



THE UNIVERSITY OF
CHICAGO

Division of
Biological Sciences
Office of Postdoctoral Affairs

The K Award:

A Quick Primer for the Eager & the Doomed

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Why does NIH Give Grants?

- Money
- Protected Time
- Resources
- Understand how life works
- Find disease mechanisms
- Make things better

To improve health care for Americans

Grants from Start to Established

NIH Grants

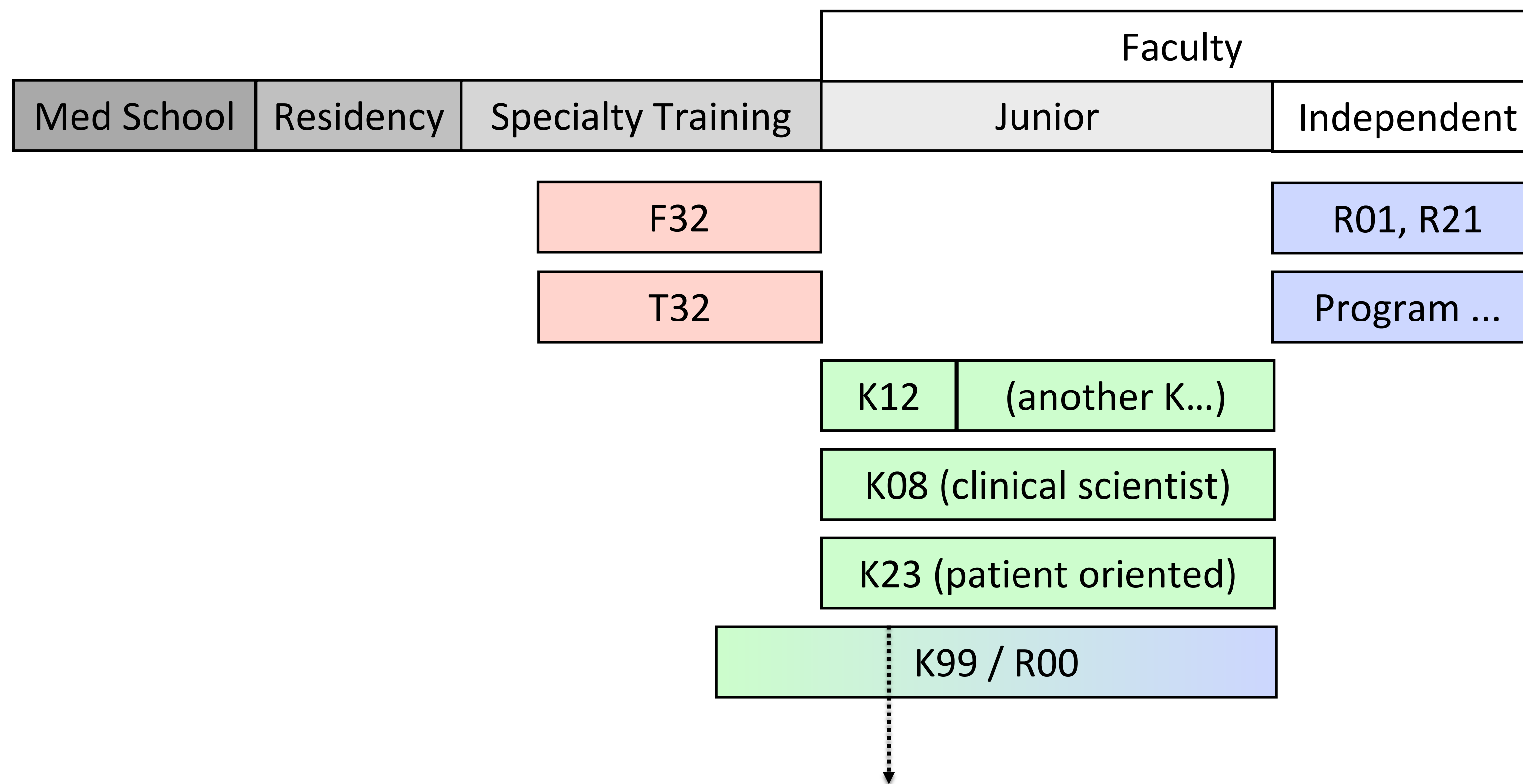
- F awards (graduate / post-doc training)
- K awards (transition to independence)
- R awards (standard research support)
- Programs (large scale grants)

Foundation Grants

- Trainee / fellowship grants
- Young faculty awards
- Established investigator awards
- Programmatic grants

K Award Career Timeline

Health Professional Doctorate



4 year limit from terminal degree
(PhD) or research fellowship (MD)!

