Early-Career Development (K) Awards for Global Cancer Research at the National Institutes of Health:

Lessons from Funded K Awards: Tips for Grant Writing

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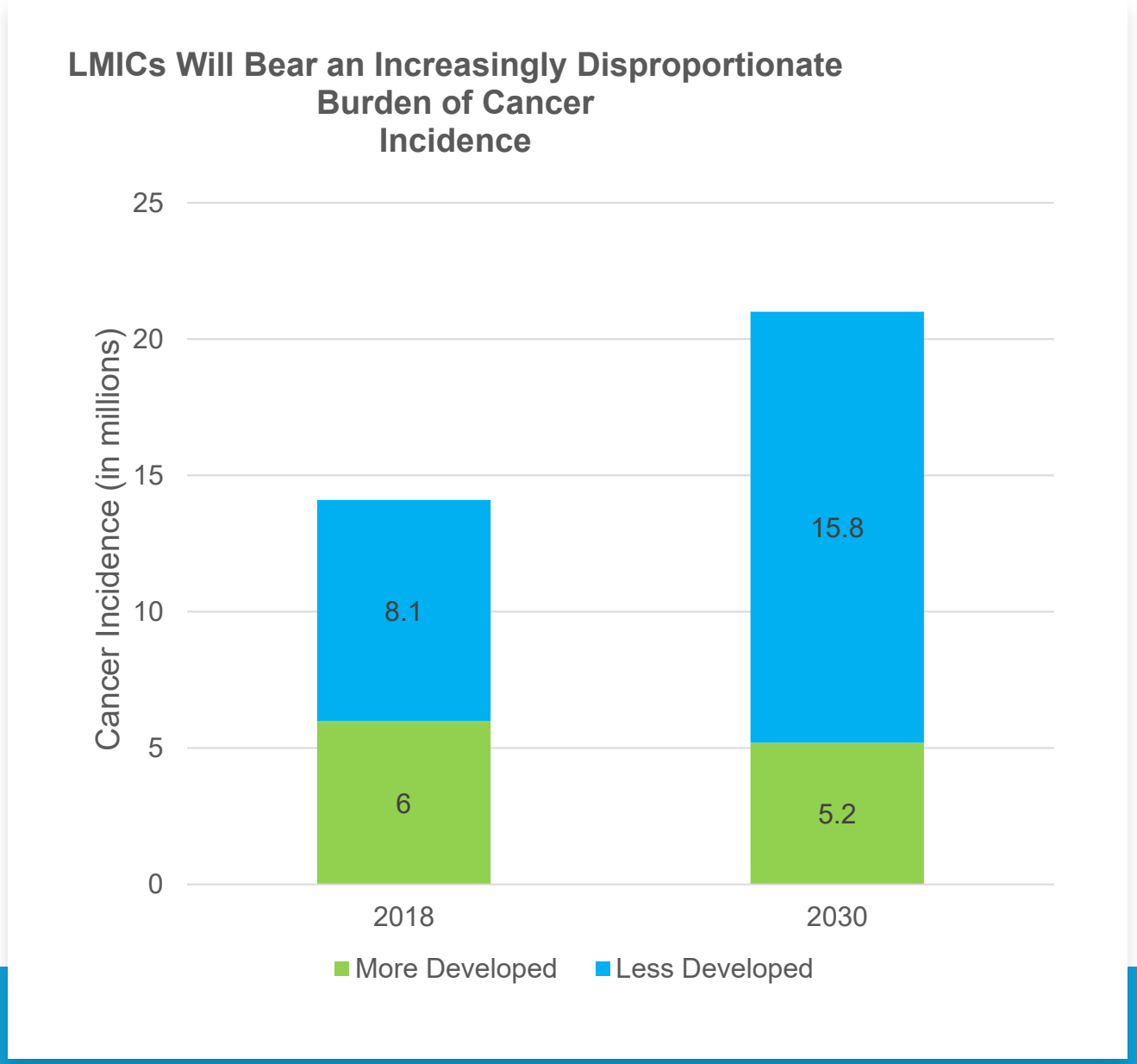
Overview: Analysis of NIH K Awards

A. Purpose and Rationale
    - K01, K08, and K43
B. Methods
C. Key Findings

Why K Awards Matter for Global Cancer Research

- Cancer burden in low- and middle-income countries (LMICs) is sharply rising and accounts for the majority of global cancer deaths
- Substantial gap in research that prioritizes LMICs and their cancer control needs
- To close the gap, it's crucial to train a skilled cancer research workforce and support early-career investigators' transition to independent researchers.



