The Myth of Meritocracy:  
Global Assessment of Applicants

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Disclosures

Dr. Jennifer Spicer has no relevant financial relationships with commercial interests and will not be discussing non-FDA approved uses of any drugs.
Gratitude

Wendy Armstrong  Varun Phadke  Zanthia Wiley  Ahmed Babiker

Gratitude

Wendy Armstrong  Kimberly Manning
Learning Objectives

• Recognize that diversity and excellence are intertwining rather than competing concepts.

• Explain why our current selection processes perpetuate inequity by promoting homogeneity.

• Describe individual- and system-level changes that can be made to promote equity in selection processes.

Disclaimer

Not a comprehensive overview.

Intended to start a discussion about current selection processes for programs, awards, and other opportunities.
Disclaimer

Outline

The Problem  Current Process  Moving Forward  Success Stories
Racial inequity persists in medicine


UIM includes Black, Hispanic, American Indian and Native American, & Native Hawaiian and Pacific Islander
As does economic inequity…

> 50% of medical students have parental income in the top 5th quintile

Why does this lack of diversity persist?

Diversity

Excellence

Diversity leads to excellence

Diversity

Excellence


Diversity improves outcomes in many areas

Patient outcomes

Innovation

Publication #

We should aim to maximize diversity

Steps required to achieve diversity in medicine

Pipeline ➔ Recruitment ➔ Selection ➔ Retention
Selection processes encompass many things

Outline

The Problem

Current Process

Moving Forward

Success Stories
Steps in the selection process

1. Pipeline
2. Recruitment
3. Selection
4. Retention

Part 1: Screening
Part 2: Interview

Selection processes are meant to promote meritocracy.

Steps in the selection process

Pipeline → Recruitment → Selection → Retention

Part 1: Screening

Part 2: Interview

Ask yourself the following questions:

- How do you define a "successful" applicant?
- What criteria do you use when reviewing applicants?
- How well do you think those criteria predict "success"?
What are their chances of acceptance to residency?

<table>
<thead>
<tr>
<th>Medical School</th>
<th>Johns Hopkins University</th>
</tr>
</thead>
<tbody>
<tr>
<td>USMLE Step 2 CK</td>
<td>270 (96th percentile)</td>
</tr>
<tr>
<td>AOA status</td>
<td>Yes</td>
</tr>
<tr>
<td>Volunteering</td>
<td>many, + leadership</td>
</tr>
<tr>
<td>Publications</td>
<td>3 first author publications</td>
</tr>
<tr>
<td>Letters</td>
<td>&quot;Give my highest recommendation&quot; from well-known full professor</td>
</tr>
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<table>
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<th>Medical College of Georgia</th>
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</tr>
<tr>
<td>AOA status</td>
<td>No</td>
</tr>
<tr>
<td>Volunteering</td>
<td>intermittent volunteering</td>
</tr>
<tr>
<td>Publications</td>
<td>1 clinical vignette poster</td>
</tr>
<tr>
<td>Letters</td>
<td>&quot;Recommend without reservation&quot; from an assistant professor</td>
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Differing access to "capital" leads to systemic inequity

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<td>Letters</td>
<td>&quot;Recommend without reservation&quot; from an assistant professor</td>
</tr>
</tbody>
</table>

The concept of meritocracy is a myth

Chosen by whom?

"A system, organization, or society in which people are chosen and moved into positions of success, power, and influence on the basis of their demonstrated abilities and merit"

Provided equal resources & opportunities?

Who decides the metrics?

Do the metrics predict what we want?

"a praiseworthy quality"

Why do we continue to believe in meritocracy?

The American Dream

Anecdotes of Exception

How helpful are these metrics?

Medical School:  
- Johns Hopkins University  
USMLE Step 2 CK:  
- 270 (96th percentile)  
AOA status:  
- Yes  
Volunteering:  
- Many, + leadership  
Publications:  
- 3 first author publications  
Letters:  
- "Give my highest recommendation" from well-known full professor

Medical School:  
- Medical College of Georgia  
USMLE Step 2 CK:  
- 235 (25th percentile)  
AOA status:  
- No  
Volunteering:  
- Intermittent volunteering  
Publications:  
- 1 clinical vignette poster  
Letters:  
- "Recommend without reservation" from an assistant professor