What is a K Award?

- Career development
- Transition to independence
- Mentored
- Up to 5 years of support
- Salary support + protected time
- Requires institutional commitment

Types of K Awards

Institutional K Awards (only some institutes)

- K12 – mentored basic or patient oriented research
- KL2 – clinical, patient oriented research

Individual Career Development – health degree only

- K08 – clinical scientist health research
- K23 – patient oriented research
- K01 – a “K08” for qualified minorities

Pathway to Independence – PhD or health degree

- K99 – basic or patient oriented research

Writing a K Award

A K Award Has Five Big Parts

- Candidate (you)
- Career Development Plan
- Mentor
- Training & Research Environment
- Research Plan

and lots of little parts that you also have to complete

The Candidate

- Principal investigator (**you**)
- Faculty appointment at the time of award
- Original publications a **must**
- Publish in best journals possible
- Reviews & book chapters don't replace original publications
- Explain gaps in your record

Career Development Plan

- Candidate background

Prior training & effort to this point
Commitment to 75% protected time

Potential to be an independent investigator
Commitment to a health related research career

- Career goals & objectives

Pivot point

Systematic plan

Justifies need for further career development
Logical progression in training experiences

- Career development plan

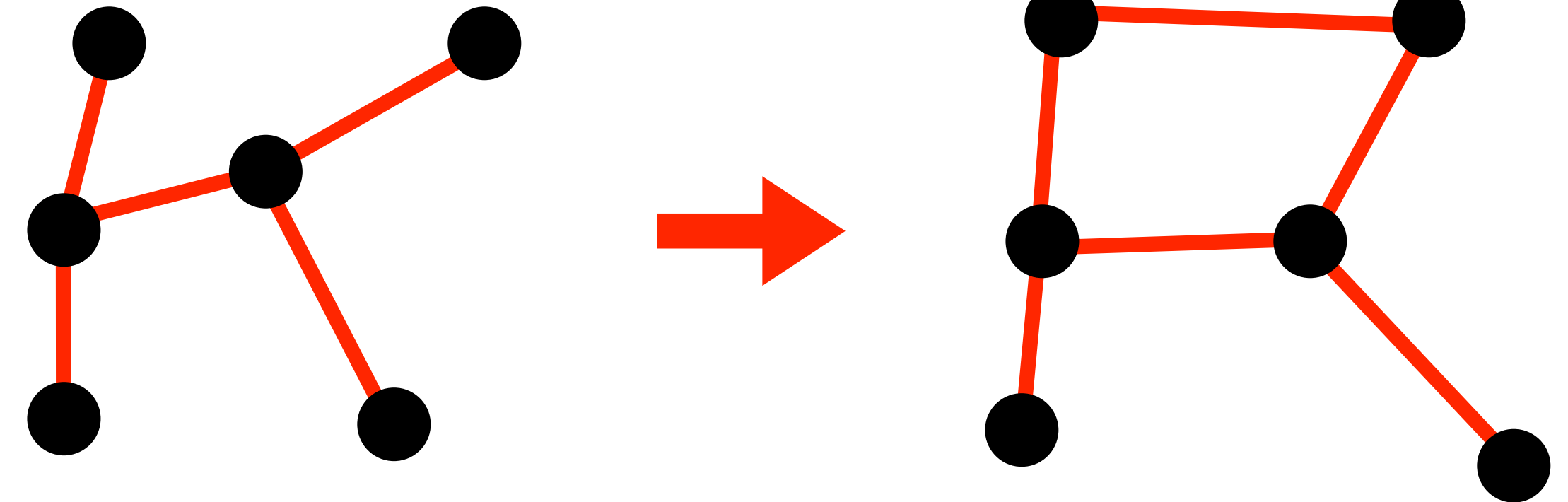
Describe mentoring & advisors
Didactics and research together train the candidate
Other professional responsibilities contribute to plan

Transition to independence (your R01!)
Timeline table

“The candidate and the mentor are **jointly responsible** for the career development plan.”

