Race, Writing, and Research: Leveraging WAC to Reduce Disparities in Research Funding and Publication

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Introduction

Minority scientists and clinicians are underrepresented in most research institutions. Not only do members of these groups have limited access to scientific careers and institutions in the first place, but they also too often find that once they arrive they are not promoted, published, or funded as much or as frequently as their white counterparts, even when other factors are controlled (Stevens et al., 2021).

The collective and uncontroversial duty to act to reduce inequities, inequalities, and disparities has seen several necessary and nontrivial efforts and initiatives to motivate writing scholars to put their individual and collective shoulders to the wheel of focused and deliberate action.[1,2] Efforts to change the culture and adopt explicitly antiracist pedagogies and environments for students, instructors, and the community at large in the writing studies/writing across the curriculum (WAC) disciplines have been urgent and necessary. Yet there remains an opportunity for the WAC community to identify what actually and practically might be done to reduce disparities *outside* writing studies/writing across the curriculum fields, in areas other than our own.

Given that we have a rare, if not unique, position in relation to all other disciplines (that is, writing studies as metadiscipline or a kind of "universal donor"[3]), our responsibility to social justice reaches beyond the writing studies or WAC community itself. In other words, how might WAC approaches and disciplinary knowledge

1. See, for example, *College Composition and Communication*, Vol. 73, No. 4, June 2022, which "addresses dynamics of power and race, the nature and configuration of the discipline, and how students learn about writing and negotiate identity."

2. In an introduction to a special number of *Across the Disciplines*, Michael J. Cripps calls for "reflection—and action. What can we do? What will we do?" (p. 1). Cripps, M. J. (2020, July 15). Introduction to Volume 17, Issue 1/2. Across the Disciplines, 17(1/2), 1-5. https://doi.org/10.37514/ATD-J.2020.17.1-2.01

3. The term is borrowed from the science of blood transfusions. There are four main blood types; three have antigens that require a match between donor and recipient. Group or type O has neither of those antigens and so can be transfused into patients of any type. People with type O blood are sometimes referred to as "universal donors."

be leveraged to counter inequities in other disciplinary fields, such as science and medicine? Given that WAC is, by its nature, inter- and multidisciplinary, it would seem that there is a duty to address social justice inequities precisely because of that reach, positioning WAC as a tool for addressing social justice issues.

No single, individual profession, specialty, organization, or learned society will succeed in unbaking centuries of academic and scientific racism. Some such, however, enjoy more traction than others in efforts to foster the aspirations of minority students and scientists. Writing across the curriculum is one such entity. Effective written communication in the service of a fairer allocation of tax and other resources will benefit all disciplines in the physical, social, behavioral, and biomedical sciences. Writing initiatives support chemists and engineers, psychologists and cell biologists, astronomers and nephrologists.

WAC as an Antiracism Universal Donor

Thinking of writing as a comprehensive or global contributor to all scientific fields suggests a practical approach and opportunity. I hypothesize that there are few such universal donors in the academy. Ethics and scientific logic (or critical thinking) are two. It might be that good mentoring is, in some respects, another, despite that it might be the case that a mentor in one's own discipline is more effective than a mentor at some remove. This ability to effect positive change universally—for our purposes, countering inequities across the sciences—entails a responsibility to attempt to do so.

In any case, once one accepts, even provisionally, the idea that writing can and therefore ought to support other disciplines, it remains for us in WAC to strategize how best to meet that obligation. How do we make our commitments to reducing inequities "actionable," to answer the call from Diab et al.? To be sure, much of this important work is already taking place: WAC programs and writing centers nationwide and beyond have for decades offered robust writing support to their faculty and graduate students in addition to their majority work with the undergraduate curriculum. My aim here is to emphasize the obligation to this wider community of researchers and to offer one example of specific work, or a "high-impact practice" (Boquet and Lerner, 2016), undertaken at my institution that could address this in an actionable way—namely, by increasing underrepresented scientists' rates of funding, publication, and citation via direct and targeted writing support and programming.

Writing and/as Discipline

This project is shaped, firstly, by the commitments implied and entailed by both this special issue of the *WAC Journal* as well as the *Across the Disciplines* special issue, "Fifty Years of WAC: Where Have We Been? Where Are We Going?"(Palmquist et

al., 2020). The past fifty years have seen increased WAC engagement in our academic insitutions. Writing studies has grown on campuses in response to a greater need for writing in the disciplines (WID), which in turn reflects a desire for students to be better prepared for both graduate school and the workplace. WAC's half-century trajectory originated in UK-based pedagogy and has evolved to be a core curricular component at universities around the world, especially in North America. Ranging from undergraduate support to cross-curricular endeavors, the very idea of writing across curricula has expanded its scope and, more importantly, its reach. It is now clear that WAC's next half century must meet the obligation to serve as a force for social change. We must not merely make the WAC discipline and community more inclusive and diverse; we must also build on that progress to improve and think more creatively and broadly about every discipline.

