Strategies for Equity-Based Holistic Review

Our work is supported by the National Science Foundation through INCLUDES and Innovations in Graduate Education Grants Nos. 1834540, 1834545, 1834528 and 1834516. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.
Equity-minded holistic review is needed from the start of the process.
A Framework for Holistic Review

Comprehensive
Numerous, diverse criteria related to achievements, competencies, and potential

Contextualized
Assessment of metrics, achievements, and alignment with your program mission.

Systematic
Review to ensure efficiency, minimize bias, and improve transparency and accountability

Equity-minded
Attuned to equity implications of what we do and how we think in admissions
Current Research Evidence on Holistic Review

Syverson, Franks, Hiss (2018): Test-optional policy at 28 institutions
“...adoption of a well-executed test-optional [undergraduate] admission policy can lead to an increase in overall applications as well as an increase in the representation of URM students” and low-income students, with similar degree completion rates.

Grabowski (2017): Effects of holistic review in medical admissions
“Using mission-driven, holistic admissions criteria comprised of applicant attributes and experiences in addition to academic metrics resulted in a more diverse interview pool than using academic metrics alone.”

Bastedo et al. (2018): Admissions officers’ views of holistic review
“...admissions officers with a ‘whole context’ view of holistic review were disproportionately likely to admit a low socioeconomic-status applicant.”
Why is Holistic Review Important in 2020?

• COVID is exposing variation [and inequities] that have always been there and is disproportionately adding new barriers to minoritized students

• It reveals the importance of contextualization & individualized review. Students have:
  • Varied access to standardized testing
  • Varied grading schemes being used (eg, letter, pass/fail)
  • Varied access to technology that affects student performance
  • Varied access to research opportunities

• Holistic review can correct for selection tendencies that reproduce inequities in our departments and disciplines.
  • Recognizes excellence doesn’t inhere in a single metric or student profile.
  • Want to start undoing institutionalized racism? Consider the admissions process.
  • Reduces reliance on criteria with racial, gender, socioeconomic variation.
Non-Cognitive Competencies
Non-Cognitive Competencies

- Social and emotional skills that we use to navigate life
- Measurable!
- Decades of psychology research (developmental, social, and industrial-organizational)
  - Predict academic/job performance
  - Few, if any, group differences by gender and race
  - Orthogonal to cognitive measures (e.g., GPA, SAT/GRE)
Self Management
Optimism
Trustworthiness
Achievement Orientation
Conscientiousness
Adaptability
Emotional Self-Control
Initiative

Self Awareness
Self-Confidence
Accurate Self-Assessment
Emotional Awareness

Relationship Management
Teamwork and Collaboration
Communication
Building Bonds
Conflict Management
Influence
Change Catalyst
Inspirational Leadership
Developing Others

Social Awareness
Cultural Awareness
Organizational Awareness
Empathy
Service Orientation
Relationship Management

Self Management

Self Awareness

Social Awareness
### Self-management competencies correlate with clinical grade:

- Achievement Orientation
- Adaptability
- Initiative
- Emotional Self-Control
- Trustworthiness
- Conscientiousness
- Optimism

---

**Table:**

<table>
<thead>
<tr>
<th></th>
<th>Didactic</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Non-Cognitive</td>
<td>Maybe</td>
<td>Yes</td>
</tr>
</tbody>
</table>

---

“Cognitive ability and knowledge are *threshold* aspects of professional work necessary but not sufficient for outstanding professional performance”

---

Copyright 2018, JRP & CWM

Victoroff & Boyatzis (2013)
Options for Assessing Non-Cognitive Competencies

Exchange personal statement for several short answer items (e.g., ~150 words each):

- Tailor application to a rubric
- Most immediately feasible
- Levels the playing field

Structured interviews of short list

For either of these options, consider the following prompts:

- If we called your faculty mentors, what would they say you are really good at?
- What are you most proud of accomplishing?
- Describe an academic challenge you faced, how you handled the situation, and what you learned from it.
- What will be the biggest challenge for you in graduate school?
- Why graduate school?
Rubrics
<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure &amp; Equity</td>
<td>Assess all applicants on the same several factors</td>
</tr>
<tr>
<td>Specificity</td>
<td>Mitigate implicit bias by focusing on predefined factors</td>
</tr>
<tr>
<td>Reliability</td>
<td>Raters have similar ratings; limit power of single factors</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Review is expedited, reducing faculty load</td>
</tr>
<tr>
<td>Synergies</td>
<td>Connect to recruitment, application prompts</td>
</tr>
<tr>
<td>Alignment</td>
<td>Helps reinforces a program’s values, mission</td>
</tr>
<tr>
<td>Accountability</td>
<td>Defense against charges of unfairness</td>
</tr>
</tbody>
</table>
“...people just said it went faster for them with a rubric, because they knew what they were looking for, and knew they were being consistent. It was important that the range of values assigned to rubric criteria was small and each value had a clear definition.”
Impacts of Rubrics

- Ohio State Physics
  - Fixed GRE weight
  - 40% of 2018 cohort was UREM

- University of Chicago Physics
  - Admission of women increased from single digits historically to 30%.

