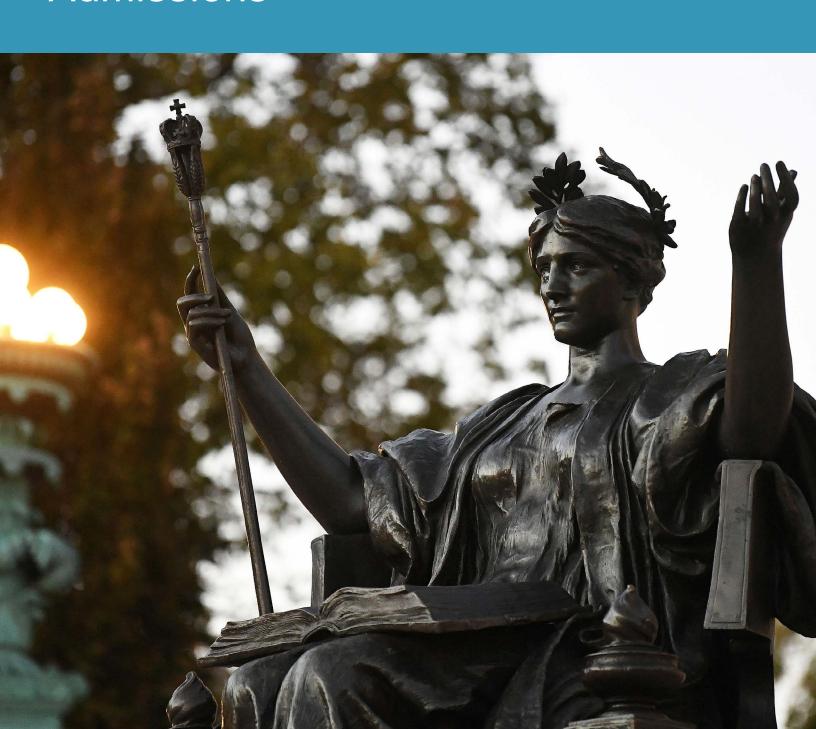


Office of the Provost

Guide to Equity-Based Graduate Admissions



CONTENTS

Affirmation of University Policies	3	Implicit bias training	23
Acknowledgments	4	2.4. Developing a reader guide	24
Introduction to the Guide to Equity-Based		Introduction	24
Graduate Admissions	5	Diversity disclaimer	24
Overview from the Executive Vice President for		Diversity statement	24
University Life and Senior Vice Provost for Faculty		Diversity goals	24
Advancement	6	Rubric	24
Checklist	7	Quantitative assessment	25
		Qualitative assessment	25
SECTION 1: OUTREACH AND RECRUITMENT	10	2.5. Reviewing recommendation letters	25
1.1. Recruitment events	10	How recommender comments align with	
Types of recruitment events	10	what you value in your applicants	25
40.7	10	Tone of the recommendation letter	25
1.2. Targeted promotion and marketing	12	Bias in the recommendation letter	25
Traditional advertising sources	12	Quality of the recommendation letter	25
Nontraditional advertising sources	12		0.0
Organic marketing efforts	13	2.6. Conducting interviews	26
Website	14	How to decrease bias in an interview	26
1.3. Recruitment strategies	15	SECTION 3: YIELD, ONBOARDING, AND STUDENT	
Targeted scholarships and fellowships	15	SUPPORT	27
Partnerships with undergraduate institutions	15	3.1. Yielding historically underrepresented students	27
Role of current students in the recruitment process	16	Yield strategies and initiatives	28
Partnerships and programming with existing nationa	I	Accepted applicant day	28
and local pathways and leadership programs	18	Funding opportunities	28
Developing new pathways programs within your		- · · ·	
discipline	18	3.2. Onboarding—Programming to support historicall	У
Promotion of diversity statistics	19	underrepresented students as they transition to graduate school	28
Application fee waivers	19	Importance of onboarding historically	۷
Dedicated admissions office staffing for		underrepresented students	28
recruitment of historically underrepresented	20	Promising onboarding strategies and initiatives	29
populations	20	Fromising orboarding strategies and initiatives	۷٤
SECTION 2: REVIEW AND SELECTION	22	3.3. Student experience and support—Programming	
2.1. Predicting success in your discipline/program	22	to support historically underrepresented students	04
	22	through graduation	31
Test score interpretation		Importance of ongoing support for historically underrepresented student populations	31
GPA/Transcript interpretation	22	Promising student support strategies and initiatives	
2.2. Holistic and intentional review	22	r romising student support strategies and initiatives	- J1
2.3. Bias and holistic review workshops	23	Conclusion	35
Holistic review workshops	23	References	36
Γ΄ -			

AFFIRMATION OF UNIVERSITY POLICIES

The context for this guide is Columbia's long-standing commitment to the principles of equity and excellence. Columbia actively pursues both, adhering to the belief that equity is the partner of excellence.

In furtherance of this commitment, Columbia has implemented policies and programs to ensure that decisions (whether about employment or admissions) are based on individual merit and not on bias or stereotypes. Columbia's Non-Discrimination Statement states, in part, the following: "Columbia University is committed to providing a learning, living, and working environment free from unlawful discrimination and harassment and to fostering a nurturing and vibrant community founded upon the fundamental dignity and worth of all of its members. Each individual has the right to work and learn in a professional atmosphere that promotes equal employment opportunities and prohibits discrimination and discriminatory harassment. All employees, applicants for employment, interns (paid or unpaid), students, contractors and people conducting business with the University are protected from prohibited conduct."

Hand in hand with its commitment to non-discrimination is Columbia's commitment to diversity. Columbia's Diversity Mission Statement states, in part, the following:

Columbia is dedicated to increasing diversity in its workforce, its student body, and its educational programs. Achieving continued academic excellence and creating a vibrant university community require nothing less.

Both to prepare our students for citizenship in a pluralistic world and to keep Columbia at the forefront of knowledge, the University seeks to recognize and draw upon the talents of a diverse range of outstanding . . . students and to foster the free exploration and expression of differing ideas, beliefs, and perspectives through scholarly inquiry and civil discourse. In developing its academic programs, Columbia furthers the thoughtful examination of cultural distinctions by developing curricula that prepare students to be responsible members of diverse societies.

In fulfilling its mission to advance diversity at the University, Columbia . . . strives to recruit members of groups traditionally underrepresented in American higher education and to increase the number of minority and women candidates in its graduate and professional programs.

This guide is prepared then in the spirit of ensuring equity and excellence. Nothing in it is intended to accord, or should in any way be construed as according, any type of favoritism or preferential treatment to any applicant for admission.

ACKNOWLEDGMENTS

This guide was made possible thanks to the collaborative effort of admissions officers. diversity officers, and student affairs staff across the University who participated in the Equity in Graduate Admissions Working Group. Thank you for dedicating your time to research and write about equity-based graduate admissions and for sharing your Columbia University institutional knowledge with your peers. Additional thanks to all the admissions directors and officers who participated in interviews to highlight best practices in their specific schools and units. We appreciate the guidance provided by the Inclusive Faculty Pathways Advisory Council Working Group: Professors Ruben Gonzalez, Kellie Jones, and Desmond Patton, whose valuable early feedback helped shape the format of the guide.

Many thanks to Callum Blackmore, Academic Administration Fellow, who conducted an extensive literature review for the guide, and to members of the Faculty Advancement team—Jen Leach, Marianna Pecoraro, and Vina Tran—who copyedited the draft. This guide is the result of the tireless efforts of Adina Berrios Brooks, Associate Provost for Inclusive Faculty Pathways, and Diana Dumitru, Associate Director for Inclusive Faculty Pathways, who led the Equity in Graduate Admissions Working Group and managed this project through to completion.

Equity in Graduate Admissions Working Group

Outreach and Recruitment Subcommittee

- Erwin de Leon (School of Professional Studies)
- Julie Dobrow (School of the Arts) (group chair)
- Grace Han (School of International and Public Affairs)
- John Haskins (Columbia Journalism School)
- Wendy Hernandez-Quinones (Vagelos College of Physicians and Surgeons)
- Eileen Lloyd (Programs in Occupational Therapy)
- Michael Lovaglio (School of Social Work)
- Keyauna Ramos (Vagelos College of Physicians and Surgeons)
- Natasha Stanislas (formerly at the School of Social Work)
- Afiya Wilson (Graduate School of Arts and Sciences)

Review and Selection Subcommittee

- Tarin Almanzar (Columbia Journalism School)
- Anne Armstrong-Coben (Vagelos College of Physicians and Surgeons)
- Kristen Barnes (Office of the Provost)
- Cecilia Granda (formerly at the School of International and Public Affairs)
- Shavonna Hinton (Columbia Engineering)
- Hilda Hutcherson (Vagelos College of Physicians and Surgeons)
- George Jenkins (College of Dental Medicine)
- lessa Sutton (Office of the Provost)

Yield, Onboarding and Student Support Submommittee

- Katie Bucaccio (Columbia Business School)
- Celina Chatman Nelson (Graduate School of Arts and Sciences)
- Karma Lowe (School of Social Work)
- Laila Maher (School of the Arts) (group co-chair)
- Victoria Malaney-Brown (Columbia College | Columbia Engineering)
- Kwame Osei-Sarfo (Columbia Engineering)
- Elizabeth Peiffer (Weatherhead East Asian Institute and Master of Arts in Regional Studies: East Asia [MARSEA])
- Jessica Troiano (School of Social Work)
- Judy Wolfe (School of Nursing) (group co-chair)
- Tsuya Yee (School of International and Public Affairs)



INTRODUCTION TO THE GUIDE TO EQUITY-BASED GRADUATE ADMISSIONS

Dear member of the Columbia community,

Columbia University is committed to ensuring that our community of students and scholars reflects a broad spectrum of backgrounds, identities, and perspectives. Equity-based admissions is central to that work and critical to our aspirations to attract and prepare the leading scholars and researchers of the future.

Thus, I am delighted to introduce this guide, which is one of the first projects of a new Inclusive Faculty Pathways portfolio—an initiative of the Office of the Vice Provost for Faculty Advancement—which seeks to increase access to our graduate and postdoctoral programs for emerging scholars from historically underrepresented backgrounds.

The guide, the sixth volume in a growing library of diversity resources for the University, consists of three sections: outreach and recruitment; review and selection; and yield, onboarding, and student support. Each is a critical element in a comprehensive strategy to attract and retain a student body that embodies inclusive excellence.

Although this guide was produced by the Office of the Vice Provost for Faculty Advancement, the team informing its contents is far broader. We brought together diversity officers, admissions officers, and student affairs and academic support staff from across the University to share perspectives. The culmination of this work showcases the unique approaches each of the graduate schools employs to attract and support a truly diverse student population. It is excellent work that I hope will spark reflection and discussion.