Metrics used are skewed toward a few competencies

<table>
<thead>
<tr>
<th>Criterion used by IM PDs in residency selection</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required clerkship grades</td>
<td>4.14</td>
</tr>
<tr>
<td>No. of clerkship honors</td>
<td>3.77</td>
</tr>
<tr>
<td>USMLE Step 2 CK</td>
<td>3.75</td>
</tr>
<tr>
<td>Step 2 CS Pass</td>
<td>3.66</td>
</tr>
<tr>
<td>Class rank</td>
<td>3.59</td>
</tr>
<tr>
<td>AOA membership</td>
<td>3.53</td>
</tr>
<tr>
<td>Recommendation letters</td>
<td>3.51</td>
</tr>
<tr>
<td>Grades senior elective in specialty</td>
<td>3.48</td>
</tr>
<tr>
<td>USMLE Step 1</td>
<td>3.41</td>
</tr>
<tr>
<td>Medical school reputation</td>
<td>3.27</td>
</tr>
<tr>
<td>Medical student performance evaluation</td>
<td>3.27</td>
</tr>
<tr>
<td>Medical school academic awards</td>
<td>3.17</td>
</tr>
<tr>
<td>Grades in senior electives not in specialty</td>
<td>2.80</td>
</tr>
<tr>
<td>Grades in preclinical courses</td>
<td>2.70</td>
</tr>
<tr>
<td>Published research</td>
<td>2.62</td>
</tr>
</tbody>
</table>

Adapted from Table 3 in Green M, et al. Acad Med. 2009;84(3):362-367. doi:10.1097/acm.0b013e3181970d5b
Many metrics are less useful than we think

Utility
- Validity
  - Scoring
  - Generalization
  - Extrapolation
  - Consequences

Feasibility
- Availability
- Acceptability
- Cost-effectiveness

Does it predict what we care about?

Does it result in any adverse consequences?

Inequity


Letters of Recommendation (MSPE & AAIM template)

Does it predict what we care about?

Does it result in inequity?

Demographic factors associated with biased language:

- **Race/ethnicity**: Black, Asian, Hispanic (fewer standout terms)
- **Gender**: women (compassion > ability)

Awards (AOA)

Does it predict what we care about?

Does it result in inequity?

Demographic factors associated with lower acceptance:

- **Race/ethnicity**: Asian, Black, Hispanic
- **Gender**: women

Factors NOT associated:

- Community service hours
- Leadership hours
Standardized exams (USMLE)

Does it predict what we care about?

Yes

Does it result in inequity?

Demographic factors predicting worse performance:

- **Race/ethnicity**: Asian, Black, Hispanic
- **Language**: English as second language
- **Citizenship**: US
- **Gender**: women
- **Age**: age above average


The USMLE lacks discriminatory power

"If you tested repeatedly...your score would fall within one standard error of the estimate of your current score two-thirds of the time. The SEE on this exam is 8 points."

Your score +/- SEE: 197-213

16-point difference "statistically meaningful"
If you want to learn more about the USMLE debate...

Screening Criteria: The Bottom Line

- Lack **validity**
- Lack **discriminatory power**
- Perpetuate **systemic inequity**
Steps in the selection process

Pipeline → Recruitment → Selection → Retention

Part 1: Screening

Part 2: Interview

The predictive value of interviews is uncertain

Use of the Interview in Resident Candidate Selection: A Review of the Literature

Alyssa Stephenson-Famy, MD
Brenda S. Houmand, MD, PhD
Sidharth Oberoi, BS

Anton Manyak, BS
Seine Chiang, MD
Sara Kim, PhD

Resident performance:

17 studies (n=1723) Poor or absent correlation vs 11 studies (n=614) Moderate correlation
Our life experiences shape our beliefs and values

Implicit biases that impact our decisions

Emory Cardiology. (2020, October 13). Bias and Racism in Medicine [Video]. YouTube. Available at: https://www.youtube.com/watch?v=ZdQJ_LFf31Q
Likeness bias influences our interpretations

Outline

The Problem  Current Process  Moving Forward  Success Stories
So, should we just have a lottery?

"...our current system for selecting medical students is strained by a limited predictive ability. In the search for good doctors, we lack meaningful, quantifiable, and comparable criteria. Partial or weighted admissions lotteries can offer us an escape. They have the potential to reduce mental and financial burdens on both applicants and medical schools, avoiding an overemphasis on marginal differences between applicants. Lotteries are also a simple way to address persistent admissions disparities by being truly non-discriminatory."


#1: Recruit a diverse committee to review processes

Image available as Figure 1 via Creative Commons Attribution 3.0 Unported license available at the link below:
#2: Identify criteria that match your program’s mission

- **Holistic review:**
  - Experiences
  - Competencies
  - Attributes
  - Metrics

  • Consider how criteria may impact diversity.

