

"Journey to a more holistic admissions review process by implementing an evaluation rubric"

Session 2, 10:50 a.m. – 11:50 a.m. Ohio Union Rosa M. Ailabouni Room

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- This is presentation is a reflection on the journey of the working in Physics Graduate Program at Ohio State from 2012 to 2018 moving to a more holistic review process for domestic applicants with the end goal of increasing diversity in the program.
- Through using a rubric as part of the applicant evaluation, this has helped to make for a more comprehensive and consistent review process of the program's applicants.
- During this presentation, I will discuss key takeaways from my own personal experience working with graduate admissions.

Many students already face barriers to graduate admission because of their gender, ethnicity, sexual orientation and economic status and the old methods of applicant evaluation make it easy to overlook a good applicant because of their lower GPA and/or GRE scores.

Change is difficult so the process of improving an admission review process is often seen as a barrier to making any changes, but those old arguments hurt the students and the programs, though the programs may not even realize it.

Handouts:

- Counsel on Graduate Students (CGS) Resources on Holistic File Review (from Seminar 11/2016 presented by Profs. Posselt and Miller)
- ETS "Connecting Graduate Admissions Practice with Goals"
- 29 Non-Cognitive skills to rate or rank (provided by INCLUDES program)
- Sample rubric (Developed by OSU Physics Dept.)

A journey of a thousand miles begins with a single step.

Admissions Data example

# of applicants	400
App Form	400
Resume	400
Personal Statement	400
Transcripts	600-800
3 letters of recommendation	1200
GRE Scores	550
GPA	400



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THE OHIO STATE UNIVERSITY COLLEGE OF ARTS AND SCIENCES

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General Notes																	
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Example of an applicant from the AU 20xx applicant pool

Name & App ID #]	Publications	Num			Self-re	eported	SIS Con	ıfirmed
Region/Gender/Ethnicity Flag	DOM	Reviewer's I	nput		Published			Scores	Score	Rank	Score	Rank
School UG1	University				In Review			GRE_V		61		
UG GPA	2.84/4				In Prep.			GRE_Q		71		
Trnscrpt 1	y				Awards			GRE_AW		73		
School 2	University			5	Scholarships			GRE_Phys		69		69
Grad GPA	3.75/4						FRE	V&QTota		66		0
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Committee Decision												

Did anything on here predict that this student would perform in our program with a 4.0 GPA and win a Fellowship for research?



ENHANCING DIVERSITY IN PHYSICS GRADUATE EDUCATION

OSU Physics submits proposal in February 2013 Spring 2013 OSU Physics awarded APS NSF grant

From Proposal: The Ohio State University Physics Department will establish a **Physics M.S. Transitional Bridge Program (OSU-BP)**

to enhance the diversity of qualified applicants to physics Ph.D. programs at OSU and at other universities. The OSU-BP will be structured as a two-year transitional M.S. program for students with B.S. or B.A. degrees who show strong promise for research, but who are not ready to directly enter a Physics Ph.D. program.

Program to start Autumn 2013



Review Date:				Reviewer:					ver 2015	Alt Review	er Last Na	me:					
Reviewer Recomme	ndation		5			_	Can you v	vrite a stron	g Fellowship	Letter of Re	ecommend	ation if eligil	ole?			maybe	
Review Status:			Com	plete								Fellowshi	Exceptio	ns:	0		
Applicant Info						AppID			CITZ	DOM							
												DEGREES	3				
Undergrad Inst:												BS		Self UG GI	PA/Scale:	3.98 / 4.0	
2nd+ UG Inst:																	
Graduate Inst:														Self Grad GP	A/scale:		
_																	
GRE core / %:	Verbal		Quant		Anal/Writ		Q+V%/200		+hysiCs	<u></u>	10EFL						
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What do STEM faculty want?

-DATA!

How much data?

-As much as they can get!

When do they want it?

-All at once for any random sampling

of your applicant pool!





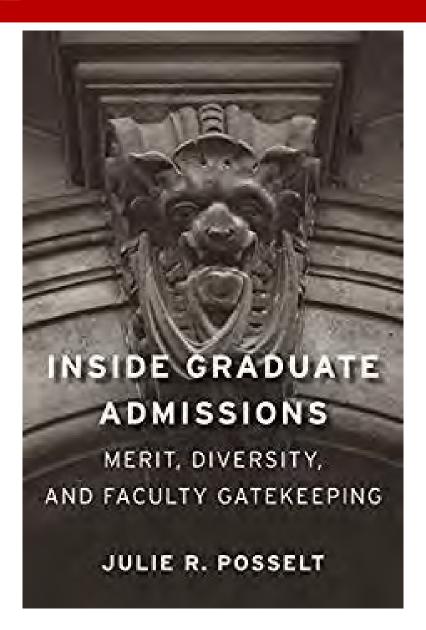
Is more data the answer?