I look forward to seeing this guide influence graduate admissions practices at Columbia and to future editions that build upon the efforts reflected in this volume.

Sincerely,

Mary C. Boyce Provost Professor of Mechanical Engineering



OVERVIEW FROM THE EXECUTIVE VICE PRESIDENT FOR UNIVERSITY LIFE AND SENIOR VICE PROVOST FOR FACULTY ADVANCEMENT

Dear Colleagues,

The Guide to Equity-Based Graduate Admissions is one of the first projects of the new Inclusive Faculty Pathways (IFP) initiative. We hope that this tool will be used by all those involved in graduate admissions to sharpen their equity lens in every aspect of the recruitment, selection, and onboarding processes.

The creation of the guide resulted from the collaborative effort of the Equity in Graduate Admissions Working Group, including thirty admissions officers, diversity officers, and student affairs staff across the University, representing over fifteen schools and units. We know there is so much exciting work happening at each of our schools, and we are thrilled to feature these practices throughout the guide. The interviews with admissions officers enabled us to highlight their best practices in specific schools and units across the University. This process allowed us to break down the silos created by such a large institution.

This guide is divided into three parts: outreach and recruitment; review and selection; and yield, onboarding, and student support and it provides guidelines for admissions committees on best practices across the academy. In order to have the most diverse application pool possible, it is essential to communicate the accessibility of Columbia to the graduate community with intention. Once we create a diverse applicant pool, it is equally important to provide guidance on processes for reviewing and selecting candidates, conducting a holistic review, and reducing bias in interviews and recommendation letters. Finally, once the students have been admitted, issues regarding yield, onboarding, and student experience and support have to be addressed.

This work is ongoing: based on the research and feedback of the Inclusive Faculty Pathways Advisory Council Working Group and the Yield, Onboarding, and Student Support Subcommittee, we recognize the need for a future guide to delve deeper into the student experience and support services offered at Columbia University.

This is a living document, and we look forward to receiving your feedback, which will be incorporated into the printed version of the guide. Please email us with your suggestions at inclusivefacultypathways@columbia.edu.

Best,

Dennis A. Mitchell, DDS, MPH
Executive Vice President for University Life
Senior Vice Provost for Faculty Advancement
Professor of Dental Medicine at CUIMC

CHECKLIST

Outreach and Recruitment

Recru	uitment events and school visits
	Highlight unique aspects of the institutional culture or community during on-campus recruitment events
	Facilitate interaction with diverse faculty, alumni, and current students during campus visits
	Include visits to schools that have strong Black, Indigenous, and People of Color (BIPOC) representation including MSIs and HBCUs
	Host information sessions at schools that do not offer school fairs
Targe	ted promotion and marketing
	Pair high-caliber print media with impactful in-person experiences to attract students
	Incorporate images that authentically represent diversity in official printed advertising
	Prioritize content that foregrounds testimony of students with lived experiences in the program
	Showcase alumni stories to give potential applicants a sense of the career possibilities afforded by the program
	Encourage faculty and staff members to personally reach out directly via social media to prospective candidates from their networks
	Make personal connections with prospective students at graduate fairs
	Have a strong web presence and incorporate inclusive website design
Recru	uitment strategies: Partnerships
	Provide targeted scholarships and fellowships to students from historically underrepresented backgrounds
	Partner with undergraduate institutions and provide tailored programming to highlight the institution's commitment to diversity, equity, and inclusion
	Involve current students (student ambassadors, student associations, student groups) in the recruitment process to create personal connections and the feeling of belonging
	Partner with national and local pathways leadership programs that can offer academic, social, and financial support for students that are in the pathways programs across the University
	Take advantage of the pathways programs within your discipline to attract historically underrepresented students*
Recru	uitment strategies: Transparency, fee waivers, and admissions officers
	Be transparent about the diversity of your cohorts and about the strengths and weaknesses of the programs
	Provide application fee waivers by partnering with nonprofit or governmental institutions
	Hire a dedicated admissions officer to recruit students from historically underrepresented backgrounds

*For the purposes of this guide, the term "historically underrepresented students," is defined as follows: Applicants who (i) are the first in their family to attend graduate school; (ii) grew up in a single parent household; (iii) have—either as a result of their socioeconomic background, their status as a member of a historically underrepresented group, their disability status, their LGBTQ status, or other challenging life experiences—overcome obstacles on their journey to graduate school; or (iv) are members of a demographic group that is underrepresented in a particular Program relative to the demographic representation in peer institutions or relative to the matriculation rates in bachelor's and master's fields of study that are feeders to the particular Program.

Review and Selection

Test scores and GPA interpretation
☐ Interpret test scores, transcripts, and recommendations for evidence of proficiency as a whole
☐ Look beyond the overall GPA for patterns that may provide clues about the applicant's academic history
Holistic and intentional review
☐ Take into consideration various attributes of the applicant
☐ Consider the criteria of admissions within the context of departmental mission and goals for incoming graduate scholars
☐ Focus your review based on a balance in applicants' experience, attributes, and academic metrics
☐ Give individualized consideration to each applicant
Workshops and trainings for admissions committee members
☐ Provide holistic review workshops for the admissions committee members
☐ Provide implicit bias training for the admissions committee members
Reader guide
☐ Develop a reader guide for the admissions process within your department that includes a rubric, a diversity statement, and a disclaimer
Recommendation letters
☐ Consider the recommendation letter's tone, bias, and alignment with institutional criteria
Interviews
To decrease bias in the interviewing process:
☐ Require and provide bias training
☐ Utilize standardized interview questions in the interviewing process
☐ Develop a rubric for evaluating candidates
☐ Provide a virtual background for the interviews to avoid bias based on room/location
☐ Conduct asynchronous video interviews

Yield, Onboarding, and Student Support

Yield strategies and initiatives	
 Organize events and networking opportunities with admitted with their social identities (BIPOC, first generation, LGBTQ, et 	
☐ Invite admitted students to existing school programming before community	ore they arrive on campus to integrate them into the
☐ Organize an accepted applicants day that includes specific pr	rogramming for historically underrepresented students
$\hfill \square$ Consider fellowships and scholarships that, through neutral c	riteria, include historically underrepresented students
Onboarding strategies and initiatives	
Provide early support strategies such as:	
☐ Summer bridge programs	
☐ Peer mentoring	
☐ Peer leadership	
☐ Coaching for social skills	
☐ Study groups	
☐ Early research opportunities	
☐ Mentoring of students by faculty	
$\hfill \square$ As part of new student orientations, include sessions led by tr	rained staff on diversity
Develop wraparound programming for students such as:	
☐ Creating student affinity spaces	
 Providing opportunities for faculty, staff, and students to for supporting historically underrepresented students 	o learn the values of inclusion and belonging and strategies
$\ \square$ Providing workshops on navigating the institution and ac	ccessing support services
☐ Creating social media groups for the students to connec	ct before they arrive
☐ Providing resources for staff support positions, program	nming, and dedicated physical spaces for students
Student experience and student support initiatives and strategies	
Develop and implement a supportive and inclusive environme	nt through programs such as:
☐ Professional development workshops	☐ Leadership training
☐ Networking opportunities (utilizing alumni networks)	☐ Community building
☐ Specialized advising	\square Research and professional skills training modules
☐ Job recruitment fairs	☐ Personalized counseling services
☐ Faculty mentorship	☐ Financial support for historically underrepresented students
☐ Encourage students to utilize diversity advising and academi	e cupport contore

SECTION 1: OUTREACH AND RECRUITMENT

Equity-based admissions practice requires a thoughtful and sustained recruitment strategy to cast the widest possible net. This section covers recruitment events, marketing, and advertising and a vast array of recruitment strategies for historically underrepresented graduate students.

1.1. RECRUITMENT EVENTS

The COVID-19 pandemic has provided challenges for in-person recruitment events, but it has also provided enhanced options for virtual recruitment events that attract students worldwide. Students facing financial or geographic constraints are now able to participate in more virtual recruitment events, providing them with opportunities to explore schools that otherwise would have been inaccessible. Despite the return to in-person events, virtual and hybrid events are likely here to stay. Yet campus visits can help foster emotional connections to campus and even promote a sense of belonging before the student has committed to the institution. Prospective students are invariably attracted to the culture or climate of university campuses and the kinds of communities that this climate affords.

Types of recruitment events

ON-CAMPUS EVENTS

- Invited campus visits
- Recruitment weekends
- Open houses
- Preview days
- Admitted students events
- Scholarship events
- Road shows and other recruitment events hosted by organizations and institutions around the world:
 - □ National and international conferences
 - SACNAS: https://www.sacnas.org/conference
 - ABRCMS: https://abrcms.org/
 - NOBCChE: https://www.nobcche.org/conference
 - □ Grad school fairs
 - □ School visits

Individual School highlights are provided throughout the guide in the boxes shaded in blue.



VIRTUAL EVENTS

There are a number of ways to engage with prospective students virtually:

Live virtual campus tours

Columbia Engineering hosts a live virtual campus tour every Thursday at 2:00 p.m.

General virtual information sessions

These sessions help prepare students to complete and submit their application to a graduate degree program.

- Program-specific information sessions
- Recordings of past information sessions
- Student panels

Current students share how they navigated the application process and how they made the most of their graduate student experience.

Digital forums

Students have the opportunity to have their questions regarding applying to Columbia's programs answered in real time.

- Webinars on submitting a strong application and application tips
- Virtual student chats
- Virtual meetings with an admissions officer
- Webinars on deferred enrollment



The Fu Foundation School of Engineering and Applied Science Graduate Admissions team is committed to recruiting talented and promising students from all backgrounds. Each year, the Graduate Student Affairs Office attends multiple conferences and events to increase the number of graduate students from historically underrepresented groups in engineering and applied science disciplines. The Graduate Admissions Office also sponsors annual diversity recruitment events such as the Engineering Achievers in Graduate Education (EngAGE).

When conducting in-person events at Columbia University, utilize these strategies to attract and yield historically underrepresented students:

- Highlight unique aspects of the institutional culture or community (Secore 2019)
- Explicitly tailor the campus visit to historically underrepresented students by facilitating interaction with diverse faculty, alumni, and current students (Perna 2004)

This strategy has been shown to play a critical role in attracting students from diverse backgrounds (McCallum 2020; National Association of Diversity Officers in Higher Education [NADOHE] 2021; Toor 2022).