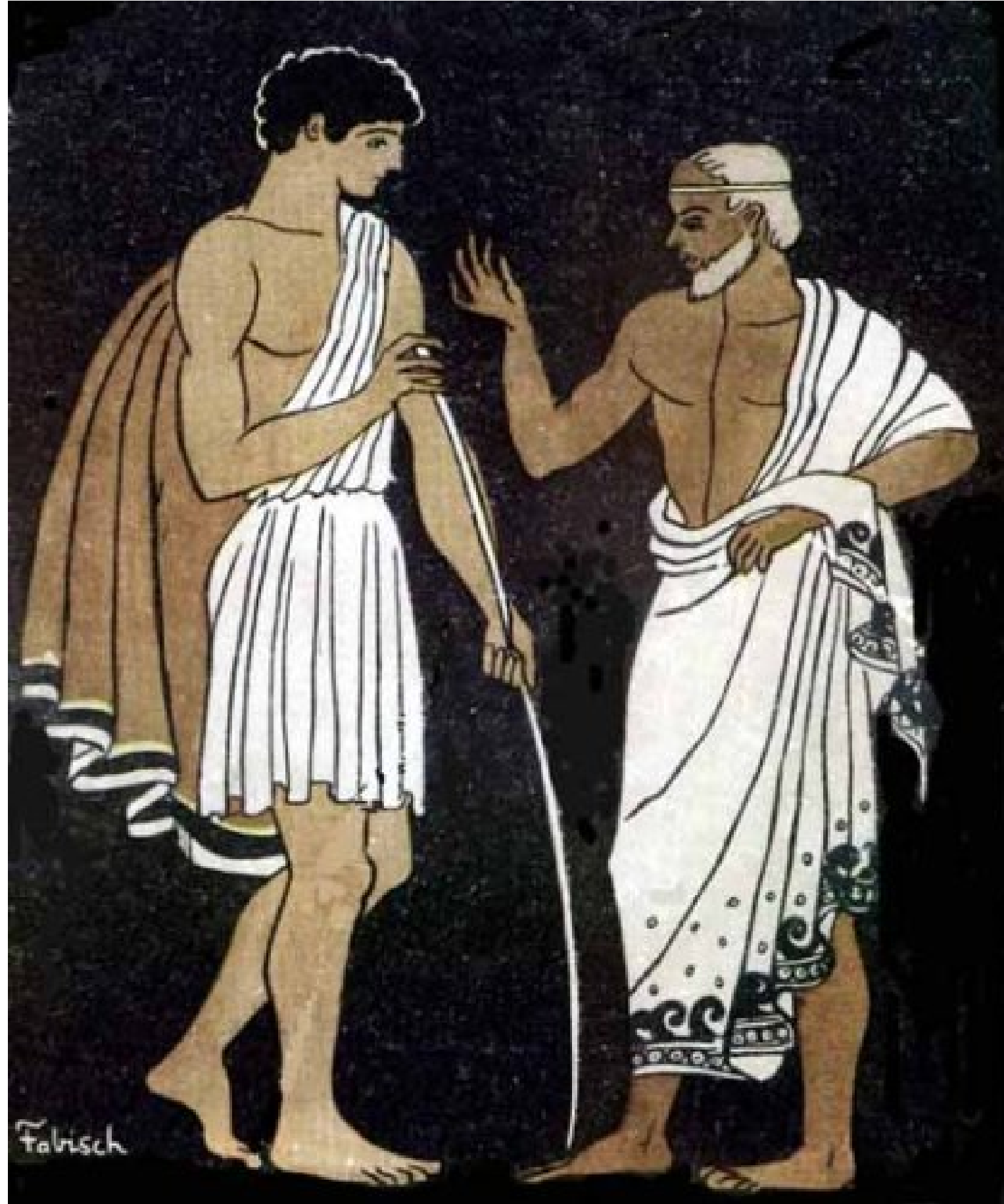
What Reviewers Want

- Promising start
- Sustainable track record
- Potential problems explained



“Past behavior is the best predictor of future performance.”