Secondly, this article itemizes practical ways WAC can undertake that mission; includes some theoretical background; details efforts at one institution; and offers suggestions for what can be done in the future. While this effort is not unique among peer institutions, the extent and nature of the support outlined is unusual and detailed here as a potential model for other AAU/research-intensive institutional peers.

Broadening WAC's Remit

Writing studies departments and programs, as well as writing across the curriculum entities, can—and therefore ought to—plan, develop, and deliver or increase outreach programs to support Black and other underrepresented scientists who write grant applications and contribute to the peer-reviewed literature, or who aspire to do so. Such programs constitute recognition of the importance of—and, moreover, a response to—the question in the call for this special issue of the *WAC Journal*, "What population of writers have we continued to overlook and need to support more explicitly?" We already know minority investigators are underrepresented in the scientific literature and as recipients of government and other funding (Ginther et al., 2011). WAC inititatives and writing programs and departments should play a more deliberate and focused part in improving the representation of Black, Hispanic, and other minoritized investigators in scientific research.

WAC initiatives, having evolved from writing studies in the undergraduate curriculum, have for five decades remained primarily focused on the undergraduate population. Initiatives in many, if not most, institutions have expanded or increased to involve graduate education, often via writing centers (Cui et al., 2022), as well as working with faculty from other disciplines. Yet that involvement is primarily used in the service of how to better incorporate writing strategies, to support and encourage discipline-based faculty to include best practices in writing instruction, and to extend writing-to-learn pedagogical strategies in content-based classes. Scarce

resources in our discipline mean that developing support and collaborating with faculty on grant, article, and other research writing projects has been limited. This is particularly the case in writing centers, which very often operate with some or all peer tutors, extremely limited resources, and little—if any—long-term expertise in specialized areas.

However, the kind of specialized support for faculty (and graduate students and post-doctoral fellows) that would address inequities in funding for scientists can nevertheless be implemented more widely, even with already stretched resources. The ways in which the WAC discipline might usefully contribute to the scholarly mission, and which would at the same time counter these inequities in the sciences (especially in the biomedical and health fields), already exist: writing in STEM is often already a well-developed part of the WAC or WID curriculum. But though writing in STEM has seen significant support and development, including supporting STEM faculty members who work with their students in the discipline, there has been less attention to working with the faculty members themselves to support their own writing, as I have suggested. In other words, WAC could expand (or perhaps reallocate) its expertise in order to work more explicitly with more faculty who have been traditionally outside the WAC orbit and are underrepresented across the spectrum of government funding, publication, and citation rates.

I outline below some of the strategies implemented at the University of Miami, but broadly speaking, they are all characterized by targeting these populations more explicitly and deliberately, even (perhaps especially) where resources are limited.

Addressing Disparities in the Sciences

According to the National Institutes of Health, "among science and engineering doctorate holders with full-time faculty employment at any four-year institution, underrepresented groups are less likely to receive federal grants or contracts than their white counterparts" (NIH, ND).

In the United States, there are some one thousand different government grant programs "awarding more than $500 billion annually" (Grants.gov, ND). It has long been recognized that minorities are underrepresented in the pool of applicants and in the receipt of grants. The NIH established the National Center for Research Resources (NCRR) in 1990, and in 2011 it was abolished during a reorganization that led to the National Center for Advancing Translational Sciences. Over two decades, the NCRR awarded millions of grant dollars to "reduce the underrepresentation of minorities" in the biomedical sciences. The challenge of doing so was, and remains, shaped by disparities in education, access to mentoring (Levitt, 2010), and opportunities for higher education. It is also shaped by writing experience and expertise, access to writing support, and unavailability of resources within academia

for writing development and training. Indeed, outside the academy, grant writing support has emerged as both a business and a consulting specialty. In addition to having a good scientific idea and knowing how it fits into contemporary research initiatives, successful grant applicants must also write these proposals effectively. At least as much as scientific acumen, the ability to draft grant proposals effectively is an essential component of successful scholarship and, for that matter, of contributions to the literature before and after a grant application. We know that effective writing contributes to greater funding opportunities and better publishing outcomes generally.

