Addressing the Physician / Clinical-Scientist Challenge: An Update for the NIH Advisory Committee to the Director

Michael Lauer (OER) for Sherry Mills (OER), Kay Lund(OER), Alison Hall (NIGMS), Gary Gibbons (NHLBI), Steve Katz (NIAMS), Jon Lorsch (NIGMS), Doug Lowy (NCI), JJ McGowan (NIAID), and Larry Tabak (NIH OD)

113th Meeting of the NIH ACD, December 8, 2016
Building 31C6, Room 6, NIH Campus, Bethesda, MD

Brief Timeline

• June 2014: ACD PSW WG Report
  – 9 Recommendations: LRP, Pilot Programs
• 2015-2016: Implementation WG
• Workshops 2016: Pilots, GME
• July, 2016: ICD Discussion
• Throughout: Not only MDs – also dentists, veterinarians, RN-PhDs, others
• Within NIH control
  – Fewer younger physicians receive RPGs
  – Fewer applications/awards
  – Timing of research training

• External challenges
  – Shifting business models
  – Dramatic increases in tuition costs
Possible Solutions

• Fund early career MD-scientists sooner
  – Extra ESI points for R01s
  – F/R00, K/R00, R35s
• Help them stay funded
  – Improve first competitive renewal success
• Aim for higher RPG success rates overall

Landscape

• Within NIH control
  – Fewer younger physicians receive RPGs
  – Fewer applications/awards
  – **Timing of research training**
• External challenges
  – Shifting business models
  – Dramatic increases in tuition costs
Long Hauls, Long Breaks

Possible Solutions

• Post-MD research (residency) training
  – R25 or other mechanisms
  – Focus on competencies and milestones
  – Medical Specialty Board approval
  – Could be combined with PhD

• Example: Hopkins medical genetics

Thanks to Kay Lund, Sherry Mills, Alison Hall
Hopkins Medical Genetics Training Grant
Landscape

• Within NIH control
  – Fewer younger physicians receive RPGs
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  – Timing of research training

• External challenges
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Changing Hiring Practices

Figure 1b: Percentage distributions of newly hired, full-time clinical M.D. faculty by tenure status, 1984-2009

Changing Tenure Demographics

Figure 2: Absolute numbers of full-time clinical M.D. faculty by tenure status, 1984-2009

MD-PhDs: Who Become Full-Time Faculty?

- Cohort of 1846 graduates (Years 2000-2005)
- 52% full-time faculty appointments
  - 94% were in clinical science departments
- Associated with:
  - MSTP; lower debt; F30/F31
  - Research during residency
  - Practice specialty (Med, Ped, Neuro, Path)
  - Not gender, race/ethnicity, graduation year


"…our observations also might reflect an increase in the extent to which more contemporary MD-PhD program graduates pursue career paths outside academic medicine, including research-related careers in nonmedical-school-affiliated research institutes (e.g., NIH and industry) or full-time clinical practice in nonacademic settings.”


Lots and Lots of Debt …

<table>
<thead>
<tr>
<th>Education Debt (including premed) of:</th>
<th>Public</th>
<th>Private</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100,000 or more</td>
<td>79%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>$200,000 or more</td>
<td>41%</td>
<td>53%</td>
<td>45%</td>
</tr>
<tr>
<td>$300,000 or more</td>
<td>8%</td>
<td>18%</td>
<td>12%</td>
</tr>
<tr>
<td>Planning to enter loan forgiveness/repayment program:</td>
<td>40%</td>
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<table>
<thead>
<tr>
<th>Education Debt Breakdown</th>
<th>% Graduates</th>
<th>Median</th>
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<tbody>
<tr>
<td>Premedical Education Debt</td>
<td>33%</td>
<td>$24,000</td>
</tr>
<tr>
<td>Medical Education Debt</td>
<td>78%</td>
<td>$180,000</td>
</tr>
</tbody>
</table>

*Source: FIRST analysis of AAMC 2015 GQ data. Education debt figures include premedical education debt plus medical education debt.

Possible Solutions

• Expand use of LRP
  – Debt relief to incentivize research
• Work with Chief Officer of SWD
  – Enhance NRMN

What’s Next?

• Call for novel models
• Looking for reactions
  – Today
  – With invited WG next Friday, December 16
Modified Medical Scientist Training Program

- Separate FOA from parent T32
  - Focus on physician-scientist training
- What is the optimal timing?
- How to integrate clinical & research work?
- Can time to dual degree be shortened?
Modified MSTP (continued)

- Recruitment timing
  - Increase in first 2 years of medical school
  - Better to identify dedication to research
  - Benefits for both programs and students

Doctorate or Masters in Fellowship

- Consider multiple career stages
- Research PhD after training
- Masters -- MPH, bio-informatics, other
- Multiple mentor model
- Recruit diverse candidate pool
Proposals for Discussion

• Modified MSTP
• Research in residency
• Doctorate (or Masters) in Fellowship

Appendix
More Women Graduating

Figure 14: Number of U.S. Medical School Graduates by Gender, 1980–2011

Under-Represented Minorities

Figure 15: Number of U.S. Medical School Graduates by Race and Ethnicity, 2002–2011

Numbers of MD-PhD and MD Graduates

Thanks Kay Lund