Your Mentor(s)



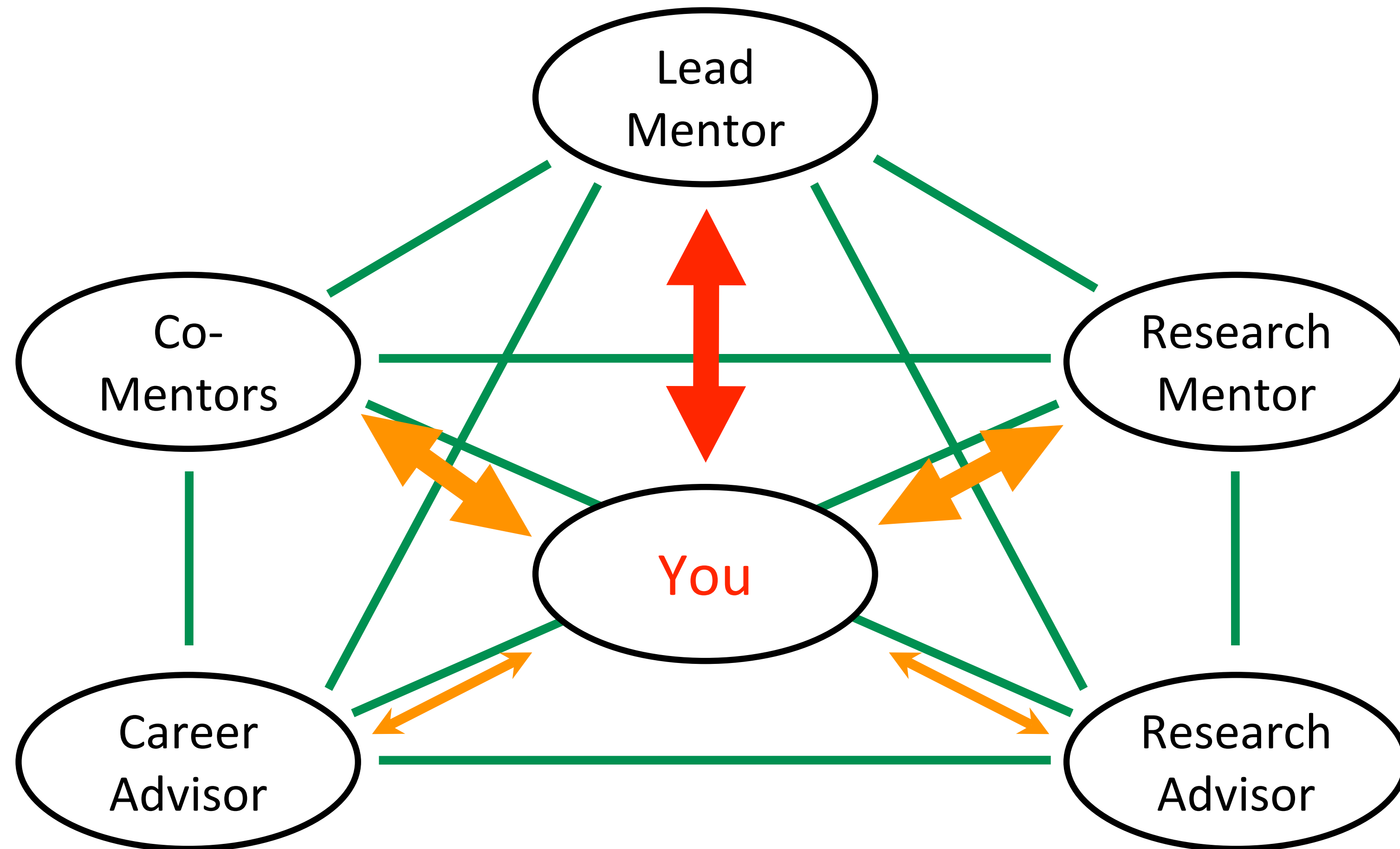
- Primary sponsor
- Recognized in proposed research area
- **Track record of success** in training
- Sufficient **independent support** to cover costs
- **Committed** to you & your career development

Advisory Committee

- Assist with developing program of study
- Monitor progress
- Advise mentor & applicant