Career Development (K) Awards

- **Individual mentored research training for research Independence**
  - **K01 –** Research Scientist Development Award
  - **K08 –** Clinical Scientist Award pathway
    - **K43 –** International Research Career Development Award

Data Analysis of NIH K Awards from FY2016 - FY2024

Objectives:

Obtain descriptive statistics of the funded application

- The success rate of the K01, K08, & K43 applications and trends
- The success rate of the cancer-related applications and trends

Identify key predictors of successful applications

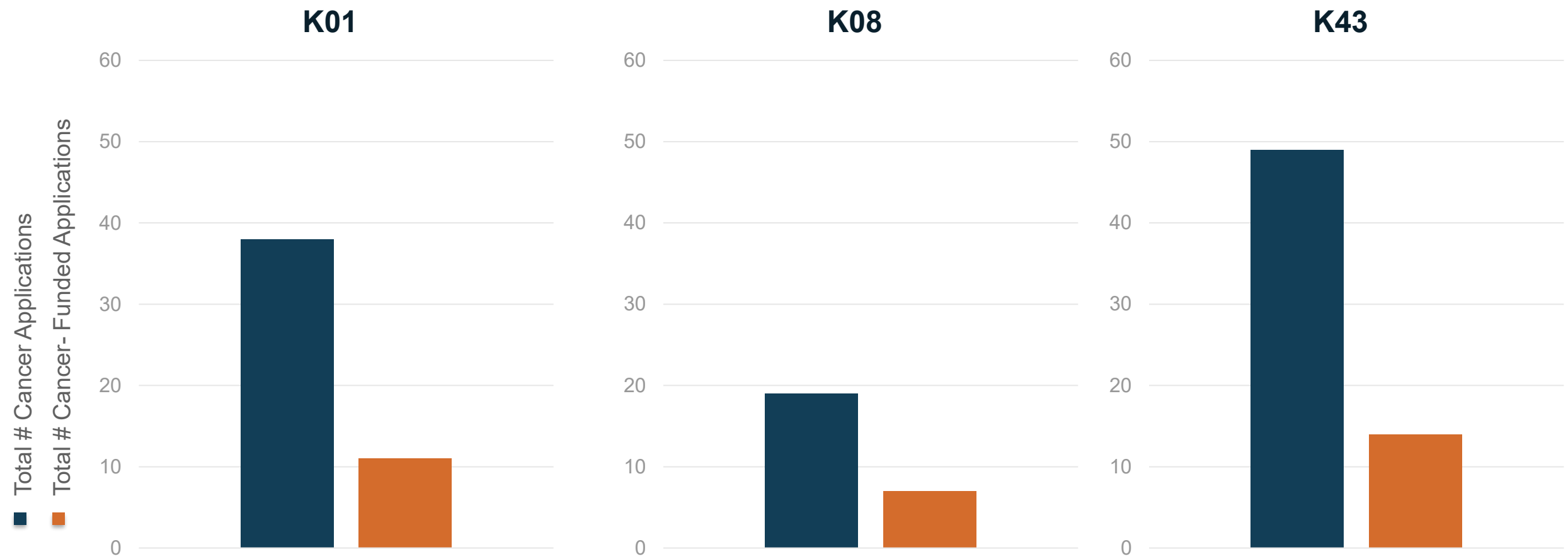
- Did the candidate receive prior funding?
- How long has the candidate been doing cancer research?
- Publications? First author publications?