- Tours should highlight the ways in which the institution supports historically underrepresented students and fosters diverse intellectual communities, emphasizing the institution's commitment to equity and inclusion while also presenting the campus as a space for historically underrepresented students to grow and succeed
- Meetings with existing staff and students should be foregrounded: make space for historically underrepresented students to describe the campus culture and community in their own words, so that prospective students get a strong feel for the institutional environment

Practice highlight: Visits to other schools

Scholars recommend establishing and expanding relationships with minority serving institutions (MSIs), including historically Black colleges and universities (HBCUs), Hispanic serving institutions (HSIs), and Tribal Colleges and Universities (TCUs); universities where Black, Latinx, and Indigenous students are strongly represented; and universities with limited research traditions, in order to attract graduate students from historically underrepresented communities (Harvey and Andrewartha 2013; Tienda and Zhao 2017; NADOHE 2021).

Here are recommendations when planning to visit other schools:

- Determine which schools you would like to visit
 Run a report on which schools your students
 attended prior to enrolling at your school. Also
 consider schools from where you would like more
 students.
- Register to participate in graduate and professional school fairs and academic and industry conferences

Note: There is a registration fee associated with participation.

- Host an information session
 - For schools that are not offering fairs or for schools where you are seeking specific students, you may reach out directly to their Career Service Offices or Academic Departments to make arrangements to host an information session about your program(s) and meet their students and faculty.
- Partner with other schools/programs
 Consider hosting a session for your individual school/program or partnering with other schools to offer a joint session discussing the benefits of your schools/programs. You may get more interest for a session where multiple (relevant) schools are represented.

1.2. TARGETED PROMOTION AND MARKETING

Evidence suggests that students from underrepresented backgrounds are more likely to apply for graduate programs where diversity and inclusion is emphasized in marketing materials and public relations campaigns (Garces 2012). This marketing should accurately reflect the diversity of an institution and should honestly outline the advantages and disadvantages of graduate education for underrepresented students (Harvey and Andrewartha 2013; NADOHE 2021).

Traditional advertising sources

Traditional advertising sources, in particular print advertising, remain crucial to graduate student recruitment. Applicants tend to find these sources of advertising more trustworthy than alternative advertising sources such as social media (Shaw 2013). As these materials have higher production costs, it is likely that, even as a larger amount of labor power and institutional focus is directed toward digital marketing, traditional marketing sources will still take up the majority of recruitment marketing budgeting (Shaw 2014). When utilizing print advertising, keep in mind the following:

- Pair high-caliber print media with impactful inperson experiences
 - Especially when paired with in-person experiences such as campus visits or graduate study expos, brochures and prospectuses can endow a graduate program with a sense of importance, quality, or gravitas.
- Incorporate images that authentically represent diversity in official printed advertising material In order to attract underrepresented applicants, materials such as prospectuses or viewbooks should visually depict members of marginalized or underrepresented populations as pivotal, engaged members of vibrant academic communities (Osei-Kofi and Torres 2015). It is important to accurately depict campus diversity rather than conforming advertising materials to some predetermined or symbolic definition of diversity (Pippert, Essenburg, and Matchett 2013).

In today's rapidly shifting media landscape, traditional media—if carefully targeted and efficiently deployed—plays

an important role in graduate student recruitment as part of a larger, well-rounded, tightly integrated marketing strategy (Pippert, Essenburg, and Matchett 2013). Although it is often more formal or informational in tone than social media advertising, print media can, through the inclusion of student profiles and photos, provide prospective applicants with vital insights into the ways in which culture, community, and identity shape the graduate experience.

Nontraditional advertising sources

Social media is emerging as an increasingly powerful tool in graduate recruitment, especially when it is integrated with other, more traditional forms of outreach and advertising (Cohen 2021; Garcia, Pereira, and Cairrão 2021). A 2020 survey of incoming graduate students found that Facebook was the most widely used social media platform, followed by Instagram, YouTube, and LinkedIn (Carnegie Higher Ed 2020). The recommendation is to maintain an active and vibrant social media presence with relevant and meaningful content (Bresnick 2021). This can be accomplished in several ways:

- Create separate social media accounts for your graduate admissions office in order to tailor social media content to potential applicants
- Prioritize video content that can be shared across the top three platforms (Carnegie Higher Ed 2020) This video content should provide a dynamic digital taste of campus life, prioritizing and representing the diversity of the graduate student body.
- Prioritize content that foregrounds testimony of students with lived experiences in the program It is important that student recruitment marketing feels "real"—that the words, video, and images used transmit an authentic representation of the campus environment (Times Higher Education 2022). A 2013 Guardian study found that, while prospective university applicants used social media often, they also viewed social advertising as more untrustworthy than traditional advertising sources (Shaw 2013).
- Showcase alumni stories to give potential applicants a sense of the career possibilities afforded by the program

The successes of current students and alumni especially of students and alumni from historically underrepresented backgrounds—may be prominently featured on social media accounts to boost graduate student recruitment.

- Engage with organizations that work with Black, Latinx, and Indigenous students online such as SACNAS or National Society of Black Engineers (NSBE) (Carnegie Higher Ed 2020; University of California, Irvine 2022)
- Host virtual campus tours via social media Some social media tools (i.e., Facebook Live, 360° photographs) can be utilized to host virtual campus tours for potential applicants to get to know the campus and learn more about the program before committing to an in-person visit.
- Create content that helps orient potential graduate students to the culture, mission, and lifestyle of the program

Applicants tend to use social media most when "finalizing" their decision to apply to enroll in a program, as a means of imagining their life as a student there (Carnegie Higher Ed 2020; University of California, Irvine 2022).

COLUMBIA UNIVERSITY SEPTINE ARTS

The School of the Arts incorporates a vibrant range of multimedia content in promoting its programs to prospective graduate students. With the help of external consultants, it produces videos featuring its key MFA programs, including interviews with students, faculty, and alumni who highlight important aspects of the programs for prospective applicants. Shorter videos highlighting individual students, faculty, and staff, are also used—primarily to create a stimulating visual presence in the school's social media advertising.

COLUMBIA | SIPA School of International and Public Affairs

The School of International and Public Affairs (SIPA) has been conducting admissions outreach online for several years. Its outreach is done through social media, a well-subscribed admissions blog, virtual info sessions, 1:1 video chats, and Q&A sessions to reach people all over the world.

COLUMBIA SCHOOL OF SOCIAL WORK

The Columbia School of Social Work (CSSW), has found content marketing to be its most effective and economical marketing tool. Rather than committing funds toward ads, it has leveraged School and University events that are open to the public, crafting communications/ invitations to prospects, inquiries, and applicants, inviting them to various samplings of the intellectual offerings at CSSW and Columbia University. It manages these communications in Slate and has been able to measure engagement by open and click rates. A typical event of this type generates a very high percentage of engagement. Throughout the cycle, these metrics of engagement have helped CSSW predict the likelihood to apply and yield/enroll quite reliably.

Organic marketing efforts

Studies suggest that informal relationships with faculty are a major factor in motivating students from underrepresented populations applying to graduate programs (Perna 2004; McCallum 2020). Interactions between faculty and prospective students can be mobilized in outreach and marketing campaigns in order to proactively encourage minority students to apply (Toor 2022).

Make social media a priority

Personal connections and outreach can be as effective as traditional advertising. Often in a particular

department or school, the faculty and staff are the experts, and they know the most qualified people or schools, or they have online networks that include likely candidates. The value of promoting their school by sharing a post on social media far exceeds the effort and time that task takes.

Bring in a wide array of faculty and staff to ensure that the reach is maximized, and make it easy for them to engage

Admissions managers should prepare easy-to-retweet or easy-to-reshare posts to social media, especially LinkedIn, along with Facebook, Twitter, and Instagram. These posts should be dynamic, perhaps with video clips, or at least include some form of multimedia.

Make social media a community effort, and engage the staff—"social" means social

Offer staff and faculty tips or lessons on using different platforms, including best practices on format and tone.

Encourage staff members outreach

Encourage staff members to direct-message individuals within their networks, with an emphasis on reaching out to underserved or underrepresented populations.

Be ready to adopt new social platforms as they emerge

Columbia School do

The Columbia Journalism School Journalism has found that reaching out directly to historically underrepresented students has been the most effective

way of increasing the diversity of graduate admissions. The school prioritizes interactions with underrepresented candidates (at graduate fairs, in classrooms) in order to speak directly to their priorities, interests, and backgrounds. The goal is to show underrepresented students, who may not have considered Columbia as a viable option, that the Journalism School is a place where they can comfortably grow and thrive.

Website

A strong web presence is increasingly vital to attract a large and diverse applicant pool. In particular, consider:

Creating websites that are easy to navigate

Important content and information should be made immediately accessible to prospective applicants (Kittle and Ciba 2001). Pages within an admissions website should connect logically and meaningfully with each other and with other sites in Columbia University's web ecosystem.

Developing interactive content to encourage website users to engage more extensively with the interface

Examples include (Klein 2005):

- virtual tours
- □ embedded videos
- □ dropdown material
- □ "two-way" communication with prospective graduate students (i.e., via a campus tour, a Zoom event, or an email newsletter)
- Updating the website regularly to avoid "dead links" or outdated information, and varying the content presented
- Carefully monitoring admissions website data and reevaluating website content

Admissions website data can indicate which materials potential applicants are finding most useful or engaging, which materials are easy for potential applicants to find, and which design decisions may be necessary (Klein 2005).

Incorporating inclusive website design

This can be a powerful tool for attracting a diverse range of applicants to graduate programs (Rogers and Molina 2006).

- ☐ Include a statement encouraging historically underrepresented candidates to apply to your graduate programs and/or a statement outlining the department or graduate school's commitment to diversity (Rios, Randall, and Donnelly 2019)
- ☐ Demonstrate to prospective applicants that diversity, inclusion, and accessibility are integral to the school's mission; embody these aspirations in both form and content on the website
- ☐ Use of alt-text and other ADA features: captioning on videos, proper contrast ratio, etc., to make the website more accessible

1.3. RECRUITMENT STRATEGIES

Targeted scholarships and fellowships

Targeted scholarships and fellowships for students from historically underrepresented backgrounds can play a significant role in fostering inclusion and diversity in graduate programs (Garces 2012; Harvey and Andrewartha 2013; NADOHE 2021; NACAC and NASFAA 2022).

One way to recruit a diverse population is to promote the existence of targeted scholarships in marketing tactics to encourage eligible students to apply. This can be accomplished several ways:

Providing information on the school's financial aid web page

If your school has targeted scholarships, you should provide a link to information and eligibility requirements from your school's main Financial Aid page.

Highlighting targeted scholarships as part of overall marketing campaign

If you are paying for advertisements, consider adding a sentence and/or link highlighting the existence of targeted scholarships.

Use specific ads promoting targeted scholarships If your School has the available budget, it can be useful to place ads in niche media outlets specifically promoting the targeted scholarships.

Direct outreach to thought leaders

Perhaps the most efficient way to reach eligible students is through their current academic connections. For example, if you are promoting a targeted scholarship at a graduate institution, you should contact academic deans and department heads at potential feeder schools (such as MSIs and HBCUs, etc.) and ask them to recommend your program to eligible students.