- RIT Astrophysics
  - 50% of admissions offers are to women
  - REU translation: 2/3 of offers are to women, 1/3 to UREM students

- Michigan Applied Physics
  - Fended off legal challenge to decision
Dimensions can be broad to allow:
  - Multiple ways applicants might fulfill them
  - More individual interpretation by reviewers
Dimensions can be narrow to allow:
  - Specific requirements
  - More objective interpretation by reviewers

Suggestions
  - Link these to your program mission.
  - If GRE scores are available, fold them into the academic preparation category. However:
    - Focus groups suggest that “optional” is read by women students as “required” and male students as “optional"
    - Consider hiding from reviewers any scores submitted (as well as whether or not scores were submitted).
Developing a Rubric: Identify Dimensions of Admissibility

- Academic Preparation
- Scholarly Potential
- Alignment with Program
- Diversity Contributions
- Non-Cognitive Competencies

- Research Interests
- Faculty Needs
- Geography
Developing a Rubric: Operationalize Dimensions

What do High, Medium, and Low mean?

- Goal: roughly one third of applicants in each category
- Concrete definitions will lead to more consistent judgments
- Conjunctions can be helpful
  - High = A and B and C; Med = B and (A or C); Low = A or B or C or None

Suggestions

- Create space for comments to justify assessments.
- Allow for noting unique situations that merit special consideration
- If items have different weightings, fix the weight ahead of review.
<table>
<thead>
<tr>
<th>Item</th>
<th>Subitem</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alignment with program</td>
<td>Research Interests</td>
<td>Research interests align with multiple faculty in multiple subfields</td>
<td>Research interests align with multiple faculty in one subfield</td>
<td>Limited alignment between student’s interests and faculty expertise</td>
</tr>
<tr>
<td></td>
<td>Faculty Needs</td>
<td>Someone wants to hire as RA now and/or there is a direct match with faculty expertise</td>
<td>General alignment, but interests do not directly support a specific faculty member's work</td>
<td>Faculty aligned with applicant's interests are not seeking students, or no alignment</td>
</tr>
<tr>
<td></td>
<td>Geography</td>
<td>Clear &amp; sincere non-academic reasons for our location</td>
<td>Desire for location is focused on academics</td>
<td>Importance of location unclear</td>
</tr>
</tbody>
</table>
## Rubrics: Comprehensive, Contextualized, & Systematic

<table>
<thead>
<tr>
<th>Category</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Preparation</strong></td>
<td>A- or better in all core STEM courses AND B or better in non-STEM courses; received at least one academic honor</td>
<td>B or better in all core STEM courses; Concerning grades have a reasonable explanation</td>
<td>Lower than a B in 2 or more core STEM courses; Grades of C or lower do not have a reasonable explanation</td>
<td><em>Notes</em></td>
</tr>
<tr>
<td><strong>Scholarly potential</strong></td>
<td>Clear commitment to and enthusiasm for research AND experience at least equal to a senior thesis</td>
<td>Clear commitment to and enthusiasm for research, BUT experience less than a senior thesis</td>
<td>Signals that a PhD is more of a next step than a clear passion.</td>
<td><em>Notes</em></td>
</tr>
<tr>
<td><strong>Diversity, Equity, Inclusion Contributions</strong></td>
<td>Has been an active advocate for diversity, equity, and/or inclusion</td>
<td>Some evidence of engagement with diversity, equity, and/or inclusion</td>
<td>Limited evidence of engagement with diversity, equity, and/or inclusion</td>
<td><em>Notes</em></td>
</tr>
<tr>
<td><strong>Alignment with Program</strong></td>
<td>Research interests align with multiple faculty AND stated career goals align with program training</td>
<td>Research interests align with one faculty member AND stated career goals align with program training</td>
<td>Limited alignment with faculty research interests OR limited evidence of alignment between career goals and program training</td>
<td><em>Notes</em></td>
</tr>
<tr>
<td><strong>Realistic Self-Appraisal</strong></td>
<td>Clearly delineates strengths and weaknesses AND clear evidence of effort on self development</td>
<td>Basic statements about strengths and weaknesses AND does seek positive and negative feedback</td>
<td>Over or understates abilities; indications that self-assessment or learning from experiences are limited</td>
<td><em>Notes</em></td>
</tr>
<tr>
<td><strong>Preference for long-term goals</strong></td>
<td>Clearly communicates long-range goals beyond the PhD AND has a record of engaging in long-term endeavors</td>
<td>Clearly communicates long-range goals beyond the PhD OR Has a record of engaging in long-term endeavors</td>
<td>Goals are short range (e.g., specific coursework); limited history of engagement in long-term projects</td>
<td><em>Notes</em></td>
</tr>
</tbody>
</table>
Rubric for Assessing Non-Cognitive Competencies via Interviews

