td>Career Enhance. Award for Stem Cells Res. (K19)</td>
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<tr>
<td></td>
<td></td>
<td>Midcareer Investigator in Patient-Oriented Research (K24)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Individuals with clinical doctorates may also be eligible for awards shown for individuals with research doctorates. The following awards are not shown:
- Academic Career Award (K07)
- Mentored Quantitative Research Career Development Award (K25)
- Midcareer Investigator Award in Mouse Pathobiology Research (K26)

http://grants.nih.gov/training/kawardhp.htm
NIH K Award starting point

https://researchtraining.nih.gov/programs/career-development
NIH updates

• Summary of changes—handout: 2016 NIH Updated Resources v3

https://nexus.od.nih.gov/all/category/blog/open-mike/
Submission and resubmission cycles
NIH submission cycles/dates

• Cycle 1—all proposals with submission dates of January 25 through May 7
• Cycle 2—all proposals with submission dates of May 25 through September 7
• Cycle 3—all proposals with submission dates of September 25 through January 7
### NIH Review cycles

<table>
<thead>
<tr>
<th></th>
<th>Cycle I</th>
<th>Cycle II</th>
<th>Cycle III</th>
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</thead>
<tbody>
<tr>
<td><strong>Application Due Dates</strong></td>
<td>January 25 – May 7</td>
<td>May 25 – September 7</td>
<td>September 25 – January 7</td>
</tr>
<tr>
<td><strong>Scientific Merit Review</strong></td>
<td>June - July</td>
<td>October - November</td>
<td>February - March</td>
</tr>
<tr>
<td><strong>Advisory Council Round</strong></td>
<td>August or October</td>
<td>January</td>
<td>May</td>
</tr>
<tr>
<td><strong>Earliest Project Start Date</strong></td>
<td>September or December</td>
<td>April</td>
<td>July</td>
</tr>
</tbody>
</table>

**Example—new application**

Submit in Cycle 1
Reviewed Advisory Council
**Earliest project start date (No resubmission)**

February 12, 2017
June-July 2017
August or October, 2017
**September 2017 for August Council (8 months)**
**December 2017 for October Council (10 months)**
NIH review cycles

<table>
<thead>
<tr>
<th>Cycle 1</th>
<th>Cycle 2</th>
<th>Cycle 3</th>
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</thead>
<tbody>
<tr>
<td>Due Jan 25 thru May 7</td>
<td>Due May 25 thru Sep 7</td>
<td>Jan 7</td>
</tr>
<tr>
<td>Review</td>
<td>Review</td>
<td>Review</td>
</tr>
<tr>
<td>Council</td>
<td>Earliest start: Apr</td>
<td>Council</td>
</tr>
<tr>
<td>Earliest start dates: Sep/Dec</td>
<td>Earliest start: Jul</td>
<td>Earliest start: Jul</td>
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</table>

**Standard resubmission dates**

<table>
<thead>
<tr>
<th>Cycle 1</th>
<th>Cycle 2</th>
<th>Cycle 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 12</td>
<td>Jul 12</td>
<td>Nov 12</td>
</tr>
</tbody>
</table>
Resubmission timing example

2017
- Submit: 02/12/17
- Review: 06/17
- Re-submit: 07/12/17
- Review: 10-11/17
- Council: 01/18
- Earliest start: 04/18

2018
- Submit: 02/12/17
- Review: 06/17
- Re-submit: 07/12/17
- Review: 02-03/17
- Council: 05/18
- Earliest start: 07/18
Resources for NIH cycles
Submissions and resubmissions


Objectives of workshop

• Establish peer accountability groups
• Provide a process for:
  – breaking large amount of work (K award proposal) into smaller parts
  – identifying associated activities
• Develop a timeline for organizing work and tracking progress
• Identify common pitfalls and discuss ways to avoid them
Peer Accountability Groups

• Groups of 2-3
• Purpose for today: support each other in developing a timeline for your submission
• Ongoing purpose: provide peer support, share insights and tips from mentors, and hold each other accountable
• Schedule and hold your own interim meetings through submission and evaluation

Version 7.1
Peer Accountability Groups

Form groups
Discuss Pre-work Part II
Context for workshop—big picture

Vanderbilt internal process for NIH grant submissions (handout)
Context for workshop

• Borrowing from project management
• What is project management?
  – A structured and organized approach to accomplishing a specific effort (your project)
• What might the effort be?
  – Plan, write, and submit a manuscript
  – Conduct a research study
  – Implement a major program or intervention
  – Write and submit a grant proposal
Phases of project management

