Funding Mechanisms for Trainees (And Junior Faculty)

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Disclosures

• Sponsored Research: Bristol Myers Squibb
Overview

- Protected Time/Start-up Package
- NIH Funding
  - K awards & Institutional K awards
  - Loan Repayment Program
- Society & Foundation Awards
- Cooperative Groups
- Industry
Why are we having this talk?

Narahari et al, JACS 2018
Surgeon-scientists are highly productive

- Increase in grant impact over time
- High K $\rightarrow$ R conversion
- Surgeons make great scientists!

Narahari et al, JACS 2018
A Roadmap for Aspiring Surgeon-Scientists in Today’s Healthcare Environment

Allan M. Goldstein, MD,* Alex B. Blair, MD,† Sundeep G. Keswani, MD,‡ Ankush Gosain, MD, PhD,§ Michael Morowitz, MD,¶ John Kuo, MD, PhD,‖ Matthew Levine, MD, PhD,** Nita Ahuja, MD,†† and David J. Hackam, MD, PhD†††, Basic Science Committee of the Society of University Surgeons

Supportive Environment
- Department with a track record of success
- Available resources, facilities, equipment, and support staff
- Protected time
- Dedicated lab space
- Access to collaborators

Committed Mentors
- Experienced investigator
- Accessible and committed to mentoring
- Network of mentors to provide varied skill sets

Success as a Surgeon-Scientist

Financial Support
- Competitive salary that values academic contributions
- Adequate start-up package
- Achievable benchmarks for renewed institutional support

Social Support
- Supportive family and friends
- Work-life integration
- Realistic expectations

Table 1. Timeline for the Initial Years of a Surgeon-Scientist’s Career

<table>
<thead>
<tr>
<th>Early Years</th>
<th>Goals and Milestones</th>
</tr>
</thead>
</table>
| Year 1 | Identify the scientific questions to be tackled  
Obtain skills necessary to achieve scientific goals  
Master the relevant literature and knowledge gap  
Begin to obtain preliminary data  
Hire a research technician and/or trainee or fellow  
Submit applications for institutional approvals  
Identify a team of mentors  
Attend research skills and grant writing workshops  
Start submitting grant applications |
| Years 2–3 | Become active in national societies  
Identify collaborators  
Begin to publish initial manuscripts  
Maintain an up-to-date curriculum vitae  
Continue applying for research grants |
| Year 4 and beyond | Participate in manuscript and grant reviews  
Become familiar with requirements for academic promotion  
Be persistent and resilient! |

Ann Surg 2018
Protected Time

• Invaluable
• Need to know clinical metric
  – What does 70% clinical mean?
    • Need to know the denominator
      – # RVU, # cases, days per week?
• Very hard to get protected time back after you lose it
  – Take it from the start
Start-up Package

• How much?
  – Time vs. $$$
  – Will salary be compensated during “start-up”
• How long? When does it start?
• Who? Personnel
• Space & Equipment?
NIH Programs
NIH Funding-K awards

- **K08**-the jackpot for early investigators
- 3-5 years
- Support ($50,000) + salary (cap $187,000)
- Protected time (75% research)
- Focus on mentor component
- Goal: achieve independence
  - K → R transition
NIH Funding-K awards

• Typical cycle includes resubmission
• First submission to funding: 20 months
  – Need start-up, foundation grants, institutional awards
  – Success rate ~ 45%
• Not the sole mechanism for obtaining research independence
NIH Funding - Other K awards

- K12/ KL2/ TL1 Clinical Scientist Institutional Career Development Program Award
- Held by institution/ established investigator, not individual
  - Set # of slots
- Some “flexibility” in time commitment
  - “Protected time can include effort treating patients on clinical trials”
  - Formal research training - Masters degree

- Can apply for K08 after
Example K12/KL2/TL1 in Texas

- Texas Regional CTSA Consortium
  - UT-Houston: KL2 program: Center for Clinical and Translational Sciences
  - MD Anderson: Paul Calabresi Career development Award for Clinical Oncology-NIH
  - UT Southwestern: Clinical Scholars Track: Center for Translational Medicine
  - UT San Antonio: Institute for Integration of Medicine & Science
  - UTMB: KL2 program: Institute for Translational Sciences
NIH Loan Repayment Program - TO YOU!

• Repay eligible debt up to $35,000/ year
  – Must have $140,000 at contract start date
  – Initial: 2 years
  – Renew yearly until debt paid
• Fellows eligible: $17,000/ year ($68,000 debt)
NIH Loan Repayment Program—TO YOU!