<table>
<thead>
<tr>
<th>Attribute</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-Concept</td>
<td>Expresses confidence they can complete challenging goals, makes positive statements about abilities</td>
<td>Shows confidence and independence but may be unsure about adequacy or skills</td>
<td>Is unsure they can complete the program, exhibits low self-esteem</td>
</tr>
<tr>
<td>Realistic Self-Appraisal</td>
<td>Can clearly and realistically delineate strengths and weaknesses, works on self development</td>
<td>Has trouble identifying strengths and weakness but appreciates/seeks both positive and negative feedback</td>
<td>Over or underestimates abilities, does little to no self-assessment, does not appear to have learned from experiences</td>
</tr>
<tr>
<td>Preference for Long vs. Short Term Goals</td>
<td>Clearly communicates long-range goals beyond the PhD</td>
<td>Primary goal is PhD completion</td>
<td>Is vague about long-term goals, or goals are short term such as coursework</td>
</tr>
<tr>
<td>Support Person Availability</td>
<td>Can define a professional support network including mentors</td>
<td>Expresses support from one individual, or family or community</td>
<td>Expresses little or no support from family or institution for goals</td>
</tr>
<tr>
<td>Leadership/Community Involvement</td>
<td>Demonstrates involvement and leadership ability in either academics, family, community, religious group, or athletics</td>
<td>Demonstrates involvement in groups in academia or extramural but has not shown leadership</td>
<td>Not involved in institutional or community group, no demonstrated leadership</td>
</tr>
<tr>
<td>Knowledge in a Field/Non-Traditional Learning</td>
<td>Has engaged in, and learned from, experiences outside the classroom, i.e. performed independent research, extramural activities, self-taught skills</td>
<td>Shows some evidence of non-traditional learning experience</td>
<td>Has not engaged in or indicated learning from experiences outside the classroom</td>
</tr>
<tr>
<td>Perseverance</td>
<td>Can describe a time they failed or encountered an obstacle and successfully coped.</td>
<td>Can identify a time they hit an obstacle but has trouble defining how they overcame the challenge.</td>
<td>Has little experience with failure/obstacles. Cannot provide an example or describe response</td>
</tr>
</tbody>
</table>

Modified from Sedlacek

https://www.fisk-vanderbilt-bridge.org/toolkit
Implementing Rubrics

- Norming: Committee members independently rate the same two applications, then discuss their scores, focusing on differences.
- Have each application reviewed by 2 people; Discuss if there is significant divergence in the ratings; Bring in 3rd reviewer if needed.
- Plan how to evaluate unexpected cases; revise rubric annually.
- Adoption is more likely when users
  - Understand how it can benefit them and their program
  - Participate in its development as a group
  - Feel competent in using it
- Caveats:
  - Not a silver bullet or fool proof
  - Beware symbolic adoption
Next Steps/ Homework

1. Finish drafting the rubric.
2. Identify a few applications from last year’s admissions cycle.
3. Rate each application using your rubric, independently.
4. Come together as a committee to discuss.
   a. How consistent are ratings across reviewers?
   b. How well do these definitions work for you?
5. Make modifications as necessary.

This norming process is a great way to orient a new admissions committee to the process and, potentially, update your rubric each year.
Holistic review is just one part of improving selection.

Without discipline, it can reproduce the status quo.

- More likely with a homogeneous group of reviewers. Identities matter to how we make sense of the same information in front of us.

It is useful for identifying talent in many underrepresented groups.

- Students from liberal arts colleges and less selective universities
- Non-traditionally aged students
- Students switching fields
- Lower SES and/or first-generation college students
- People of color
- Women of all backgrounds
What we hope you have learned

- The importance of embedding equity considerations in all aspects of admissions.
- Awareness of non-cognitive competencies and possible ways to assess them.
- Rubrics are a good, first step toward holistic review.
- The importance of having discussions like the ones in your breakout to surface cultural assumptions and begin to change them.


Miller, C. W., Zwickl, B. M., Posselt, J. R., Silvestrini, R. T., & Hodapp, T. (2020). Response to comment on “Typical physics Ph. D. admissions criteria limit access to underrepresented groups but fail to predict doctoral completion”. Science Advances, 6(23), eaba4647.