Mentoring Team



Resources & Environment

- Facilities & key resources
- **Scientific** environment: why are you here?
- Institutional commitment

Chair's letter

Investing in your career

≥ 75% protected time

Faculty appointment at time of award

Not contingent on award

Your fit in long term plans

Remaining effort

Synergistic with K activities

Beware creeping responsibilities

Components of a Research Plan

- Introduction to revised application
-

- Specific aims 1 page
-

- Significance

- Innovation Research Strategy
12 pages *

- Approach

Specific Aims Page

- State concise goals of proposed research
- Summarize expected outcomes
- Summarize impact the results will have on the field
- List specific objectives of the proposed research

Test a stated hypothesis

Create a novel design

Solve a specific problem

Challenge existing paradigm

Address a critical barrier to progress

Develop new technology



Structure of the Specific Aims Page

- The ‘**funnel**’ – from a disease to a critical gap in knowledge
- The ‘**mousetrap**’ – your key preliminary data that can address this gap
- The ‘**pivot**’ – the new training required to make you a cool scientist
- The **goal** and the **hypothesis**
- The **aims** (statement, nugget, hypothesis, approach)
- The ‘**payoff**’ –
cool new science that (long-term) improves health care
completes training of a cool scientist

The Research Strategy

- **Significance** Importance of the problem
Critical barrier to progress
Scientific premise
Crucial literature that supports
How proposed work broadly improves the field
- **Innovation** Challenge / shift paradigms
Novel concepts / approaches
Advantages over current field
- **Approach** Strategy, methods, analyses
Feasibility (preliminary data)
Experimental design
Data analysis/resource sharing
Benchmarks for success
Potential problems
Alternative strategies
Hazards & select agents
Relevant biological variables

Putting It Together

- Follow the rules
- Know your audience
- Start early – **time is not your friend**
- Early critique – and often!
- Edit – **crafting**, proof-reading, copy-editing

The race for funding has no finish line...



...so, technically, it's more like a death march

What Could Possibly Go Wrong...

- You didn't follow directions
- You were descriptive & not mechanistic
- Your gap in knowledge isn't all that important
- Your approach lacks significance / innovation
- You lacked focus
- Your preliminary data didn't demonstrate feasibility
- Your project had a 'fatal flaw'

How a K Award is Reviewed

Study Section



- **Reviewers**
Discuss and score your grant
- **Scientific review officer (SRO)**
Runs the study section
Assigns applications to reviewers
Helps the Chair run the meeting
Prepares summary statements
- **Study section chair**
Directs the scientific discussion
Helps SRO with review issues

Who are the Reviewers?



- Selected by SRO
- Those with a conflict of interest excluded
- Reviewers **not necessarily** in your area of interest