Can you compare all applicants against each other?

Do GRE scores indicate any sort of ability?

Prepare to shift your paradigm!





Amazon

- •Kindle \$18.95
- •Hardcover \$30.53
- Paperback \$19.95

Author spoke at a Physics Colloquium November 2016

<u>Public Workshop:</u> "Enhancing Diversity in STEM Graduate Education through Admissions Practices" - Nov. 7, 3 to 5pm, Smith Seminar Room

- Profs. Julie Posselt (USC) and Casey Miller (RIT).

Open to all – those involved with graduate admissions are particularly encouraged to attend.

The National Academies have suggested that increasing diversity in Science, Technology, Engineering, and Math will be critical to the future competitiveness of the US in these areas [1], and the National Science Foundation (NSF) [2], the American Physical Society (APS), and many other organizations are taking this seriously. This workshop is the result of a grant to APS through NSF's INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) initiative [3, 4], which aims to create a national network for access and inclusion in STEM graduate education.

In this workshop, two members of the PI team (Posselt and Miller) will discuss opportunities that may help increase the enrollment and retention of women and students of color. It will focus, in particular, on current research related to enhancing diversity through graduate admissions policies and practices [5, 6, 7, 8], and employing key evidence-based features of successful Bridge Programs into graduate programs [9]. We will conclude by discussing non-cognitive competencies and their role in student selection processes [10].

References

- [1] National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, "Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads," The National Acadamies Press (2011); http://www.nap.edu/openbook.php?record_id=12984
- [2] Joan Ferrini-Mundy, "Driven by Diversity," Science 340, 278 (2013).
- [3] https://www.nsf.gov/pubs/2016/nsf16048/nsf16048.jsp
- [4] https://nsf.gov/awardsearch/showAward?AWD ID=1649297
- [5] Casey W. Miller, "Admissions Criteria and Diversity in Graduate School," APS News, The Back Page, February 2013. http://www.aps.org/publications/apsnews/201302/backpage.cfm
- [6] Casey W. Miller and K. G. Stassun, "A test that fails," *Nature* **510**, 303-304 (11 June 2014) | doi:10.1038/nj7504-303a
- [7] Posselt, J. R. (2016). *Inside graduate admissions: Merit, diversity, and faculty gatekeeping.* Harvard University Press.
- [8] Posselt, J. R., Reyes, K. A., Slay, K., Kamimura, A., & Porter, K. (in press). "Equity efforts as boundary work: How symbolic and social boundaries shape access and inclusion in graduate education." *Teachers College Record.*
- [9] Stassun, K.G., Sturm, S., Holley-Bockelmann, K., Burger, A., Ernst, D., & Webb, D., "The Fisk-Vanderbilt Masters-to-PhD Bridge Program: Broadening Participation of Underrepresented Minorities in the Physical Sciences. Recognizing, enlisting, and cultivating 'unrealized or unrecognized potential' in students", American Journal of Physics 79, 374 (2011).
- [10] Casey W. Miller, "Using Non-Cognitive Assessments in Graduate Admissions to Select Better Students and Increase Diversity", STATUS, p1, January (2015) http://www.aas.org/cswa/status/Status2015 Jan s.pdf

CGS Resources on Holistic File Review

- Findings from the International Graduate Admissions Survey (CGS, 2007-2014)
- http://cgsnet.org/benchmarking/international-graduate-admissions-survey
- Graduate Enrollment and Degrees: 2003 to 2013 (Allum, 2014)
- http://cgsnet.org/ckfinder/userfiles/files/GED report 2013.pdf
- Toward Inclusive Excellence in Graduate Education: Constructing Merit and Diversity in PhD Admissions (Posselt, J., 2014)

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http://www.jstor.org/discover/10.1086/676910?uid=3739936&uid=2129&uid=2&uid=70&uid=4&uid=3739256&sid=21104989177073

• What does performance in graduate school predict? Graduate Economics Education and Student Outcomes (Athey, Katz,

Krueger, Levitt, & Poterba, 2007)