Methods

- NIH Data Sources
- Reviewed funded and unfunded Applications
  - Biosketches
  - Publication Record
- Reviewed Summary Statements

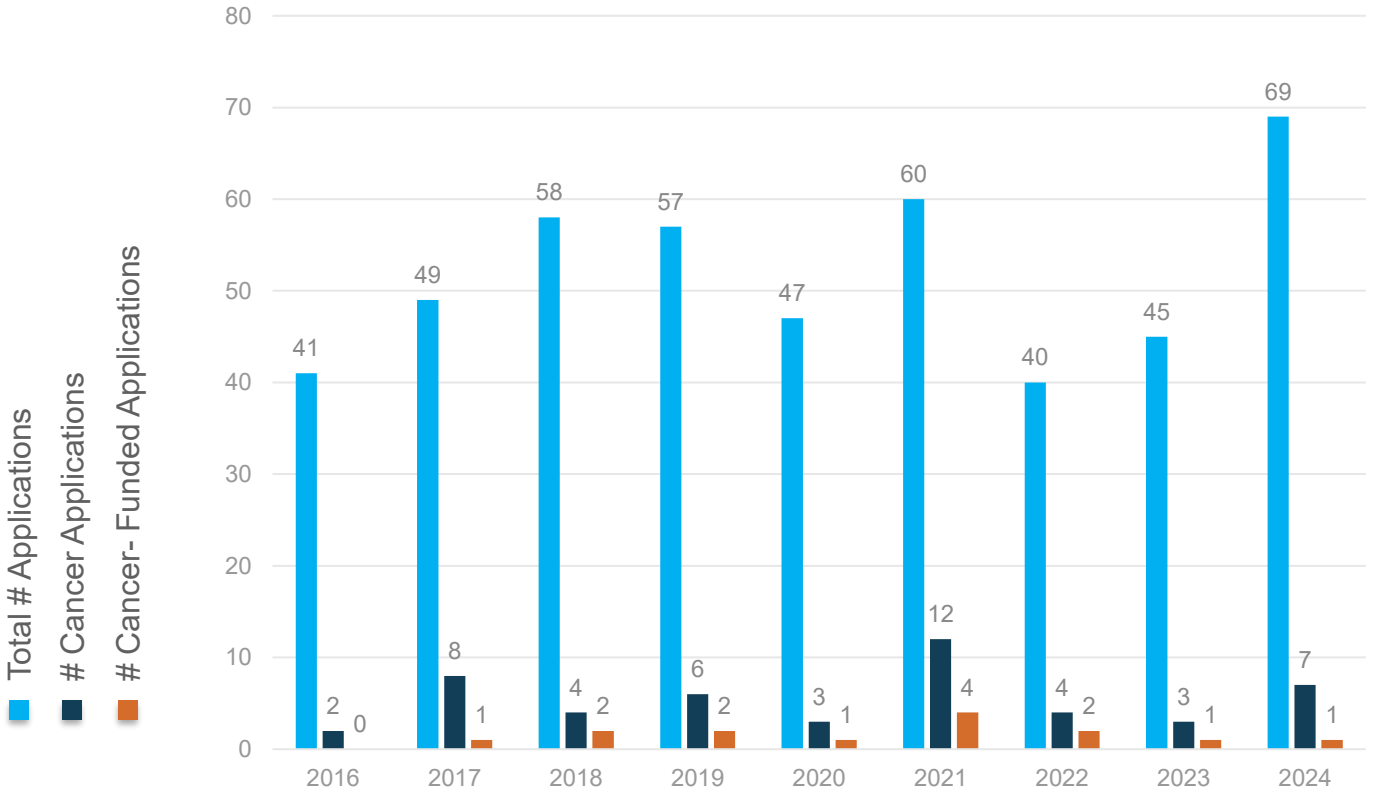
Goal: Identify patterns of success

NIH Cancer-Funded K Grants with LMIC Component FY2016 - 2024



Award Rate(%):	28.9	36.8	28.6

NIH K43 Cancer Applications from FY2016 - FY2024



Year	Total # Applications	# Cancer Applications	# Cancer-Funded Applications	Success Rates (%):
2016	41	2	2	0.0%
2017	49	8	7	12.5%
2018	58	4	2	50.0%
2019	57	6	4	33.3%
2020	47	3	2	33.3%
2021	60	12	8	33.3%
2022	40	4	2	50.0%
2023	44	3	2	33.3%
2024	69	7	6	14.3%
Grand Total	465	49	35	28.6%

Success Rates based on # of cancer applications

What Separates Funded from Non-Funded Applications?