What Reviewers Want

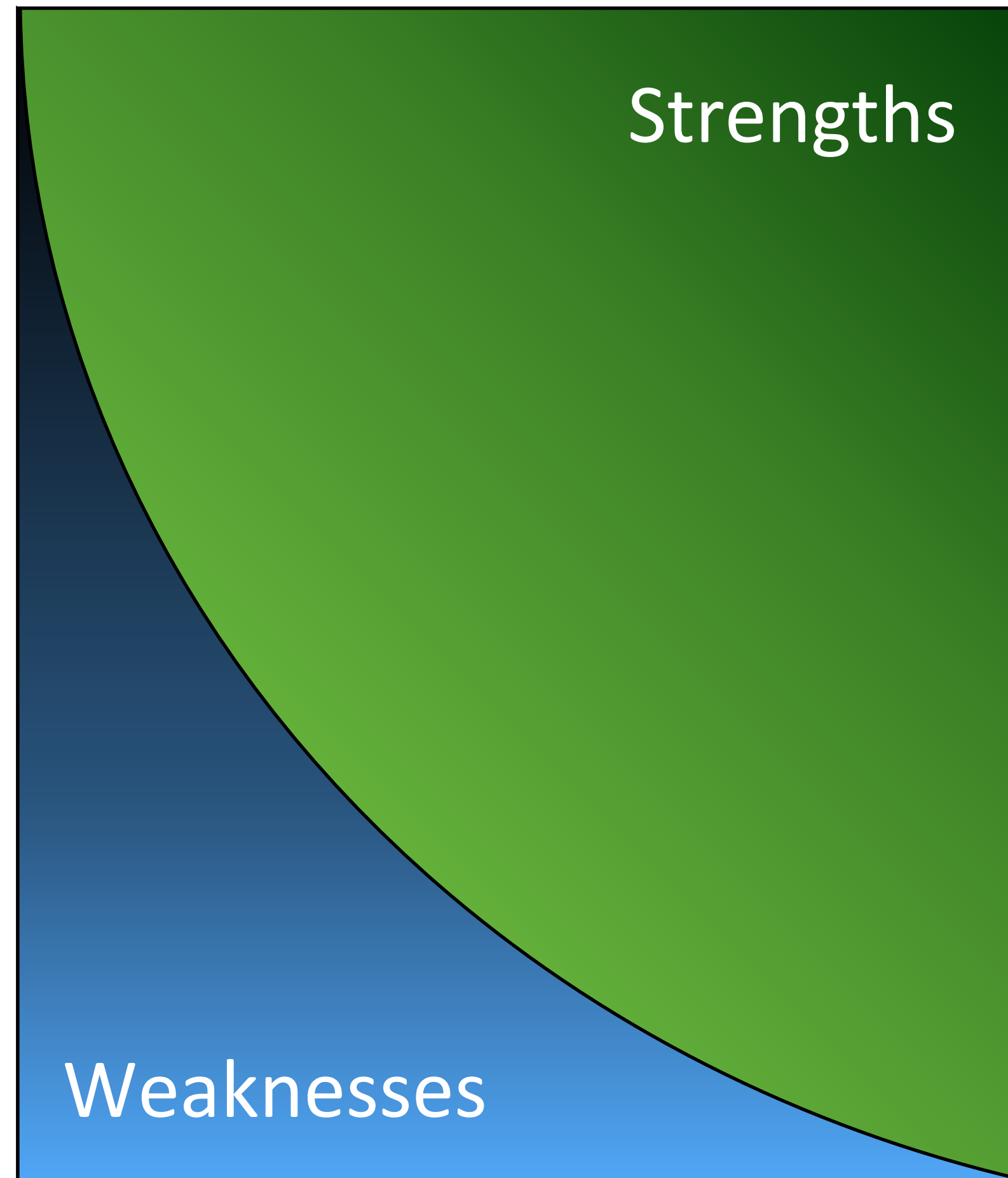
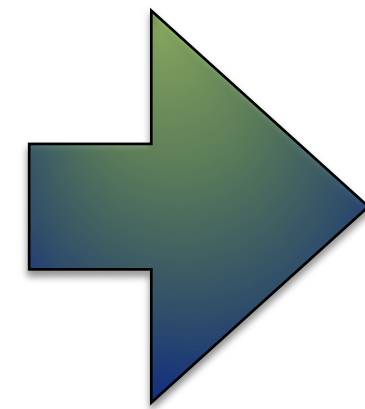
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Scoring Descriptions

Impact	Score	Descriptor
High Impact	1	Exceptional
	2	Outstanding
	3	Excellent
Moderate Impact	4	Very Good
	5	Good
	6	Satisfactory
Low Impact	7	Fair
	8	Marginal
	9	Poor



Review of K Award Application

Review Criteria and an Example of Scoring

Candidate	2
Development Plan	2
Mentor	1
Environment	1
Research Plan	4
Overall Impact	3

Study Section Discussion

- Applications ordered by preliminary scores
- Panel **streamlines** bottom third to half
- Discuss remaining applications in turn

Reviewers state preliminary scores

~ 15 minutes for discussion

Reviewers state final scores

- All members vote a **final** score

Generally stay within range

Must state why (openly) if go outside the range

What do the Reviewers Look At?