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#2: Identify criteria that match your program’s mission

## Experiences

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Importance of criteria to interview invitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational background</td>
<td>Not important</td>
</tr>
<tr>
<td>Community service/volunteer experience</td>
<td></td>
</tr>
<tr>
<td>Leadership roles</td>
<td></td>
</tr>
<tr>
<td>Experience with diverse populations</td>
<td></td>
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<tr>
<td>Research experience</td>
<td></td>
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<tr>
<td>Life experiences</td>
<td></td>
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<tr>
<td>Distance traveled</td>
<td></td>
</tr>
<tr>
<td>Professional associations</td>
<td></td>
</tr>
<tr>
<td>Healthcare experience</td>
<td></td>
</tr>
<tr>
<td>Experience living in a medically underserved area</td>
<td></td>
</tr>
</tbody>
</table>

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Holistic Review Primer for Program Directors, "Activity 1: Applicant Criteria Identification & Prioritization". From: https://www.aamc.org/programs/member-capacity-building/holistic-review
#2: Identify criteria that match your program’s mission

### Attributes

<table>
<thead>
<tr>
<th>Criteria</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional stature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural competence/humility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellectual curiosity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proficiency in language(s) spoken by patient population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team-minded / team player</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest in the desired specialty</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Competencies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal and Communication Skills (ICS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicate effectively with physicians, other health professionals, and health related agencies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work effectively as a member or leader of a health care team or other professional group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act in a consultative role to other physicians and health professionals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintain comprehensive, timely, and legible medical records, if applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
#2: Identify criteria that match your program’s mission

**Metrics**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Not important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly Presentations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USMLE Step 1 score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USMLE Step 2 CK score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USMLE Step 2 CK pass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USMLE Step 2 CS pass</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alpha Omega Alpha</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold Humanism Honor Society</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical school GPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance in core clerkships</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerkship performance in desired specialty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honors in curriculum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSPE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letters of recommendation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


#3: Clearly define the selected criteria

**Part 1: Resident Selection Criteria**

1. **Criteria:**

   **Definition:** How do you define it?

   **Assess:** What evidence will satisfy this requirement? Do my current recruitment and selection materials allow me to assess this criterion? What, if any, changes are needed?

2. **Criteria:**

   **Definition:** How do you define it?

   **Assess:** What evidence will satisfy this requirement? Do my current recruitment and selection materials allow me to assess this criterion? What, if any, changes are needed?

Developing clear, unambiguous definitions mitigates implicit bias

...but make sure they predict what we care about

**Associations between residency selection strategies and doctor performance: a meta-analysis**

#4: Only provide relevant data to interviewers/committee

<table>
<thead>
<tr>
<th>EXPERIENCES</th>
<th>Part 1: Resident Selection Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Criterion:</td>
<td>Definition: How do you define it?</td>
</tr>
<tr>
<td>Assess: What evidence will satisfy this requirement? Do my current recruitment and selection materials allow me to assess this criterion? What, if any, changes are needed?</td>
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Capers, Q. How Clinicians and Educators Can Mitigate Implicit Bias in Patient Care and Candidate Selection in Medical Education. A & S Scholar 1, 211–217 (2020).

#5: Ensure your interviewers are diverse

Student Body

Committee
#6: Create a standardized interview process

**Interview**

- Structured, behavioral interview
- Multiple mini-interviews (MMIs)

**Rating Form**

- Leadership skills

```
1 2 3 4 5 6 7 8 9
```

- Poor
- Excellent

0 activities | 1 activity | > 1 activity

---

@JenniferSpicer4

#7: Increase individuals' awareness of their biases

Require training, including the implicit association test (IAT):

- Race
- Gender
- Sexuality
- Religion
- Age
- Weight
- Disability

#7: Increase individuals' awareness of their biases

Who do you select for opportunities?
- How diverse are your mentees?
- Who co-authors papers with you?
- Who have you sponsored for talks?
- Who have you recommended for awards?

Are there systematic differences in your ratings?
- Do clinical evaluation ratings differ?
- Do narrative comments differ?
- Do interview ratings differ?
- How do your ratings compare to other raters?

#8: Have interviewers “check” biases before decisions

Consider the opposite
- Re-review data looking for evidence to support opposing impression

Counterstereotypical exemplar
- Think of individual you admire from the same demographic group

Common identity formation
- Search for common identities to reduce negative implicit bias

Perspective taking
- Empathize with individual by “walking in their shoes”
#8: Have interviewers “check” biases before decisions

How do your ratings compare to your average?

1 2 3 4 5 6 7 8 9

Poor Excellent

Have you used any biased language?