Partnerships with undergraduate institutions

It is crucial for graduate schools to establish firm partnerships with pipeline undergraduate institutions and to use these partnerships to connect early with strong candidates for graduate programs. Below are best practices to enhance partnerships with undergraduate institutions:

Create connections between prospective students and faculty

Administrators should try to involve faculty as much as possible in these partnerships in order to facilitate informal connections between prospective students and teaching staff. This may include having faculty teach recruitment seminars at pipeline colleges to give advanced undergraduates a taste of graduate education (Woodhouse 2006).

Use partnerships to connect with strong candidates early

Scholars have suggested that conversations about graduate school should begin as early as a prospective student's first year of college (Sutton 2021).

Offer relevant curricular and cocurricular programming

Partnerships with pipeline colleges should offer a range of curricular and cocurricular programming for prospective students to experience the academic and social environment of the graduate program (Nichol 2020).

Utilize your partnerships to increase diversity Graduate programs can use their partnerships with pipeline colleges to increase the diversity of their recruitment efforts.

□ Tailored programming

Graduate programs may tailor their programming at partner colleges to underrepresented students, using these workshops to stress the institution's commitment to diversity, equity, and inclusion (Brown 1997; Johnson 2008).

□ Partnerships with HBCUs

Universities may also pursue partnerships with HBCUs or other colleges with diverse student bodies in order to strengthen the graduate pipeline for underrepresented students (Tienda and Zhao 2017).



A best practice for professional programs such as Occupational Therapy (OT) is to partner with other local colleges such as CUNY, Brooklyn College, Queens College, who serve as feeder schools that send applications interested in the OT profession. In addition, these partnerships provide an opportunity to connect with prehealth advising programs, as well as students at the end of their undergraduate psychology programs.

Role of current students in the recruitment process

Having current students play a role in the recruitment process is vital in order to attract prospective students from historically underrepresented backgrounds. This can only be successful if current students selected to participate are well-supported and have a sense of belonging in their school and program (see Section 3). The current students' involvement in the admissions process can serve multiple purposes:

- To provide valuable feedback to the admissions committee
- To give prospective students an opportunity to learn more about student experiences at the university Informal conversations between prospective students and student ambassadors, student associations, or student groups can create personal connections and increase the feeling of belonging.
- To mentor prospective students on the application process

Peer mentors can provide anonymous feedback to the prospective students on their applications, personal statements, and navigating the application process.



The strength of the College of Dental Medicine (CDM) recruitment lies in the impactful role that the ambassador students play in the admissions process. An hour before the interview process begins, the ambassador students provide an information session on CDM's culture, safety and the day-to-day life at CDM. It's impactful for the prospective students to hear from current students and their experiences at CDM. The lead ambassadors don't participate in the interviewing process, but they provide the admissions team valuable feedback regarding the candidates. The interviewing team, compiled of 20 volunteer faculty members, conveys to the candidates the family side of being at CDM and the Columbia advantage: coming to Columbia is not an expense, but a lifetime investment.

COLUMBIA LAW SCHOOL

The Law School's J.D. Admissions Office enhances their admissions events through partnership with the Black Law Students Association (BLSA), the Latinx Law Students Association (LALSA), and the Native American Law Student Association (NALSA). They hold informal chats with the prospective students and also assist in the recruitment process via letter writing campaigns and phone-a-thons. In addition, the office facilitates the connection of relevant student identity groups such as women or LGBTQ+ groups with prospective students. The office also organizes an informational service event called "Connecting the Dots" that provides prospective applicants to any law school general information about the practice of law. This event provides both a needed service by promoting the benefits of law school and highlights Columbia's programs in the process.

COLUMBIA UNIVERSITY Graduate School of Arts and Sciences

The OADI Student Delegation comprises MA and PhD students with an interest in supporting and promoting diversity, inclusion, and equity within the Graduate School of Arts and Sciences (GSAS). Serving year-long appointments, delegates represent the Office of Academic Diversity and Inclusion (OADI) by participating in student panels, speaking at admissions and recruitment events, leading discussions, and promoting student activities in order to foreground the voices, experiences, and research of traditionally underrepresented students. This is particularly important work as it not only engages students from across academic departments, but also at the different stages of their academic careers, providing students with a community and opportunities to provide informal mentorship.



COLUMBIA UNIVERSITY INSTITUTE OF HUMAN NUTRITION

The Institute of Human Nutrition distinguishes itself through its strategic use of advertising their current programming and webinars to national and international organizations that have their target demographics such as The Student National Medical Association (SNMA). They also reach out to pre-health advisors, connect with university student groups, and engage with historically underrepresented students through personal outreach.



Provost Diversity Fellows

Partnerships and programming with existing national and local pathways and leadership programs

Developing and expanding relationships with organizations that serve underrepresented populations has been shown to help graduate schools improve the diversity of their outreach and recruitment efforts (Garces 2012; Harvey and Andrewartha 2013; Tienda and Zhao 2017).

Academic pathways and leadership programs allow for early identification and cultivation of historically underrepresented students, such as of first-generation, low-income, or Black, Indigenous, and People of Color (BIPOC) students with a strong inclination toward graduate study and a career in the professoriate. These programs often employ a holistic approach that provides academic, social, and financial support that enhances successful outcomes and ensures an equitable environment for learning (Byrd and Mason 2021). In reviewing and evaluating pathways and leadership programs, it is essential that faculty and staff identify programs that best fits their students' needs. Pathways and leadership programs may be broken down into the following categories:

- Region or institution course-based undergraduate research
 - i.e., bridge or enrichment programs
- Government or privately funded initiatives with multiple sites

- i.e., National Institute of Health Research Initiative for Scientific Enhancement (NIH-RISE) or Mays Undergraduate Fellowship Program
- Feeder programs between institutions, and between undergraduate and graduate programs within an institution
- Specialized curricula programs

 i.e., Annual Biomedical Research Conference for Minority Students (ABRCMS) or Society for the Advancement of Chicanos/Hispanic and Native Americans in Sciences

Developing new pathways programs within your discipline

Researchers stress the importance of identifying and expanding the pipeline for historically underrepresented students to attend graduate school. Institutions can increase the diversity of their graduate programs by codifying pathways opportunities for underrepresented students and by recognizing and addressing inequities in this pathway (Harvey and Andrewartha 2013; Winkle-Wagner and McCoy 2016; NADOHE 2021).

Columbia is home to many <u>pathways programs</u> that serve as a bridge for candidates from historically underrepresented groups to advance from high school to undergraduate studies, undergraduate to graduate studies, graduate studies to faculty positions, and junior faculty positions to research



SHPEP and MedPrep Columbia University Pathways Summer Program

independence. These programs serve a range of student populations and represent a diverse number of programs across the University.

In addition, in Fall 2021, as part of the new Inclusive Faculty Pathways Initiative, the Office of the Vice Provost for Faculty Advancement has convened an administrative group called Columbia University Pathways Programs (CUPP) that connects the staff and faculty who coordinate these programs and organizes joint summer programming to create a climate of inclusion and belonging for the participating students.

Factors that make these programs effective:

Research preparedness

Aid scholars in the development of an academic skill set through the introduction of collaborative learning, research methodologies and concepts, and the development of practical and discipline-specific skills and knowledge for graduate study. Scholars should have the opportunity to conduct research, analyze data, and present research results.

Inclusion and belonging

Cultivate an effective learning, training, and working environment where scholars feel respected, welcomed, and included.

Mentorship

Provide scholars with the opportunity to engage in a reciprocal mentorship relationship that benefits the mentee and mentor, and encourages the development of both social capital (networking, access to resources) and cultural capital (academic skill set and behavior that fosters academic success).

Financial support

Optimize scholars' success by minimizing, or alleviating, the financial burdens many first generation, low-income (FGLI) and historically underrepresented scholars encounter.

Promotion of diversity statistics

Recent studies urge graduate programs to be open and transparent about the ways in which diversity impacts admissions (NADOHE 2021; National Association for College Admission Counseling [NACAC] and National Association of Student Financial Aid Administrators [NASFAA] 2022). Reflecting on diversity data—being honest about strengths

and weaknesses—can help institutions identify ways of improving the admissions process for underrepresented students (Toor 2022).

Application fee waivers

Application fees have been proven to deter many historically underrepresented applicants from applying to graduate school; many studies suggest that a broad-based application fee waiver policy can help improve diversity in graduate admissions (NADOHE 2021; NACAC and NASFAA 2022).

COLUMBIA SCHOOL OF SOCIAL WORK

Committed to flexible and open practices in admissions, Columbia School of Social Work has a very liberal application fee waiver process. The fee is waived automatically for veterans of the U.S. Armed Forces as well as for alumni of AmeriCorps, Peace Corps, Teach for America, McNair Scholars, the Higher Education Opportunity Program (HEOP), Educational Opportunity Program (EOP), and SEEK (CUNY). The school also invites any applicant to request a fee waiver due to economic hardship.



SHPEP and MedPrep Columbia University Pathways Summer Program

COLUMBIA | SIPA

School of International and Public Affairs

The School of International and Public Affairs (SIPA) offers fee waivers by partnering with programs such as The Rangel Program, a U.S. State Department program, and the Public Policy and International Affairs Program (PPIA), a not-for-profit organization that has been supporting efforts to increase diversity in graduate studies in public policy and international affairs, and in public service.

Dedicated admissions office staffing for recruitment of historically underrepresented populations

By prioritizing equity and diversity in the composition and practices of admissions offices, graduate programs can help improve the admissions process for underrepresented students (NACAC and NASFAA 2022).

Practice highlight: Recruitment staff responsibilities

The sample job description below shows the main responsibilities of a Recruitment and Admissions Coordinator whose primary focus is recruitment of historically underrepresented students and promoting access and information. The Vagelos College of Physicians and Surgeons (VP&S) has a dedicated staff member in this position.

- The Recruitment and Admissions Coordinator helps develop and implement a recruitment plan to facilitate a strong and diverse applicant pool at VP&S. This role works with HBCUs, CUNY, SUNY, and other colleges that serve a diverse student body. The Recruitment and Admissions Coordinator collaborates with the Office of Diversity and Multicultural Affairs to facilitate a strong and diverse applicant pool through presentations, visiting colleges, attending college fair programs, and communicating with prospective students throughout the admission process. This not only includes HBCUs, CUNY, and SUNY schools, but also our Columbia VP&S pipeline programs.
- The Recruitment and Admissions Coordinator collaborates with other Columbia University departments to increase diversity and access for various Columbia programs. Create work groups to discuss the goals of each department and recruitment tactics that would allow

- for maximum yield, including but not limited to flyers, word-of-mouth, virtual presentations, workshops, and electronic correspondence.
- Act as the liaison with various undergraduate admissions offices, pre-health committees, and post-baccalaureate offices to plan and promote VP&S outreach efforts.
- Establish and maintain relationships with applicants during the admissions process and support their needs throughout this time. Assist applicants from schools that have fewer resources, in terms of support and guidance, who are interested in the field of medicine.
- Collaborate with current students and faculty members from a number of affinity groups to provide information sessions for applicants interested in these specific groups.
- Identify resources that will assist with the holistic review and how we could best provide fairness for all applicants. These resources discuss:
 - □ Implicit/unconscious bias
 - ☐ How we could reduce/neutralize implicit bias within the admissions process
 - Providing the additional resources on the secondary application system as a key resource for screeners, interviewers, and admission committee members involved in the admissions process.