- Project management has five phases
  - Assessing feasibility
  - Planning
  - Implementing
  - Monitoring
  - Evaluating
Assessing feasibility

**Scope:** boundaries of what must be done to produce the project’s end result

**Cost:** what it will cost to complete the project

**Time:** amount of time to complete the project

None of the three is unlimited. Scope, cost, and time exist in a dynamic relationship; altering one will likely alter the other two.
Phases of project management

- Project management has five phases
  - Assessing feasibility
  - Planning
  - Implementing
  - Monitoring
  - Evaluating
Planning: Elements

• Elements of a plan
  – Goals and objectives
  – Timelines and milestones
  – Work packages and activities (work breakdown)
  – Resources
  – Budgets
Planning: Goal for this project

- Write and submit a proposal that:
  - Fits with the mission and direction of the Institute to which you are applying
  - Has a strong career development plan and good science
  - Is formatted correctly and submitted by specified date
  - Meets all internal requirements and deadlines
Planning: Timelines and Milestones

• Elements of a plan
  – Goals and objectives
  – Timelines and milestones
  – Work packages and activities (work breakdown)
  – Resources
  – Budgets
Setting up the timeline

• Identify end date of project (submission date)
• Break time between then and now into units (can be days, weeks, months, quarters, or combination)
• Line the paper with a column for each unit of time
• Write time units at top of each column
• Blank timeline provided for this workshop
Your timeline

Write dates at top of your timeline (handout)
Timelines versus milestones

• **Milestones**: key events in the project that tell you whether you are proceeding as planned; typically once set, they should be moved only with extremely good reason to do so.

• **Timeline**: describes how work on the project plays out over time; defines where tasks happen along a time continuum. Tasks can be moved, but you must understand consequences.
Planning: Milestones and Key Dates

• Write the following:
  – Dates that cannot be moved (submission date and internal deadlines)
  – Add key dates that apply to everyone
    • Holidays
    • Edge (internal) review date
    • Times your peer accountability group will meet
  – Add key dates for you as individual
    • On call times
    • Vacation or time away (yours, a member of your team, or someone critical to your proposal)
    • When will you send drafts out for review (other than Edge)?
    • When will you get documents to editor if using one?
    • Kid’s birthday, anniversary, other important dates
First step in constructing individual timeline

- Work in your groups, but focus on your individual timeline
- Select **single color** of post-it note for **all milestones and key dates**
- Write each milestone/key date on a separate post-it note
- Place under the appropriate column on your timeline
Milestones

Demonstration
Group/individual work
Reconvene
A daunting task

This is really exciting, but how am I gonna eat the WHOLE THING????

Obviously, one bite at a time!
Planning: Elements

• Elements of a plan
  – Goals and objectives
  – Timelines and milestones
  – Work packages and activities (create work breakdown structure)
  – Resources
  – Budgets
Write and submit a grant proposal

Work package

- Activity
- Activity
- Activity
- Activity

Work package

- Activity
- Activity
- Activity
- Activity

Work package

- Activity
- Activity
- Activity
- Activity

Work package

- Activity
- Activity
- Activity
- Activity
Work packages

- Work packages are a unit of work that needs to be done; they provide a logical basis for defining activities or assigning responsibility to a specific person or organization.
- Dividing the big chunk of watermelon into slices that can then be cut into bite-sized chunks.
Planning: Work Packages

• Identify **all** components required for submission (use checklist, SF424, Program/Parent Announcement PA, RFA)
• Develop your **own** list of components
• Each component or combination of components becomes a **work package** (recommend no more than 10 work packages)
# Components/work packages

<table>
<thead>
<tr>
<th>BODY OF GRANT</th>
<th>BUDGET</th>
<th>REQUIRED DOCUMENTS</th>
<th>MAY BE REQUIRED (depends on proposed research)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate Background</td>
<td>Budget</td>
<td>Letters of support from mentors, consultants, contributors and references</td>
<td>Protection of Human Subjects</td>
</tr>
<tr>
<td>Career Goals and Objectives</td>
<td>Justification</td>
<td>Institutional Commitment to Candidate’s Career Development</td>
<td>Inclusion of Women and Minorities</td>
</tr>
<tr>
<td>Career Development/Training Activities</td>
<td>Equipment</td>
<td>Research &amp; Related Senior/Key Personnel FORM</td>
<td>Inclusion of Children</td>
</tr>
<tr>
<td>Mentoring Plan</td>
<td>Subcontracts</td>
<td>Biosketches with appropriate personal statements</td>
<td>Targeted/Planned Enrollment</td>
</tr>
<tr>
<td>Specific Aims</td>
<td></td>
<td></td>
<td>Vertebrate Animals</td>
</tr>
<tr>
<td>Research Strategy</td>
<td></td>
<td></td>
<td>Data Safety and Monitoring Plan</td>
</tr>
</tbody>
</table>