- http://pricetheory.uchicago.edu/levitt/Papers/graduate%20schol.pdf
- The Case for Noncognitive Assessments (Kyllonen, P. C., 2005)
- http://www.ets.org/Media/Research/pdf/RD_Connections3.pdf
- Why We Should Use Noncognitive Variables with Graduate and Professional Students (Sedlacek, W., 2004)
- http://williamsedlacek.info/publications/articles/why1.pdf
 (more listed on your handout)

Noncognitive variables

Grit factors

Bias

Holistic Review

Non Cognitive retings		Critical for success in	Duplio	cate your
Non Cognitive ratings		your program?	answe	ers here;
		0 = no; 1 = yes		please
Recognizing one's emotions and their effects.	1		1	
Knowing one's strengths and limits.	2		2	
A strong sense of one's self-worth and capabilities.	3		3	
Keeping disruptive emotions and impulses in check.	4		4	
Flexibility in handling change.	5		5	
Striving to improve or meeting a standard of excellence.	6		6	
Readiness to act on opportunities.	7		7	
Persistence in pursuing goals despite obstacles and setbacks.	8		8	
Maintaining integrity.	9		9	
Taking responsibility for personal performance.	10		10	
Sensing others' feelings and perspectives, and taking an active interest in their	11		11	
concerns.				
Reading a group's emotional currents and power relationships.	12		12	
Anticipating, recognizing, and meeting customers' needs.	13		13	
Respecting and relating well to people from varied backgrounds.	14		14	
Sensing others' development needs and bolstering their abilities.	15		15	
Inspiring and guiding individuals and groups.	16		16	
Initiating or managing change.	17		17	
Wielding effective tactics for persuasion.	18		18	
Negotiating and resolving disagreements.	19		19	
Listening openly and sending convincing messages.	20		20	
Nurturing instrumental relationships.	21		21	
Working with others toward shared goals and creating group synergy in pursuing	22		22	
collective goals.				
Expressing confidence in ability to complete challenging goals.	23		23	
Accurately assesssing strengths and weaknesses, and working on self-development.	24		24	
Defering gratification.	25		25	
Existence of a professional support network.	26		26	
Involvement and leadership in academics, family, community, or athletics.	27		27	
Engaged in and learned from intellecutal independent research or extramurals.			28	
Ability to successfully cope with obstacles or failure.	_		29	

Non Cog List – abbreviated

Accurate Self-Assessment: Knowing one's strengths and limits.

Self-Confidence: A strong sense of one's self-worth and capabilities.

Emotional Self-Control: Keeping disruptive emotions and impulses in check.

Adaptability: Flexibility in handling change.

Initiative: Readiness to act on opportunities.

Optimism: Persistence in pursuing goals despite obstacles and setbacks.

Trustworthiness: Maintaining integrity.

Conflict Management: Negotiating and resolving disagreements.

Communication: Listening openly and sending convincing messages.

Teamwork and Collaboration: Working with others toward shared goals and creating group synergy in pursuing collective goals.

Positive Self-Concept: Expressing confidence in ability to complete challenging goals.

Realistic Self-Appraisal: Accurately assessing strengths and weaknesses, and working on self- 25

Preference for long vs short term goals: Deferring gratification.

Knowledge in a field/non-traditional learning: Engaged in and learned from intellectual independent research or extramural.

Perseverance: Ability to successfully cope with obstacles or failure.

Non-Cognitive Competency	Di	scipline-specific exar	nples
	High	Medium	Low
<u>Conscientiousness</u>			
Taking responsibility for personal			
performance.			
<u>Adaptability</u>			
Flexibility in handling change.			
Achievement Orientation			
Striving to improve or meeting a standard of			
excellence.			
<u>Initiative</u>			
Readiness to act on opportunities.			
<u>Optimism</u>			
Persistence in pursuing goals despite			
obstacles/setbacks.			



Holistic Admissions Strategies for a Stronger Graduate Program

As part of a research effort to learn more about graduate admissions practices and holistic file review, ETS and

the GRE® Program, with the support of the GRE Board, interviewed faculty and staff involved in admissions at

58 programs across the United States. As interview participants reflected on their experience, many said that our

questions prompted them to consider and discuss issues they hadn't before. In response, we created *Connecting Graduate Admissions Practices with Goals: Questions to Consider*, a discussion guide to support faculty and administrators who are interested in having the same kind of thoughtful engagement about graduate admissions practices on their own campuses.

http://holisticadmissions.org/

My brain is like the Bermuda triangle. information goes in and then it's never found again...