SPREP Columbia University Pathways Summer Program

SECTION 2: REVIEW AND SELECTION

After casting a wide net for applicants, departments and schools are faced with the challenge of equitably reviewing and selecting candidates for admission. This section of the guide will cover holistic review; the development and use of a reader guide; and guidance around reviewing test scores, transcripts, and letters of recommendation, as well as conducting and evaluating interviews.

2.1. PREDICTING SUCCESS IN YOUR DISCIPLINE/PROGRAM

While grade point average (GPA) and test scores are used to evaluate an applicant's intellectual potential, the key is to look beyond total scores and review in great detail the academic record for evidence of this trait.

Test score interpretation

Depending on what is being evaluated, test scores may be used to assess the applicant's English or foreign language proficiency, aptitude, or scope of interest in and knowledge of a particular subject area. However, if the test score is slightly below what is required, then the application should be reviewed carefully. In those cases, the reviewer should look at the test (e.g., scores in each section), transcripts, and recommendations for evidence of proficiency. In short, test scores can help determine a student's potential but should not be the sole variable that determines the applicant's admission.

GPA/Transcript interpretation

Grade point average can provide clues about the applicant's work ethic, and it may tell a story about the applicant's willingness to take risks or intellectual curiosity (e.g., attempting classes outside a major). Similarly, a low GPA may be indicative of a poor semester or academic year, which will pull down the overall average. The applicant may have changed majors or simply have had a bad semester for a host of reasons. While reviewing the transcript, look for the applicant's explanation for any significant change in performance. When looking at the transcript, don't just rely on the GPA, but look for patterns that may also give you clues about the applicant's academic history.

COLUMBIA SCHOOL OF SOCIAL WORK

The Columbia School of Social Work (CSSW) application includes optional questions that can help identify students from historically underrepresented backgrounds. For example, it includes questions on whether the students are first-generation college students, first-generation US citizens, or permanent residents; Pell grant recipient information, which provides greater distinction for assessing financial need; gender identity or other LGBTQ+ identities; and a diversity statement. These questions have had a positive impact on the school overall, because they have raised awareness of LGBTQ+, BIPOC, and other marginalized/underrepresented identities; the need to use proper pronouns; and the need for financial assistance; and they have provided CSSW a great way to track its recruitment efforts across these student populations.

2.2. HOLISTIC AND INTENTIONAL REVIEW

With the growing recognition that standardized test scores and GPAs do not capture the breadth of experiences and qualities that an applicant brings to a university, many schools have begun to incorporate "holistic reviews" into the admission process, with the goal of admitting a diverse body of students that will not only excel academically but also have the qualities needed for success (Artinian et al. 2017). In order to capture the benefits of holistic review, programs should not prescreen large numbers of students based on standardized test scores and/or GPAs alone.

What is a holistic review?

A holistic review strategy is used to assess applicants' unique experiences, including their academic preparedness, anticipated contribution to the incoming class, and potential for success. The goal is to ensure attributes of the whole student are taken into consideration during review.

Measuring such readiness skills and diversity alongside academic achievement measures (i.e., grades, test scores) constitutes a "holistic admissions" process.

Research findings indicate that holistic review has a positive impact on the academic unit, including increased diversity, the admission of students who are better prepared for success, and the admission of students who have faced barriers to success in their lifetimes and who would have been excluded under traditional admissions processes (Glazer et al. 2014). Admissions committee members that utilize holistic review also note an increased awareness of and sensitivity to diversity. However, not all holistic reviews are equal. Being equity-focused, in addition to considering a range of qualifications for admission, helps admissions committee members be mindful of how they weigh certain qualities and criteria relative to others. The criteria and their relative importance should be considered within the context of the departmental mission and goals for incoming graduate scholars.

2.3. BIAS AND HOLISTIC REVIEW WORKSHOPS

Holistic review workshops

In committing to a holistic review of graduate school applicants, admissions officers should be trained in a number of aspects in the applicant review process. To encourage conversation among faculty and staff responsible for selecting new students, the training should be interactive and groups from similar disciplines should be encouraged to attend together.

The workshops should cover a number of areas (Delplanque et al. 2019), including:

Discipline-specific skills/GPA assessment

Consider whether an applicant's ability to engage in certain research, service, mentoring, or teaching opportunities may have been affected by other factors other than choice (access, school offerings, necessity to work extensively to pay for college expenses, etc.).

Diversity

Discuss and consider tools to evaluate applicants' contribution(s) to diversity through their experiences, teaching, research, and/or service activities.

Recommendation letters

Consider the questions that are asked of faculty in their recommendation letters. Include opportunities for participants to identify language within the letter(s) or reference(s) to credentials that may signal bias.

Personal statement

Build process for several admissions officers to review the personal statement to gather multiple perspectives. Encourage the use of a descriptive rubric that delineates specific criteria.

Personal background

Develop a plan to assess applicants' personal circumstances and experiences (i.e., contribution to diversity, obstacles overcome, first-generation status, participation in a graduate preparation program).

Standardized test scores

Consider the equitable use of scores for all standardized tests. If test scores are required, define clearly how the applicants' skills should be evaluated from their test scores.

Implicit bias training

Implicit bias training is a beneficial, and arguably an essential, first step to introducing admissions officers to the ways in which implicit and explicit biases can influence decision-making and behavior. To move toward equitable applicant assessment, admissions officers should receive access to materials that heighten awareness of implicit and explicit bias and provide tools to mitigate bias in the applicant review process. Some units are requiring bias training for those who participate in admissions. For example, the Vagelos College of Physicians and Surgeons (VP&S) requires bias training for all faculty and administrators who have an active role in the admissions process.

The literature recommends that schools develop a plan to identify and reduce implicit biases in the admission process. The plan should not only document the overall process but also state admissions criteria, and points of interactions with applicants, and identify attributes indicative of student success. Recommendations for admissions officers' activity include (Hardy 2020):

 participation in formalized implicit bias training(s) to allow time for adequate self-reflection prior to the admissions process;

- opportunities to read and review research findings on systematic bias; and
- implicit bias knowledge attainment through training, workshops, seminars, and/or reviewing relevant literature.



COLUMBIA LAW SCHOOL

Columbia Law School's Office of Graduate Degree Programs (OGP) was awarded one of the school's Antiracism Grantmaking Program Awards for 2022. Entitled "You Belong Here," the project aims to help identify and remove bias in admissions processes, including by increasing awareness of the Law School's institutional commitment to inclusive and non-discriminatory admissions practices, creating an inclusive community at the admissions and recruitment stage, and providing professional development for staff to advance these initiatives.

2.4. DEVELOPING A READER GUIDE

Introduction

A reader guide is a brief outline of how the reading process will be conducted, including a timeline and explanation of procedures, evaluation criteria, and overall admission goals. Benefits of a reader guide include:

- ensuring an intentional review of the application pro-
- defining standards and best practices for all readers;
- creating a written framework of accountability for consistent review of all applicants; and
- using the guide as a reference for long-term readers and as a training tool for new readers.

If a School has different applications for each program, a different reader review process, or different diversity goals within programs, it is strongly recommended that a reader guide be created for each unique process or goal.

Diversity disclaimer

This is an opportunity to share your school's diversity disclaimer with all applicants. Sample language from the SIPA guide: (insert school name) does not discriminate based on race, color, sex, sexual orientation, gender identity, religion, age, national or ethnic origin, political beliefs, veteran status, or disability unrelated to job or course of study requirements.

Diversity statement

A diversity statement is a written commitment to diversity, equity, and inclusion toward a school's constituents: students, faculty, staff, and alumni.

Diversity goals

A school may have overall diversity goals, and each program may have different or more specific diversity goals based on the demographics of its current historically underrepresented student populations. If applicable, define diversity goals specific to the school and include the program goals within the program-specific reader guides.

Rubric

Develop and use a rubric that includes quantitative and qualitative assessments that are the same for all applicants.



MAILMAN SCHOOL

The Mailman School of Public Health revised its admissions rubric in 2018 in order to increase the diversity of its graduate cohorts. Under the new rubric, readers were asked to assess academic preparedness using a holistic review (including coursework and extracurricular/professional experience and no longer assessing standardized test scores). The school has also instituted implicit bias training for readers in order to ensure that equity and inclusion remain foregrounded throughout this process.

Quantitative assessment

Assign a points system based on the main categories of an ideal candidate. This may include, but is not limited to, academic achievement; professional experience; research contributions; industry fit; alumni potential; and the references/recommendations, essay, video, and interview collected in the application.

Qualitative assessment

This can be captured in an open-ended note or comment section and offers the opportunity for the reader to defend how they arrived at their decision.

- It is important to share examples of qualitative assessments that are free from implicit and explicit bias. Creating an optional description that flags or brings special attention to an applicant that meets the diversity criteria established in the school's definition of underrepresented students provides additional context for admission decisions.
- Making selection decisions without any qualitative assessment is not permissible. If you admit someone with the same quantitative score as a rejection, you must be able to state a reason tied to the rubric for admission.

2.5. REVIEWING RECOMMENDATION LETTERS

Recommendation letters, while helpful, should be used in a supportive capacity in application review. The goal is to use the letter to amplify positives about the applicant, not to look for reasons to deny or diminish candidacy. With the exception of times when recommenders clearly are not supportive of an applicant, it can be challenging to discern what message a recommender is sending. As a reviewer, consider the following:

How recommender comments align with what you value in your applicants

 Consider developing a rubric that you can use to align the recommendation with your institutional criteria.

Tone of the recommendation letter

- Is it a letter of minimal assurance; e.g., short, succinct, and without much depth?
- Is it a letter of evaluation, e.g., highlighting strengths and weaknesses while still reading as affirming?