**OPTIONAL**

- Appendices
- Introduction or Cover Letter

**NOTE: New in 2016:** Cover letter must include list of referees, department affiliation, and institution; not shared with peer reviewers

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*Session 2: Nov 4 prework due Nov 1*
Planning: Work Packages

• Individually
  – Assign each work package a color of post-it
  – Write the work package name on the post-it and stick it in the last column (legend)
Write and submit a grant proposal

Work Package 1
  - Task 1-A
  - Task 1-B
  - Task 1-C
  - Task 1-D
  - Task 1-E

Work Package 2
  - Task 2-A
  - Task 2-B
  - Task 2-C
  - Task 2-D

Work Package 3
  - Task 3-A
  - Task 3-B
  - Task 3-C
  - Task 3-D
  - Task 3-E
  - Task 3-F

Work Package 4
  - Task 4-A
  - Task 4-B
  - Task 4-C
  - Task 4-D
  - Task 4-E
Work Packages

Demonstration
Group/individual work
Reconvene
Relationships among components/work packages

BODY OF GRANT

- Candidate Background
  - Career Goals and Objectives
  - Career Development/Training Activities
  - Mentoring Plan
  - Specific Aims
  - Research Strategy

BUDGET

- Budget
  - Justification
  - Equipment
  - Subcontracts

REQUIRED DOCUMENTS

- Letters of support from mentors, consultants, contributors and references
- Institutional Commitment to Candidate’s Career Development
- Research & Related Senior/Key Personnel FORM
- Biosketches with appropriate personal statements
- Training in Responsible Conduct of Research
- Description of Institutional Environment

MAY BE REQUIRED (depends on proposed research)

- Protection of Human Subjects
- Inclusion of Women and Minorities
- Inclusion of Children
- Targeted/Planned Enrollment
- Vertebrate Animals
- Data Safety and Monitoring Plan
- Resource Sharing Plan
- Other statements specific to PA or RFA

OPTIONAL

- Appendices
- Introduction or Cover Letter

Checklist

REQUIRED DOCUMENTS

Research & Related Senior/Key Personnel FORM

Biosketches with appropriate personal statements

Training in Responsible Conduct of Research

Description of Institutional Environment

References

Project Summary/Abstract and Narrative

Checklist

Version 7.1
## Page Limits

<table>
<thead>
<tr>
<th>Section of Application</th>
<th>Page Limits * (if different from FOA, FOA supersedes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Resubmission or Revision Application (when applicable)</td>
<td>1</td>
</tr>
<tr>
<td>Candidate Information and Goals for Career Development and Research Strategy</td>
<td>12 (for both attachments combined)</td>
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<tr>
<td>Specific Aims</td>
<td>1</td>
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<tr>
<td>Training in the Responsible Conduct of Research</td>
<td>1</td>
</tr>
<tr>
<td>Candidate's Plan to Provide Mentoring (Include only when required by the specific FOA, e.g., K24 and K05)</td>
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<tr>
<td>Plans and Statements of Mentor and Co-mentor(s)</td>
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<tr>
<td>Letters of Support from Collaborators, Contributors, and Consultants</td>
<td>6</td>
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<tr>
<td>Description of Institutional Environment</td>
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<tr>
<td>Institutional Commitment to Candidate's Research Career Development</td>
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</tr>
<tr>
<td>Biographical Sketch</td>
<td>5</td>
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</table>

Activities

• Specific tasks within each work package that need to be done to complete that package
• Activities are your bite-sized chunks that you plan to do in the time period you allocate for them
Activities

• Start with a verb, signifying action
• Examples: write (first draft of Innovation section), send (version 1 to reviewers), draft (letters of support), call (biostatistician for consultation), review (document returned by reader), incorporate (comments from readers and reviewers)
Schematic of work packages and associated tasks