Physics Graduate Admissions for Autumn 2017

- -Introduction of a rubric
- -Hid subject test score
- -Returned to using a flag
- -Introduction of Diversity Statement

Rubric Category	High (2)	Medium (1)	Low (0)
		Attended strong UG program, but has medium GPA in core subjects or is missing 1 or more	with medium GPA in core subjects, OR attended strong program but has low
Academic Preparation	Attended strong physics UG program, has taken 1 or more terms of all core subjects, with ave GPA	core subjects, OR attended weaker program but with strong GPA (in core subjects.	GPA (in core subjects, or is missing multicple core subjects
Research Experience	research accomplishments/ experience, such as multiple experiences one multi-year experience with strong letter(s). Examples: papers, substantial presentations, posters, specific accomplishment (such as building a piece of equipment)	Some extended research experience, such as an REU, a solid senior project (supported by letter writer), 1 or 2 semesters of experience, but no significant accomplishments (for example, an internal presentation).	
Non Cogs	Concrete evidence of one or more Evidence in Strong Grit: specific evidence of pushing through tough challenge. Achievement Orientation; Conscientiousness (Taking responsibility for personal performance); Leadership; Initiative; Deferring gratification; Adaptibility; Communication.	Little or weak information on Non- Cogs	Negative traits: Red flags in letters. Giving up easily, unrealistic self-evaluation
Physics GRE score	>={		
GRE Reg scores	average of Verbal & Quant to be	Ave(V&Q) >=	neither condition
Special Circumstances			

Rubric Category	Score	Justification/ comments	Weight1	Weight2
Academic				
Preparation	0	Mostly E	25%	25%
Research		1 APS talk, local talks. Extended work on		
Experience	2		25%	40%
Non Cogs	2	background. L work shows good determination and work ethic.	25%	25%
GRE Physics score	1		12.5%	5.0%
GRE regular scores	2		12.5%	5.0%
Special		Emphatic discussion that he		
Circumstances		wants to give back, helping people like		
Option 1 Score:	1.4			
Option 2 Score:	1.5		100.0%	100.0%

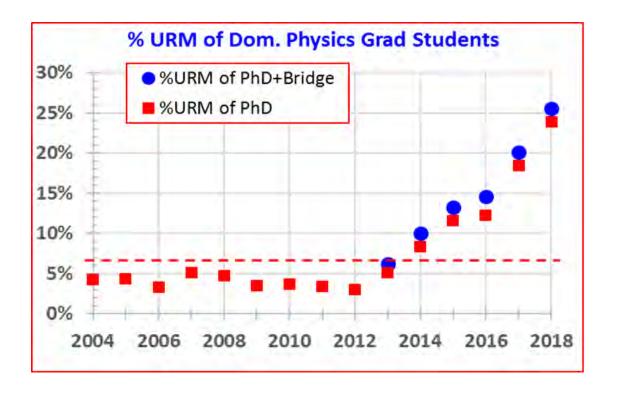


Review Date:				Reviewer	: F_	Sch			Alt Review	er Last	Name									
Reviewer Recommend	lation		4			Can you	write	a strong Fello	wship Letter	r of Re	comm	endation	n if eligible?							
Review Status:			Coı	mplete							Fello	wship l	Exceptions:		0					
Applicant Info					ID					_			Flag:	Υ		Yes	Diver	sity Sta	emen	ıt?
												Degree	S							
Institutions attended or	rdered											Assoc	Self UG GPA/Scale:			3.4/4.	0	2		
Institution(s) & Degre	ee com												Conrfirmed			UG Q	uality:	"1" or '	'2"	
Degrees													Self Grad GPA/scale							
								This sc	ore wa	is le	ft b	lank	& filledinad	durin	g com	mitt	ee	revi	ew.	
GRE Score V	/erbal	9	Quant	Anal/Writ		Q+V%/20	00 Ph	ıysi		TOEF	L									
Score	166		163	4.				740			Speak	:								
%	97		85	8	2	91		59			Total									
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Committee Review No	otes:	Mayb	e ask	to help rec	ruit?												Quar	ers or S		
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Publications Y/N:	N		Pub N	N Advisor exp	ects a	a submiss	ion in	2017.										B +	В	В
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Admissions for Autumn 2018

- -Used same rubric
- -left blank the field for subject score

Results



Removed data table removed from presentation that explains the numbers behind this graph

Thank you

Acknowledgements & References:

American Physical Society (APS) Bridge Program (an NSF funded initiative)

APS Inclusive Graduate Education Network (IGEN)

NSF INCLUDES: A National Network for Access and Inclusion in Physics Graduate Education

Ohio State University Master's to PhD Bridge Program

Ohio State University Physics Department, Graduate Studies Office