Bias in the recommendation letter

- As you review, consider what is missing and/or not said in the recommendation and which adjectives are or aren't used to describe students.
 For example: Are women applying to STEM-related areas being described as curious, creative, scientific?
 Perhaps, but men will likely be viewed as more "STEMaligned" than women will. This should not be seen as a negative but rather as an opportunity to more closely evaluate their research interests and other components of their application.
- Think about how gender norms affect the way recommenders perceive the person they are recommending.
 For example: Those who present as female are portrayed more as students and teachers, while those who present as male are portrayed more as researchers and professionals.
- Learn and discuss the current research on biases and assumptions within your field, and consciously strive to minimize their influence on your evaluation. Studies have shown that the more we are aware of discrepancies between the ideals of impartiality and actual performance, together with strong motivation to respond without prejudice, the more we can effectively reduce prejudicial or biased behavior (Devine et al. 2002).

Quality of the recommendation letter

- Consider that evaluators are more likely to rely on underlying assumptions and biases when they do not have sufficient time to devote to evaluations. To help mitigate these impacts, develop and prioritize evaluation criteria prior to evaluating candidates and apply them consistently to all applicants.
- Research shows that different standards may be used to evaluate male and female applicants and that when criteria are not clearly articulated before reviewing candidates, evaluators may shift or emphasize criteria that

favor candidates from well-represented demographic groups (Biernat and Fuegen 2001; Uhlmann and Cohen 2005).

2.6. CONDUCTING INTERVIEWS

The interview gives the school a chance to learn more about the applicants, their interests, and how they'll be able to contribute to the school. In addition, an interview provides a school with an opportunity to give applicants more information about the school and answer any questions. Participation in the interview process also allows the students to tell their own story. Done well, an interview can also serve as a yield tool for historically underrepresented students, especially if the applicant's concerns and priorities around belonging and inclusion are addressed.



VAGELOS COLLEGE OF PHYSICIANS AND SURGEONS

The Vagelos College of Physicians and Surgeons (VP&S) emphasizes the importance of interviewing and face-to-face interaction in its graduate admission process. Interviews also provide admissions officers the opportunity to assess candidates based on a holistic approach. VP&S has found that a personal connection, and citing specific details from a candidate's application, increases the applicant's sense of inclusion and belonging and can help increase the diversity of accepted applicants.

How to decrease bias in an interview

It is necessary to examine personal and professional biases that can surface in the interview process, particularly those that may be amplified in a virtual setting (Huppert et al. 2021). Implicit bias (also called unconscious bias) can affect a person's behavior without conscious recognition. It is important to explicitly discuss this with interviewers in advance of either in-person or virtual interviews (Huppert et al. 2021). Below are recommendations to decrease bias in the interview process:

Require and provide bias training

Require and provide training on unconscious bias and other biases for all recruiters and administrators involved in applicant assessment, including interviews.

- Utilize standardized interview questions
 Schools should consider the use of standardized interview questions, which discourages questions that are not directly relevant to applicant qualifications and ensures consistency across the process.
- Develop an interview rubric for evaluating candidates

This will ensure that reviewers evaluate applicants consistently and in alignment with program goals.

For virtual interviews:

□ Provide a virtual background and recommend that all interviewees use it

Consider asking applicants to use the same video background when interviewing to avoid implicit bias based on their room/location.

□ Conduct asynchronous video interviews

The interviewees are provided with predetermined questions with a set amount of time to record their answers. Because of the lack of real-time interaction, there are fewer opportunities for biases to surface.

SECTION 3: YIELD, ONBOARDING, AND STUDENT SUPPORT

In previous sections of this guide, we reviewed the practices for recruiting and selecting talented applicants from historically underrepresented groups for graduate programs. We then distilled promising practices that are most likely to prove effective in the Columbia University context. We turn now to the question of how to move talented students from admission to enrollment, and through their matriculation to graduation and beyond.

3.1. YIELDING HISTORICALLY UNDERREPRESENTED STUDENTS

There is a general lack of research on graduate student college choice (Wall Bortz et al. 2020). Yield strategies in STEM graduate education are based largely around what competitors are doing, rather than what actually makes a difference for students (Wall Bortz et al. 2020). Students care more about aligning their research interests with those of faculty members than about small increases in financial assistance like stipends or top-ups. In making their graduate school decisions, historically underrepresented students place more

importance on faculty, student, and community diversity and the cost of living than their peers.

When enrolling historically underrepresented students, it is important for institutions to also consider the challenges they face prior to enrolling in graduate schools. Black and African American college graduates owe an average of \$25,000 more in student loan debt than their white counterparts and have an average of \$52,000 of student loan debt. This added expense after graduation has prevented many from owning their first home, getting married, moving out of their childhood home, or establishing independence prior to enrolling in college. Sixty-six percent of Black college borrowers regret taking out loans to enroll in college (Hanson 2021).

Another factor that may influence their decision to attend graduate school is their undergraduate experiences. BIPOC students who attend predominately white institutions (PWIs) face feelings of isolation by being the only non-white peers in their classrooms, they face racial stressors from microaggressions of peers and faculty, and they experience campus racial discrimination (Griffith et al. 2019).



SIPAFest Event



Provost Diversity Fellows Welcome Reception

Yield strategies and initiatives

- Events and networking calls with admitted students and faculty, alumni, or current students that align with those social identities (BIPOC, first generation, LGBTQ, etc.) to build networks
 - Examples at Columbia University: Columbia
 Business School (CBS) Admissions Ambassadors
 partnership with Women's Circle, African American
 Alumni Association, Hispanic Alumni Association,
 CBS student club admitted student chat series
- Inviting admitted students to existing school programming before they arrive on campus to integrate them



Give Kids A Smile, College of Dental Medicine

into the community (Black History Month programming, Women's History Month, Pride events, etc.)

Accepted applicant day

 Specific in-person or virtual programming for historically underrepresented students at admitted student open houses

Funding opportunities

 Fellowships and scholarships play an important role in students' enrollment decisions, particularly for BIPOC students. These can be scholarships, fellowships, etc.

3.2. ONBOARDING—PROGRAMMING TO SUPPORT HISTORICALLY UNDER-REPRESENTED STUDENTS AS THEY TRANSITION TO GRADUATE SCHOOL

Importance of onboarding historically underrepresented students

While many colleges and universities are integrating the importance of a diverse and inclusive culture on their campuses during their orientation, little literature exists on graduate schools offering separate or inclusive orientation to underrepresented students. Underrepresented graduate students are underutilizing university resources, either because they are unaware of what is available or because of feelings of imposter syndrome, shame, or stereotype threat. This highlights a need for graduate programs to initiate an onboarding process for these students.

Howard Hughes Medical Institute (HHMI) invited participating institutions to provide data on their minority programs and determined that early intervention strategies made a difference (National Academy of Sciences [NAS] et al. 2011). For example:

- Summer bridge programs
- Peer mentoring
- Peer leadership
- Coaching for social skills
- Study groups
- Early research opportunities
- Mentoring of students by faculty



SIPAFest Event

Promising onboarding strategies and initiatives

While there is little evidence-based research on programming to support historically underrepresented students as they transition to graduate school, there are many strategies and initiatives that can be deployed. Many schools include, as part of their new student orientation, sessions led by trained staff on diversity. It is important that inclusion and belonging are central to these conversations.

- Current initiatives include the Mailman School of Public Health's "Self, Social, and Global Awareness" (SSGA) program, which provides students with foundational knowledge and skills necessary for creating an inclusive environment and promoting health equity.
- At the Columbia School of Social Work, all new students are required to attend a six-hour training called "Professional Development and Self-Awareness" (PDSA). In these sessions—a daylong event for on campus students and two three-hour sessions for online students—trained facilitators lead conversations about decolonization; social identities and how they show up in their work; analyzing their privileged vs. their subjugated selves; and exploring power, race, oppression, and privilege in social work practice. During orientation week, meet and greets for historically underrepresented students and faculty and staff of similar identities are held. Additional programming is provided throughout the year.

As institutions focus efforts on recruiting historically underrepresented students, it is important to also have wraparound services to successfully pave the way for their success. These services can include:

- Creating spaces for students to connect with networks, including student groups, early on, such as University Life's many affinity spaces;
- Providing opportunities for faculty, staff, and students to continue to learn the values of inclusion and belonging and how to support historically underrepresented students as they join the community; and
- Holding panels, workshops, and other co-curricular opportunities early on.

Topics could include helping students learn how to navigate the institution, including navigation of support services and the social cultural environment(s) of the institution, for example:

- University Life's Graduate Initiative for Inclusion & Engagement
- Helping students navigate their new environment (town, city, area of the country, or country)
- Training advisers, faculty, and other staff on how to best support historically underrepresented students, including ensuring that they are aware of school and university-wide support services and opportunities—e.g., the Columbia Center for Teaching and Learning's Inclusive Teaching sessions and resources

There are also opportunities to use social media and other web-based platforms; for example, setting up Facebook groups that connect incoming students to current student group pages after admission/acceptance and before they arrive and/or connecting one or more incoming historically underrepresented students to a trained current student mentor. In addition, developing early and ongoing intentional social media campaigns and panels to amplify lesser heard voices can also create a sense of belonging.

Finally, resources are essential, whether it be the hiring of DEI (diversity, equity, and inclusion) and/or student support staff, funding for programming, or dedicated physical spaces for students to gather. As we think about how we can support historically underrepresented students as they transition to graduate school, we must always include the necessary resources as part of the conversation.

© COLUMBIA

SCHOOL OF

In 2021, Columbia University School of Nursing (CUSON) launched the PLAN Program (Pathways to Leadership & Advancement in Nursing). PLAN was created to recruit, admit, and support graduate students from economically and environmentally disadvantaged backgrounds from the accelerated graduate Masters Direct Entry (MDE) and the Doctor of Nursing Practice programs. Modeled after Robert Wood Johnson's New Career in Nursing (RWJ NCIN) program of 2010, PLAN offers four core elements to students enrolling in their graduate programs:

- Financial support through a generous financial aid package
- Academic support, which consists of peer academic coaches that provide academic support to PLAN students such as guidance in note-taking and in time management and organizational workshops
- Emotional support provided by the Assistant Director of Student Support through individual counseling University resources, referrals to Student Health services, and group support sessions
- Professional support: PLAN students are assigned an MDE faculty advisor, PLAN advisor, and alumni mentor to discuss professional and career path questions; and students participate in professional workshops with Student Life and attend alumni networking events throughout the academic year

COLUMBIA UNIVERSITY Graduate School of Arts and Sciences

The Graduate School of Arts and Sciences (GSAS) hosts its Preorientation Midday Soiree in late August, about a week before departmental and other University orientation programming takes place. This event helps students find and connect with peers in other GSAS programs before they become so deeply focused on their studies that they can't make time to make friends outside of their department. This is so important because a relatively small number of BIPOC students are enrolled across the more than seventy-five degree programs within GSAS, which can make it challenging to build a supportive community of peers. GSAS structures the half-day program around a brief presentation on academic elevator speeches, speed networking to practice the speeches, a graduate student panel, and a small resource fair featuring key offices from across campus. The event is punctuated by the Students of Color Alliance's annual Welcome Back BBQ that GSAS co-sponsors. New students meet and make lifelong friends through this event.