Write and submit a grant proposal

Work Package 1
- Task 1-A
- Task 1-B
- Task 1-C
- Task 1-D
- Task 1-E

Work Package 2
- Task 2-A
- Task 2-B
- Task 2-C
- Task 2-D

Work Package 3
- Task 3-A
- Task 3-B
- Task 3-C
- Task 3-D
- Task 3-E
- Task 3-F

Work Package 4
- Task 4-A
- Task 4-B
- Task 4-C
- Task 4-D
- Task 4-E

Version 7.1
Planning: Activities

• Select one of your work packages
• Brainstorm all activities that will need to be done to complete this package of work; record on tablets at your tables (or on your computer)
• Combine activities so no more than 8 to 10 activities per work package
• Number sequentially
• Repeat until all work packages have a list of associated activities
Planning: Activities

• All packages of work must be done; you decide how much time to spend on each
• Select a work package; write each activity associated with it on a separate post-it note of same color
• Repeat until all activities are on post-its of the appropriate color
• Arrange post-its for a given work package in reverse order
• For each set of activities, work backward from the final activity and place post-its along the timeline
• Repeat until all activities are on your timeline
Activities and Timeline

Demonstration
Develop individual timelines
(Handout of activities)
Reconvene
Planning: Reality check

• Return to your peer accountability groups
• Agree on times your peer accountability group will meet; put them on your individual timelines
• Vet your timelines with each other
• Review post-its in a forward direction
• Review activities in relation to each other; does sequencing fit?
• Rearrange accordingly, but remember that milestones should not be moved unless absolutely necessary
Reality check

Peer Groups
Reconvene
Use of Checklists

• List what you need from others—example:
  – Advisory Board members
  – Core Investigators
  – Dept chairs (ObGyn and Surgery)
  – Dept Chair, Dean SOM, OSR

• Make a checklist that allows you to track what you have done and monitor who owes you what by when

• Customize to meet your needs and ways of work
### Example of Checklist

#### Biosketches and LOS

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Asked and Agreed</th>
<th>Biosketch in hand</th>
<th>LOS Draft emailed</th>
<th>LOS returned</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Thorp</td>
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<td>Yes</td>
<td>8/17/06</td>
<td>Received</td>
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<td>Grimes</td>
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<td>Department Chair</td>
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<td>LOS as department chair</td>
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<td>Yes</td>
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<td>Requested LOS</td>
<td>Need</td>
<td>8/21/06</td>
<td>Received</td>
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<tr>
<td>Stan Beyler</td>
<td>Core Investigator</td>
<td>Requested LOS, info on labs</td>
<td>Need</td>
<td>8/21/06</td>
<td>Received</td>
<td></td>
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<tr>
<td>Anthony A. Meyer</td>
<td>Department Chair</td>
<td></td>
<td></td>
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<td>Department of Surgery Chair LOS</td>
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<tr>
<td>Paul Watkins</td>
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</table>
Electronic Alternatives to Timeline

- Excel (template available on VU depot)
- Trello at https://trello.com/
- Lino.it http://en.linoit.com/
- Outlook calendar or other calendaring system
- Smartsheet https://www.smartsheet.com/cu1
- Meistertask https://www.meistertask.com/
- SmartDraw (mind mapping; also touted as replacement for Visio) https://www.smartdraw.com/?id=264352
Phases of project management

- Project management has five phases
  - Assessing feasibility
  - Planning
  - Implementing
  - Monitoring
  - Evaluating

Look down a given week and identify tasks that need to be completed; check off as you complete each one
Phases of project management

- Project management has five phases
  - Assessing feasibility
  - Planning
  - Implementing
  - Monitoring
  - Evaluating

Review at scheduled peer accountability group meetings; hold yourselves and each other accountable.
Phases of project management

- Project management has five phases
  - Assessing feasibility
  - Planning
  - Implementing
  - Monitoring
  - Evaluating

Periodically, but especially after the submission, talk about what worked well and what could be improved
Why do this?

• Divide a large amount of work into smaller pieces that you can do
• Stay on track and on target
• Build a sense of accomplishment
• Soften crises of confidence
• Organize work so that others can assist—facilitates delegation
• Other thoughts
Common pitfalls

• Scope creep
• Doing a timeline and ignoring it
• Failure to reflect on what worked (or is working) and what did not
• Being the Lone Ranger
• Procrastination
• Letting the work manage you
• Not allowing time for review of your work
• Others
Quick evaluation

Plus/Delta
THANK YOU
and
HAPPY WRITING