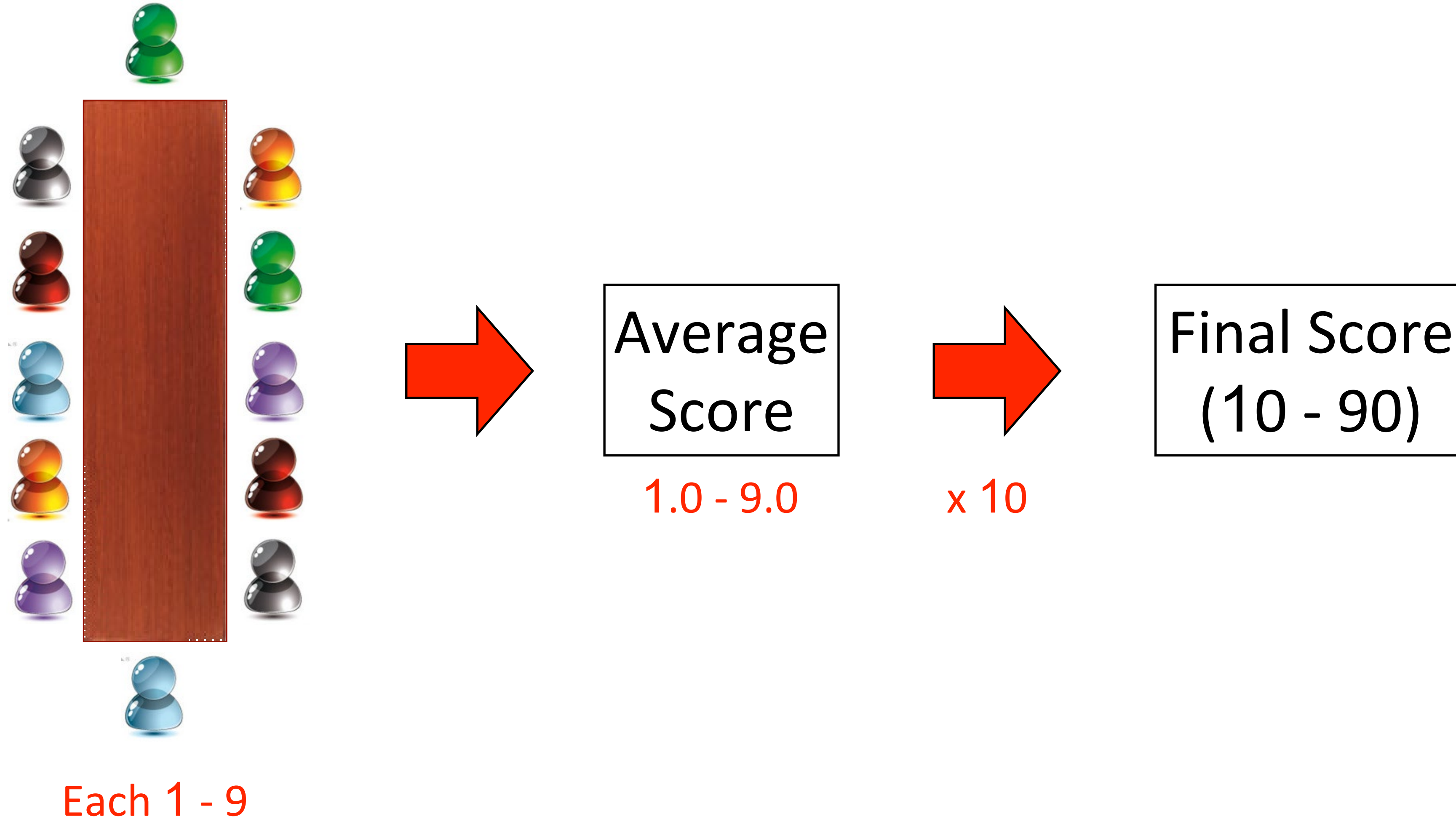
Presenters 1, 2 and 3 –

- The entire application
- Your published papers
- Key references

All the other reviewers –

- Specific aims page
- Biosketch
- Career development plan timeline

Calculating a Final Score



Get the Reviewers on Your Side

- **Narrative**: create a story about **you**
- New training = career development
- Research project is the training vehicle
- Hypothesis driven, high impact aims
- Preliminary data supports **key** points in approach
- Focused, focused, **focused!**