COLUMBIA LAW SCHOOL

The Law School's Office of Graduate Degree Programs (OGP) serves an almost entirely international student community throughout the academic lifecycle, from admissions through graduation and beyond. It strives to foster a sense of inclusion and belonging from the time of application through a diversity application question and an emphasis on its "You Belong Here" initiative in the admission letter; in the printed admissions package; in admitted student programming; in individual meetings with students; and then, once on campus, in programming on unconscious bias, support spaces for student groups, and healing circles.



White Coat Day, the Armory, College of Dental Medicine

3.3. STUDENT EXPERIENCE AND SUPPORT—PROGRAMMING TO SUPPORT HISTORICALLY UNDERREPRESENTED STUDENTS THROUGH GRADUATION

Importance of ongoing support for historically underrepresented student populations

In an effort to create a more supportive and inclusive environment on campus, colleges and universities across the country have chosen to develop and implement a wide variety of programs and initiatives, including specialized training, advising, networking, and pipeline programs with the intention of improving student support and career outcomes for historically underrepresented students. These programs incorporate a number of resources and support services, such as:

- Professional development workshops
- Specialized advising

- Faculty mentorship
- Community building
- Personalized counseling services
- Networking opportunities (utilizing alumni networks)
- Job recruitment fairs
- Leadership training
- Separate courses or skill-based training modules to enhance research and professional skills
- Financial support

In addition, the implementation of these specific programs has been shown to have a positive impact on students' sense of belonging as well as degree completion and career outcomes of these students, including their ability to secure placements in administrative or faculty positions and achieve tenure (Byrd and Mason 2021; Maton et al. 2016).

Promising student support strategies and initiatives

At Columbia there are numerous successful initiatives and programming that center on bolstering student success from the first days of enrollment to graduation, including several diversity and advising programs that focus on the undergraduate experience that can be adapted to fit graduate student needs.

Diversity advising/programs

Historically underrepresented students in Columbia's undergraduate schools have access to the First-in-Family Program, which centers on the first-generation college experience. Students are invited to attend workshops to learn how to network and how to use campus and academic resources. For students who are considered to be low-income, the University helps provide financial aid support and a network of resources such as:

- □ FLI Network
- Columbia Quest Scholar Network

- Pathways programs can provide any number of support services including:
 - ☐ Professional development workshops
 - □ Mentorship opportunities
 - Community building
 - ☐ Personalized counseling services
 - Networking (including alumni networks and job recruitment fairs)
 - □ Leadership training
 - ☐ Separate courses or skill-based training modules to enhance research and professional skills
- **Financial support** for historically underrepresented students, e.g.:
 - Southern Regional Education Board's State Doctoral Scholars Program
 - Alfred P. Sloan Minority Graduate Scholarship Program
 - □ McKnight Doctoral Fellowship Program
 Fisk-Vanderbilt MA-to-PhD Bridge Program

Tutoring program

Specific help rooms or departmental tutors are provided directly by the relevant department to assist students seeking extra academic help.



Provost Diversity Fellows Panel

Center for Teaching and Learning

The Center for Teaching and Learning at Columbia is a central resource for graduate students and faculty at Columbia to learn innovative pedagogies to improve their understanding of inclusive teaching, including on online courses and workshops that center on antiracism pedagogies.

Writing Center and writing resources

- ☐ The Writing Center provides writing support, in one-on-one consultations and workshops, to help students improve at every stage of their writing, from brainstorming to final drafts.
- □ For the past three years, GSAS students and doctoral students from Teachers College, the Earth Institute, the Graduate School of Architecture, Planning and Preservation, and School of Social Work have participated in the InkWell retreat, an all-day writing retreat focused on the needs of students of color.

Mentoring program, historically underrepresented student organizations, and alumni engagement

The Columbia School of Social Work BIPOC PhD Student Group has dedicated funds in its doctoral program to host events including a student meet-and-greet and an alumni networking event each year. It also has a peer mentoring program for all students, which matches third-year students with incoming students.

Continued financial support if needed

The <u>Provost Diversity Fellowship</u> has been a crucial recruiting tool for the doctoral programs. The University has been looking at ways to support students who are further along in their program, including creating school-funded fellowship opportunities for students at the dissertation phase.

Student support positions and other staffing

Dedicated support staff provide resources, personal advising, events support, and opportunities for social and alumni networking, from application to graduation and beyond.



The Columbia School of Social Work (CSSW) is proud to have made significant progress in lessening the debt of its students overall in the past two years. CSSW is the only known school of social work that has developed a Loan Repayment Assistance Program (LRAP) to aid recent alumni in managing loan debt. These efforts have especially helped BIPOC students who tend to carry a disproportionate amount of debt in comparison to their CSSW peers.

Practice highlight: A focus on supporting doctoral students

We know from experience and from existing data that roughly half of all doctoral students leave their programs without having completed the degree and that, in STEM fields in particular, these numbers are in some instances higher for students from underrepresented racial/ethnic backgrounds (King 2008; Garrison 2013). Moreover, the reasons that determine whether prospective doctoral students from underrepresented groups decide to accept an offer of admission vary somewhat from those for students from other groups and often are tied to their perceptions of diversity and student experience.

Doctoral degree completion trends

Even as students from underrepresented racial/ethnic groups generally have been admitted to and have completed doctoral degree programs in increasing numbers over the past several decades (de Brey et al. 2019; Garrison 2013; Griffin, Munoz, and Espinoza 2012; Zhou and Gao 2021), their representation among all doctoral degree earners within their disciplines and fields and among faculty ranks remain largely unchanged (National Center for Education Statistics [NCES] 2021). This is both because many of these students leave their programs—voluntarily and involuntarily—before completing the requirements for the degree, and many complete the degree but move on to careers outside of academe.

Exit ramps off the path to the professoriate

About half of all students who enroll in doctoral programs do not complete the degree (King 2008). These attrition rates are even higher for students from historically underrepresented racial/ethnic groups, especially in STEM fields. For example, Garrison (2013) reports that about 40% of doctoral students in science and engineering programs who report their race as white or Asian American complete the degree, compared with just 35% among those self-reporting as Hispanic and American Indian/ Alaskan Native and 26% for those reporting as Black/ African American. Time-to-degree shows similar patterns, with Hispanic/Latinx doctoral students completing in seven or more years at a higher rate (36%) than students from other racial/ethnic groups; for African Americans this figure is 27%, and for Asian Americans and whites it is 23% (King 2008).

Generally, the reasons that doctoral students from underrepresented groups take longer or do not persist through completion of their degree programs are unrelated to academic ability or potential (Preuss et al. 2020).

Instead, many students report feeling unsupported within their programs, departments, and their institution. Additionally, although a sense of isolation is common among doctoral students from all backgrounds, these feelings are exacerbated among students from underrepresented and otherwise marginalized backgrounds.

Many institutional characteristics can contribute to the heightened sense of isolation and lack of support among students from underrepresented groups, including:

- Racial/ethnic compositional diversity within the department, the institution, and/or the community in which the institution is located
- Misalignment of students' sociopolitical and cultural interests, ideals, and values with their department's expectations for academic and scholarly work
- Competing, and sometimes conflicting, obligations arising from family responsibilities or other personal matters such as health or financial concerns

By far, the greatest contributor to longer times to degree and higher attrition among graduate students from underrepresented groups is their relationships with departmental peers, faculty, and especially the faculty advisor (King 2008; Craft et al. 2016; Harding-DeKam, Hamilton, and Loyd 2012; Maher, Ford, and Thompson 2004). Across fields, disciplines, and institutions, students from underrepresented groups report experiences with race-based bias, microaggressions, and outright discrimination from peers as well as faculty (Griffin, Munoz, and Espinoza 2012).

Not only can these experiences be exhausting and distracting, but according to Griffin, Munoz, and Espinoza (2012), students who experience these kinds of interactions with faculty in particular "have lower interest in becoming professors, turn in worse academic performance, experience fewer increases in critical thinking ability, and achieve less success in obtaining research grants and fellowships than their peers with positive faculty-student mentoring relationships." Moreover, in avoiding such negative interactions, students are less likely to be integrated into the life of the department and more likely to miss out on important opportunities. They are also less likely to receive from their faculty advisor the instructional mentorship that they need to reach critical milestones in their program requirements. Together, these negative experiences and missed opportunities can create cumulative barriers to completing the degree.

CONCLUSION

The Guide to Equity-Based Graduate Admissions was developed under the direction of admissions officers, diversity officers, and student affairs staff across the University who share many combined years of institutional knowledge and experience. The guidelines provide a foundation for developing, maintaining, and building on admissions practices that help recruit and yield students and make their experience at Columbia University more equitable and inclusive.

Beginning with the Outreach and Recruitment section, the guide provided clear recommendations on best practices in recruitment events, in marketing processes, in collaborating with internal and external partners, and in implementing recruitment strategies that value transparency and financial support. The guide also offers recommendations on hiring dedicated admissions officers that help recruit students from historically underrepresented backgrounds.

The Review and Selection section guided us through the best practices in the interpretation of test scores and GPAs and presented the basis for conducting holistic and intentional reviews. Suggestions included providing bias workshops and training for admissions committee members, developing a reader guide for individual departments, and proposing practices to decrease bias in recommendation letters and interviews.

Finally, the Yield, Onboarding, and Student Support section provided detailed programming recommendations and practices that can be used to enhance a supportive and inclusive environment at Columbia University. Examples include programming specifically designed for historically underrepresented students, early intervention strategies, and wraparound services. This section also focused on student support initiatives and strategies that help students excel in their programs.

Throughout the guide, we featured school highlights showcasing specific programs, scholarships, practices, and strategies that Columbia University's graduate schools employ in their daily practices. These can be viewed as frameworks for developing or enhancing admissions procedures and student services in schools across Columbia University and, more broadly, in academia.

Have we missed anything? We would love to hear your suggestions and feedback, which will be incorporated in the printed version of the guide. Please contact us at inclusivefacultypathways@columbia.edu.

REFERENCES

Artinian N. T., B. M. Drees, G. Glazer, K. Harris, L. S. Kaufman, N. Lopez, J. C. Danek, and J. Michaels. 2017. "Holistic Admissions in the Health Professions: Strategies for Leaders." *College and University: The Journal of the American Association of Collegiate Registrars* 92 (2): 65–68.

Biernat, M., and K. Fuegen. 2001. "Shifting Standards and the Evaluation of Competence: Complexity in Gender-Based Judgment and Decision Making." *Journal of Social Issues* 57 (4): 707–724.

Bresnick, Peggy. 2021. "9 Best Practices for Using Social Media for Student Recruitment." Fierce Education. https://www.fierceeducation.com/best-practices-for-using-social-media-for-student-recruitment.