- Funding rate 56% for MD, 68% MD/PhD
- Clinical, Pediatric, Health Disparities, Disadvantaged Backgrounds, Contraception & Infertility
- Independent or Mentored
- 20 hours research/week
- Can have other NIH grants
- Agency for Healthcare Research and Quality
- K08 and K01 mechanisms
Society/Foundation Awards & Cooperative Groups
## Society Awards

<table>
<thead>
<tr>
<th>Funding source</th>
<th>Applied?</th>
<th>Due</th>
<th>Obtained?</th>
<th>$ (Annual)</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS</td>
<td>Yes</td>
<td>Aug 2015</td>
<td>Yes</td>
<td>40,000</td>
<td>1</td>
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<tr>
<td>NIH Loan Repayment Program</td>
<td>Yes</td>
<td>Dec 2015</td>
<td>Yes</td>
<td>35,000</td>
<td>2</td>
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<tr>
<td>ASCRS Limited Project Grant</td>
<td>Yes</td>
<td>Mar 2016</td>
<td>Yes</td>
<td>50,000</td>
<td>1</td>
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<tr>
<td>ASA</td>
<td>Yes</td>
<td>Jun 2016</td>
<td>No</td>
<td>75,000</td>
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<tr>
<td>ACS Clowes Award</td>
<td>Yes</td>
<td>Aug 2016</td>
<td>No</td>
<td>45,000</td>
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<tr>
<td>Society of MSK Award</td>
<td>Yes</td>
<td>Apr 2016</td>
<td>Yes</td>
<td>65,000</td>
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<tr>
<td>ASCO Career Development Award</td>
<td>Yes</td>
<td>Sep 2016</td>
<td>Pending</td>
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<tr>
<td>ASCRS Career Development Award</td>
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<td>Oct 2016</td>
<td>Pending</td>
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<tr>
<td>ACS Faculty Research Fellowship</td>
<td>Yes</td>
<td>Nov 2016</td>
<td>Pending</td>
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<tr>
<td>MSK Faculty Research Award</td>
<td>Yes</td>
<td>Dec 2016</td>
<td>Pending</td>
<td>75,000</td>
<td>2</td>
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<tr>
<td>SSO Clinical Investigator Award</td>
<td>No</td>
<td>Jan 2017</td>
<td>n/a</td>
<td>50,000</td>
<td>2</td>
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<tr>
<td>SSAT Career Development Award</td>
<td>No</td>
<td>Jan 2017</td>
<td>n/a</td>
<td>50,000</td>
<td>2</td>
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<tr>
<td>SSAT/ASCRS Joint Research Award</td>
<td>Yes</td>
<td>Feb 2017</td>
<td>In process</td>
<td>50,000</td>
<td>2</td>
</tr>
</tbody>
</table>

J. Joshua Smith, MD, PhD
http://www.aasurg.org/blog/early-career-funding-opportunities/
Society Grants - General Considerations

- First 1-3 years in practice
- 1-2 years of support
- $35,000-$50,000/ year
- Most require mentor
- Almost all societies have these
Innumerable Foundations
All stages of career
Generally 1-2 years
~$50,000-wide range
Grants department has lists
Cooperative Groups

• Many surgical subspecialties
  – Eastern Association for the Surgery of Trauma (EAST)
  – Alliance/ SWOG/ ECOG-ACRIN/ COG
  – Lung Cancer Study Group

• Supplemental funding for putting patients on trial
  – ~$2000/ patient-Alliance

• Also have grants for research on protocol tissue
Industry
Industry Funding - Tricky

• 3 general concerns
  1. Interactions promote research misconduct
  2. Commercial intrusion leads to bias, limitations on academic freedom → decreased quality
  3. Reduced public trust
• Significant regulations
  – Mandatory reporting

Stossel, NEJM 2005
Industry-Academia Interaction

Generates knowledge and manpower
- Education
- Research
- Service

Government
Here to support

Conceptualization to Commercialization

Academia

Industry
Utilizes knowledge and manpower
- Profit
- Growth
- Research

Goals
Drug costs alone:
- 40 patients
- ~$5000/ dose nivolumab
- ~$25,000/ dose Ipilimumab
- Does not cover:
  - personnel
  - translational studies

Industry Funding-Sometimes Necessary

Bristol-Myers Squibb
NCT03307616
Industry Funding - Different Avenues

• **Strategic Partnerships**
  – Institutional
  – Usually multi-million dollar
  – Individual applies to institution for funding

• **Investigator-Initiated Trials (IIT)**
  – Researcher applies directly to company
  – Similar to a grant
Industry Funding—What I am **NOT** talking about

- Scientific Advisory Board
- Paid Speaker
- Member of Board of Directors
- Consultant
- Sponsor-Initiated Trial
  - Industry-owns patentable inventions
  - Data sent to Industry
Investigator-Initiated Trials (IIT)

• Device or Drugs
• Generally early stage clinical trials
• Investigator maintains the data
• Sponsor-Investigator Agreement-standard
• Need infrastructure
  – Budget expert-very expensive
  – IND/ IDE through FDA
• Many academic centers have offices to help
Conclusions

• Variety of funding mechanisms for trainees/ junior faculty
• K mechanism-secure time
  – Not only way to independence
• Early Career Awards for most societies
• Many Foundation grants
• Industry can be helpful if done carefully