Across all Ks, funded applications had:

- A **career development plan** well-aligned with the research plan
- A well-developed, feasible **research plan**
- Strong and clearly defined **mentorship plan and mentors' roles**
- **Institutional commitment** and protected time
- Evidence of a **clear trajectory toward independence**

Scored Review Criteria for K Applications
Candidate
Career Development Plan/Career Goals and Objectives
Research Plan
Mentors, Co-Mentors, Consultants, Collaborators
Environment & Institutional Commitment to Candidate

Tip 1: Apply at the Right Career Stage

- Strong research experience correlates with funding success
- Research experience
  - Collaborate
  - Publish
  - Apply for smaller grants
- Resubmissions can succeed

Tip 2: Devote Time to Research Plan

- A feasible research plan
- Well-developed specific aims
- Strong methodological detail
- Appropriate sample size & power justification
- Innovation balanced with practicality
- Realistic scope for the award period

Tip 3: Build a Strong, Engaged Mentorship Team and Plan

Mentorship was an important differentiator of funded applications

- Relevant content expertise and publications in the research area, strong funding history, and demonstrated commitment to your career development
- Dual mentorship, with U.S. PI + in-country/regional mentor – required for the K43 and is highly valued, as it provides local support and international collaboration
- Include specific mentoring plans: defined mentors' role, training activities, milestones, meeting frequency, and benchmarks

Tip 4: Tell a Compelling Story

The candidate section score was the main predictor of funding

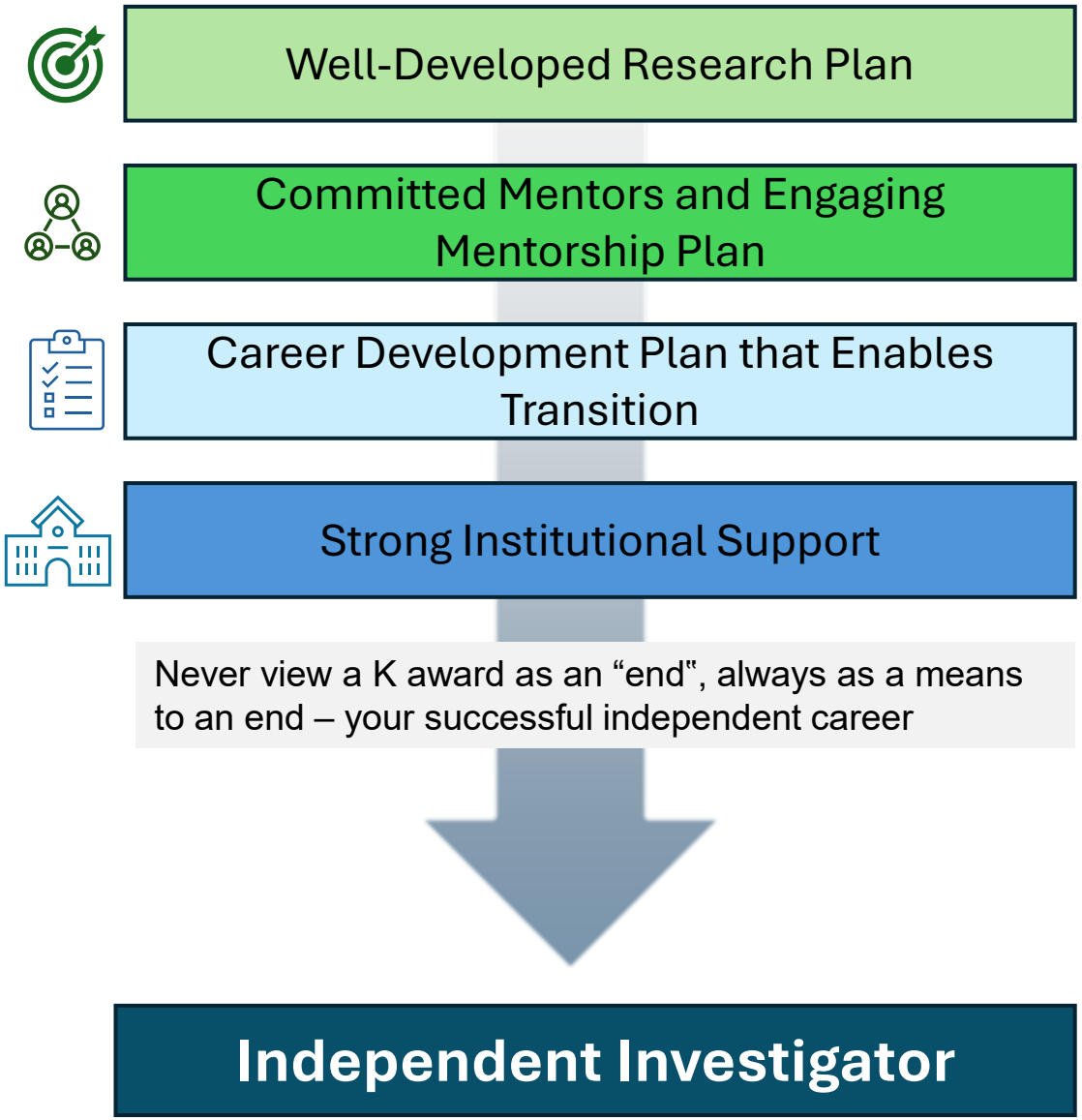
- Tell a compelling story of your professional journey
- Explain your career choices and emphasize why you are committed to a research career in the area you are in
- Show a clear progression from your prior experiences to your future ambitions
  - If you were a D43 trainee, make that connection explicit
  - Outline short-term and long-term career goals and how this award helps you get there