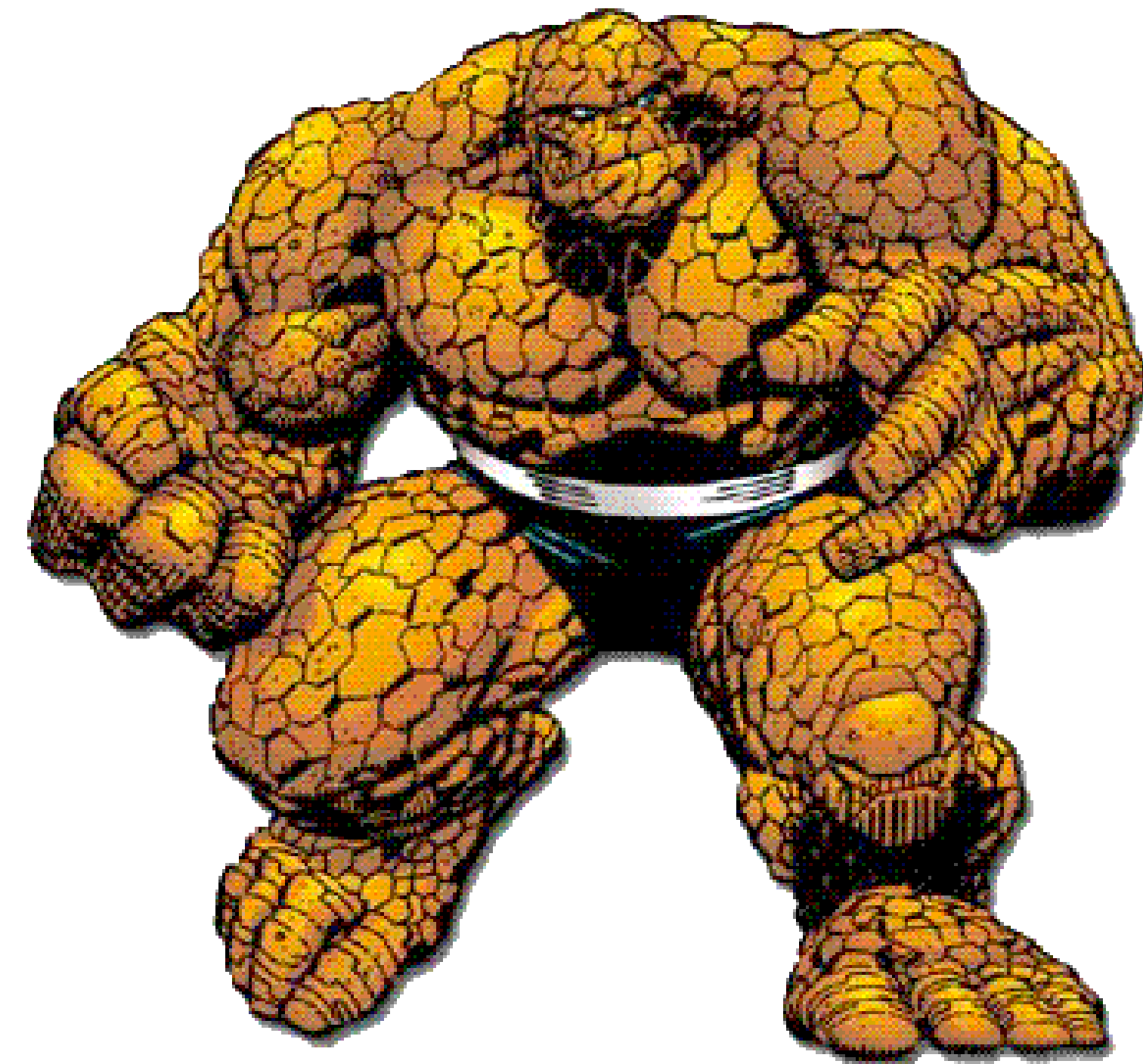
If You Are Not Funded

- **Not** the end of the world
- Get reviews
- Discuss with mentors
- Write an A1



The Reviews

- Have a thick skin
- Reviewers may disagree
- Reviewers are always 'right'
- Identify & respond to all specific issues
- The 'fundamental flaw' issue



Review of the A1 Application

- Reviewers may be different
- Reviewers **have** the old review
- Asked to review afresh
- “Responsiveness” not a guarantee of success

Resources at Chicago

- Little Red Schoolhouse
- ITM K-writing workshop
- Section grant writing workshops
- BSD seminars / workshops
- R Studio



Questions