Brown, R. E. 1997. "African American School Psychologists: Job Satisfaction and Graduate School Recruitment and Retention Experiences." PhD diss., James Madison University.

Byrd, C. D., and R. S. Mason. 2021. Academic Pipeline Programs: Diversifying Pathways from the Bachelor's to the Professoriate. Amherst, MA: Lever Press.

Carnegie Higher Ed. 2020. "Prospective Grad Student Survey: Social Media Preferences and Recommendations." https://www.carnegiehighered.com/blog/prospective-grad-student-survey-social-media-preferences-recommendations/.

Cohen, Georgy. 2021. "Making Content Marketing Work for Higher Education." OHO Interactive. https://www.oho.com/blog/making-content-marketing-work-higher-education.

Craft, C. M., D. Augustine-Shaw, A. Fairbanks, and G. Adams-Wright. 2016. "Advising Doctoral Students in Education Programs." NACADA Journal 36 (1): 54-65.

de Brey, C., L. Musu, J. McFarland, S. Wilkinson-Flicker, M. Diliberti, A. Zhang, C. Branstetter, and X. Wang. 2019. Status and Trends in the Education of Racial and Ethnic Groups 2018 (NCES 2019-038). Washington, DC: National Center for Education Statistics.

Delplanque, J. P., J. Moreno, D. Schaberg, and J. Posselt. 2019. *Holistic Review Toolkit*. Alliance for Multi-campus Inclusive Graduate Admissions Project (AMIGA).

Devine, P., A. Plant, D. Amodio, E. Harmon-Jones, and S. Vance. 2002. "The Regulation of Explicit and Implicit Race

Bias: The Role of Motivations to Respond Without Prejudice." Journal of Personality and Social Psychology 82 (5): 835–848.

Garces, L. M. 2012. "Necessary but Not Sufficient: The Impact of *Grutter v. Bollinger* on Student of Color Enrollment in Graduate and Professional Schools in Texas." *The Journal of Higher Education* 83 (4): 497–534.

Garcia, J. E., J. S., Pereira, and A. Cairrão. 2021. "Social Media Content Marketing Strategy for Higher Education: A Case Study Approach." *Smart Innovation, Systems and Technologies* 205: 493–505.

Garrison, Howard. 2013. "Underrepresentation by Race-Ethnicity across Stages of U.S. Science and Engineering Education." *CBE-Life Sciences Education* 12: 357–363.

Glazer, G., J. Danek, J. Michaels, K. Bankston, M. Fair, S. Johnson, and M. Nivet. 2014. *Holistic Admissions in the Health Professions: Findings from a National Survey.* Washington, DC: Urban Universities for HEALTH.

Griffin, K. A., M. M. Munoz, and L. Espinoza. 2012. "The Influence of Campus Racial Climate on Diversity in Graduate Education." *The Review of Higher Education* 35 (4): 535–566.

Hanson, Melanie. 2022. "Student Loan Debt by Race." Education Data Initiative. https://educationdata.org/student-loan-debt-by-race.

Harding-DeKam, J. L., B. Hamilton, and S. Loyd. 2012. "The Hidden Curriculum of Doctoral Advising." *NACADA Journal* 32 (2): 5-16.

Hardy, Christi Denise. 2020. "Admission Officers' Perceptions of Implicit Bias in the Admission Process." PhD diss., University of Mississippi.

Harvey, A., and L. Andrewartha. 2013. "Dr Who? Equity and Diversity Among University Postgraduate and Higher Degree Cohorts." Journal of Higher Education Policy and Management 35 (2): 112-123.

Huppert, L. A., E. C. Hsiao, K. C. Cho, C. Marquez, R. I. Chaudhry, J. Frank, and J. M. Babik. 2021. "Virtual Interviews at Graduate Medical Education Training Programs: Determining Evidence-Based Best Practices." Academic Medicine 96 (8): 1137-1145.

Johnson, A. H. 2008. "Minority Recruitment at School Psychology Graduate Programs." PhD diss., Indiana University of Pennsylvania.

King, Margaret. 2008. PhD Completion and Attrition: Analysis of Baseline Demographic Data from the PhD Completion Project. Washington, D.C.: Council of Graduate Schools.

Kittle, B., and D. Ciba. 2001. "Using College Websites for Student Recruitment: A Relationship Marketing Study." Journal of Marketing in Higher Education 11 (3): 17-37.

Klein, A. 2005. "Look to the Web to Increase Recruitment: The College Website Continues to Influence Enrollment Decisions. Is Your Site up to Par?" *University Business* 8 (1): 29.

Maher, M. A., M. E. Ford, and C. M. Thompson. 2004. "Degree Progress of Women Doctoral Students: Factors That Constrain, Facilitate, and Differentiate." *The Review of Higher Education* 27 (3): 385–408.

Maton, K. I., T. S. Beason, S. Godsay, M. R. Sto. Domingo, T. C. Bailey, S. Sun, and F. A. Hrabowski III. 2016. "Outcomes and Processes in the Meyerhoff Scholars Program: STEM PhD Completion, Sense of Community, Perceived Program Benefit, Science Identity, and Research Self-Efficacy." CBE-Life Sciences Education 15 (48): 1-11.

McCallum, C. 2020. "Othermothering: Exploring African American Graduate Students' Decision to Pursue the Doctorate." The Journal of Higher Education 91 (6): 953-976.

Nichol, R. J. 2020. "The Undergraduate to Graduate Connection: Establishing Programs to Boost Retention and Drive Enrollment." Liaison Education. https://www.liaisonedu.com/the-undergraduate-to-graduate-connection-establishing-programs-to-boost-retention-and-drive-enrollment/.

National Academy of Sciences, National Academy of Engineering, and Institute of Medicine Committee on Underrepresented Groups and the Expansion of the Science and Engineering Workforce Pipeline. 2011. Expanding Underrepresented Minority Participation: American's Science and Technology Talent at the Crossroads. Washington, DC: The National Academies Press.

National Association for College Admission Counseling (NACAC) and the National Association of Student Financial Aid Administrators (NASFAA). 2022. Toward a More Equitable Future for Postsecondary Access. https://www.nacacnet.org/globalassets/images/about/lumina_report/nacac_nasfaa_lumina_report_0122_10.pdf.

National Association of Diversity Officers in Higher Education (NADOHE). 2021. A Framework for Advancing Anti-Racism Strategy on Campus. Fort Lauderdale, FL: NADOHE.

National Center for Education Statistics (NCES). 2021. "Characteristics of Postsecondary Faculty." *Condition of Education*. U.S. Department of Education, Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator/csc.

Osei-Kofi, N. and L. E. Torres. 2015. "College Admissions Viewbooks and the Grammar of Gender, Race, and STEM." Cultural Studies of Science Education 10: 527-544.

Perna, Laura W. 2004. "Understanding the Decision to Enroll in Graduate School: Sex and Racial/Ethnic Group Differences." The Journal of Higher Education 75 (5): 487-527.

Pippert, T. D., L. J. Essenburg, and E. J. Matchett. 2013. "We've Got Minorities, Yes We Do: Visual Representations of Racial and Ethnic Diversity in College Recruitment Materials." *Journal of Marketing for Higher Education* 23 (2): 258–282.

Preuss, M. D., S. P. Merriweather, S. D. Walton, and K. L. Butler-Purry. 2020. "Minority Student Preparation for STEM PhD Study: Impact of NSF Bridge to the Doctorate Programming." International Journal of Technology in Education and Science (IJTES) 4 (3): 168–187.

Rios, J. A., J. Randall, and M. Donnelly. 2019. "An Analysis of College Choice Information Provided on Graduate Program Websites: Implications for Improving Applicant Diversity in Educational Measurement." Educational Measurement: Issues and Practice 38 (4): 67–77.

Rogers, M. R., and L. E. Molina. 2006. "Exemplary Efforts in Psychology to Recruit and Retain Graduate Students of Color." *American Psychologist* 61 (2): 143–156.

Secore, Scott. 2019. "Administrator Perspectives on the Relationship between Campus Environments and Campus Visits and Student College Choice and Persistence." Strategic Enrollment Management Quarterly 7 (3): 25–38.

Shaw, Claire. 2014. "Have Traditional Student Recruitment Campaigns Lost Their Bite?" *The Guardian*. https://www.theguardian.com/higher-education-network/blog/2014/mar/10/university-student-recruitment-social-mediamarketing.

Shaw, Justin. 2013. "University Recruitment: One Fifth of Students Say Social Media Doesn't Work." *The Guardian*. https://www.theguardian.com/higher-education-network/blog/2013/apr/17/university-student-recruitment-social-media.

Sutton, Halley. 2021. "Graduate School Recruitment Should Begin Day One—As a Freshman." Dean & Provost 22 (11): 12.

Tienda, M., and L. Zhao. 2017. "Institutional and Ethnic Variations in Postgraduate Enrollment and Completion." The Journal of Higher Education 88 (4): 561–592.

Times Higher Education. n.d. "Digital Student Recruitment in the Time of Coronavirus: Alternatives to Traditional Student Recruitment." Accessed March 13, 2022. https://www.timeshighereducation.com/hub/keystone-academic-solutions/p/digital-student-recruitment-time-coronavirus.

Toor, Rachel. 2022. "Lessons from a Career Spent Recruiting Graduate Students of Color." Chronicle of Higher Education. https://www.chronicle.com/article/lessons-from-a-career-spent-recruiting-graduate-students-of-color.

Uhlmann, E. L., and G. L. Cohen. 2005. "Constructed Criteria: Redefining Merit to Justify Discrimination." *Psychological Science* 16 (6): 474–480.

University of California Irvine Biological Sciences Office of Diversity, Equity, and Inclusion. n.d. "Graduate Admissions: A Holistic Approach—Processes and Practices." Accessed March 9, 2022. https://inclusion.bio.uci.edu/resources/faculty/graduate-admission/.

Wall Bortz, W. E., D. B. Knight, C. H. Lylesa, T. Kinoshitaa, N. H. Choe, M. Denton, and M. Borrego. 2020. "A Competitive System: Graduate Student Recruitment in STEM and Why

Money May Not Be the Answer." The Journal of Higher Education 91 (6): 927–952.

Winkle-Wagner, R., and D. L. McCoy. 2016. "Entering the (Postgraduate) Field: Underrepresented Students' Acquisition of Cultural and Social Capital in Graduate School Preparation Programs." The Journal of Higher Education 87 (2): 178–205.

Woodhouse, Shawn. 2006. "Faculty Involvement in Graduate Student Recruitment: Administrative Directive or Professional Preference?" *Journal of College Admission* 191: 26-32.

Zhou, E., and J. Gao. 2021. *Graduate Enrollment and Degrees: 2010 to 2020.* Washington, DC: Council of Graduate Schools.