Tip 5: Write a Strong Career Development Plan/Goals & Objectives

Reviewers want to see a logical, justified path to independence

- Link proposed training activity to your specific research aims and career development goals
- Include measurable benchmarks and deliverables, not just courses attended, but outcomes achieved
- Show the plan is specific to the career stage and enables you to obtain career goals
- Be specific about how the K award fills a specific gap that prepares you to become an independent investigator

The Big Picture: Building Toward Independence



NIH Resources

- NIH Grants Process - https://grants.nih.gov/grants-process
- General Grant Writing Tips - https://grants.nih.gov/grants-process/write-application/general-grant-writing-tips
- NCI Grants & Training - https://www.cancer.gov/grants-training
- NIH career development awards – Individual Career Development – K Grants
- https://grants.nih.gov/funding/funding-categories/research-training-and-career-development/individual-career
- matchmaker tool RePORT 〉RePORTER - find out about what projects were previously funded in your research area
- Recently created videos worth spending 20 minutes viewing…. http://cms.csr.nih.gov/ResourcesforApplicants/InsidetheNIHGrantReviewProcessVideo.htm
- NIH funding strategy: https://grants.nih.gov/news-events/nih-extramural-nexus-news/2025/11/implementing-a-unified-nih-funding-strategy-to-guide-consistent-and-clearer-award-decisions

Non-NIH Resources

- Online tools for grant writing
- http://www.northwestern.edu/climb/resources/w ritten-communication/index.html
- https://www.northwestern.edu/climb/resources/written-communication/Effective_NIH_Research_Career_Development_Proposals_Overview.pdf
- https://media-learn.partners.org/site_media/media/document/3ece7433-77e9-4537-ad23-c859fad2580f.pdf
- https://www.biosciencewriters.com/NIH-Grant-Applications-The-Anatomy-of-a-Specific-Aims-Page.aspx
- https://www.uab.edu/medicine/cfar/images/How_to_Write_Specific_Aims_Page.pdf

Thank You

https://www.cancer.gov/about-nci/organization/cgh

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