Gender-bias calculator

This calculator is derived from the version made by Thomas Holz, which was, in turn, inspired by the 2005 blog post on gender biases in recommendation letters. The blog post and its scientific basis are relevant and explain why the gender bias is important. Thanks to Dr. Jason James for the inspiration. Privacy note: no content you test here will leave your browser as all the calculation is done in this page.

Outline

The Problem Current Process Moving Forward Success Stories

UCSF Faculty Guide for avoiding bias and stereotypes in evaluations
AOA Selection

<table>
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</tr>
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<tbody>
<tr>
<td>Committee membership</td>
<td>Committee membership</td>
</tr>
<tr>
<td>Faculty (course/clerkship directors)</td>
<td>Faculty (diverse educators)</td>
</tr>
<tr>
<td>Medical school leaders</td>
<td>Medical school leaders</td>
</tr>
<tr>
<td>Selection criteria &amp; training</td>
<td>Selection criteria &amp; training</td>
</tr>
<tr>
<td>Academic</td>
<td>Academic + professional</td>
</tr>
<tr>
<td>No reviewer instrument</td>
<td>+ reviewer instrument</td>
</tr>
<tr>
<td>No training</td>
<td>+ training</td>
</tr>
<tr>
<td>Student eligibility &amp; application</td>
<td>Student eligibility &amp; application</td>
</tr>
<tr>
<td>Top 25% of class eligible</td>
<td>All students with &gt;50% weeks of</td>
</tr>
<tr>
<td></td>
<td>honors grades eligible</td>
</tr>
<tr>
<td>Blinded review of applications</td>
<td>Blinded review of applications</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

UiM eligible: 10% → 29%
UiM selected: 7% → 21%

Pediatric residency program

<table>
<thead>
<tr>
<th>Individual &amp; Interpersonal</th>
<th>Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mandatory training</td>
<td>• Revised rubric to avoid reliance on grades, AOA, etc.</td>
</tr>
<tr>
<td>• Case discussions</td>
<td>• Explicit scoring guidelines</td>
</tr>
<tr>
<td>• DEI discussions w/ applicants</td>
<td>• Shared mental model of qualities</td>
</tr>
<tr>
<td>• Small ranking teams</td>
<td>• Expanded ranking committee</td>
</tr>
<tr>
<td>• Standardized interview questions</td>
<td>• Set explicit goals for recruitment</td>
</tr>
<tr>
<td>• No photos during ranking</td>
<td>• Discuss UiM applicants early in ranking meeting</td>
</tr>
</tbody>
</table>

UiM interns: 15% → 45%

2017-2018 2019-2020
## Faculty recruitment for surgery

<table>
<thead>
<tr>
<th></th>
<th>Traditional hiring</th>
<th>Inclusive recruitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertisement</td>
<td>Limited</td>
<td>Broad through non-traditional venues &amp; organizations focused on UiM individuals</td>
</tr>
<tr>
<td>Applicant pool</td>
<td>No formal criterion or minimum</td>
<td>Requirements for diverse pool</td>
</tr>
<tr>
<td>Participants</td>
<td>Department leaders Prospective division partners</td>
<td>Department leaders Prospective division partners Diverse division-wide committee (rank, gender, race, specialty)</td>
</tr>
<tr>
<td>Interview</td>
<td>Individual &quot;get to know you&quot;</td>
<td>Individual &quot;get to know you&quot; Group interview with standardized, behavior-based questions</td>
</tr>
<tr>
<td>Hiring decision</td>
<td>Department leaders</td>
<td>Department leaders based on recommendation by committee</td>
</tr>
</tbody>
</table>

UiM 33%    Women 50%


---

### To ensure diversity, we must collect data

1. **Pipeline**
2. **Recruitment**
3. **Selection**
4. **Retention**

- # applied
- # interview offered
- # interview accepted
- # job offered
- # job accepted
Selection processes aren’t the only solution

Pipeline ➔ Recruitment ➔ Selection ➔ Retention

Additional Reading

COMMENTARY

Selecting trainees: Too much focus on predictive metrics, not enough on holistic review

Justin T. Clapp | Emily K. Gordon
Perelman School of Medicine - Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, Pennsylvania, USA
Take Home Points

• Diversity drives excellence. It is not a competing concept.
• We need to ensure that selection metrics are valid & equitable.
• Combine individual bias training with better selection processes.
• Changing our processes can increase diversity.

We can’t eliminate all bias but we CAN mitigate SYSTEMIC bias.

Resources:
Additional Reading

Homework:
Create a concrete plan

Mitigate
• What is one thing that you can do to start examining & mitigating your own biases?

Propose
• What is one concrete proposal that you can make to a selection process that you participate in?