The challenge is great. According to the NIH,

> [I]n 2015, only 7 percent of science and engineering doctorate holders employed as full-time, full professors at all institutions were from underrepresented racial and ethnic groups, and at Research Intensive institutions, this proportion falls to only four percent. Moreover, among science and engineering doctorate holders with full-time faculty employment at any four-year institution, those from underrepresented racial and ethnic groups were less likely to receive federal grants or contracts than their white counterparts.

Improved training in grant and article writing might narrow this research funding gap for underrepresented scientists and investigators, and this should be among the goals for WAC programs in research institutions. The gap is clear: "the typical measures of scientific achievement—NIH training, previous grants, publications, and citations—do not translate to the same level of application success across race and ethnic groups. Our models controlled for demographics, education and training, employer characteristics, NIH experience, and research productivity, yet they did not explain why blacks are 10 percentage points less likely to receive R01 funding compared with whites" (Ginther et al., 2011).

WAC Solutions

Writing centers are historically underresourced. Financial wherewithal and other forms of institutional support are often supplanted by efforts to leverage resources for low-cost skills, such as mentoring access to others' expertise in biostatistics or survey design. Writing centers and writing studies departments often do not even have full-time, dedicated faculty experts, where grant writing needs precisely such help. A competent, let alone expert, grant-writing faculty member must, while being a scientific generalist, also be able to work and communicate well with the full range of STEM scientists. Although there are plenty of WAC or writing-in-STEM courses, or subspecialties in technical and health-writing fields, the skills needed to understand and write successful grants, especially R01s and other hypothesis-driven

studies, are generally acquired and honed through significant experience rather than formal courses of learning.

Most of us in the writing disciplines have arrived at grant writing via writing studies, rhetoric and composition, English, linguistics, TESOL, or other closely related fields. Typically, we have not come to writing in STEM from working in STEM disciplines themselves. This might well be a result of funding models rather than deliberate policy, but the result is the same: experts in writing for STEM are usually writing experts, not STEM experts (at least initially). So what makes one a grant writing expert in the STEM fields? This is a hard question to answer. Some of us have taught Writing in the Sciences or worked in a writing center, where we have been needed to respond to students' needs quickly and have been trained on the job, as it were, supported by colleagues and communities willing to share their expertise. It is therefore perhaps surprising—but, alas, not unusual—that many institutions have identified resources for faculty to buy outside commercial services to improve the writing of grants and scholarly papers—even as they somehow underfund internal units that do the same thing, often better. WAC units would do well to collaborate with research offices to secure necessary resources and thereby signal a commitment to writing that is otherwise undermined by outsourcing it.

Our training in writing studies means we are able to respond quickly and effectively to all kinds of communication and at any stage, but the expertise that comes with suggesting revisions and edits for a grant application can take considerably longer. I am not aware of any "quick route" to becoming an expert grant writer, as it takes experience and practice to become adept, let alone expert. Courses that do exist generally address the mechanics of how to *put together* a grant: its constituent parts, researching funding, etc., and often less on the craft and expertise needed in the writing itself (save general and platitudinous advice such as "obtain an undergraduate degree in a writing field or educational studies, programs that teach you the basics of composition, revision, style, and tone") (Western Governers University, ND).

Though it is widely accepted that clear and effective writing is a key component of success in obtaining external funding, it has not, to the best of my knowledge, previously been hypothesized that writing support can improve—or its absence impede—funding success for minority investigators. Indeed, however, this is in many respects an empirical problem, a knowledge gap that, in the fullness of our antiracism ardor, must eventually be addressed. That is, what else besides writing can reduce the underrepresentation of minorities as grant recipients? Thus, we need to develop the following:

- More money to hire faculty of color in the STEM and medical fields. This is a plausible hypothesis, though it entails (and has led to) competition among colleges and universities, albeit in the absence of adequate pipelines

to deliver the needed candidates. Such financial competition also privileges affluent institutions.

- More, and local, pipelines. Reaching out to younger students, even well before they enter college, remains a promising approach. After several decades of effort, we can continue to do much to excite high-school students and some undergraduates about careers in the sciences. Initiatives such as first-year seminars, offices of academic enhancement, first-generation outreach, and similar pedagogical initiatives can engage students much earlier in their careers. (National Academy of Sciences et al., 2011; Summers & Hrabowski, 2006).
- Improved access to and training of mentors. Though improved mentorship is already and often a key component of successful scientific careers, there remain the parallel challenges of inadequate financial support, incompetent mentors, and lack of institutional commitment. Indeed, as one of the nine components of the responsible conduct of research (RCR) curriculum recommended by the NIH, mentorship has in recent years been given more attention as institutions have become aware of how critically important these roles are, especially in the development and support of minority scientists (Henry-Noel et al., 2019).

WAC, on the other hand, could be ready to contribute today. Just as mentorship has been acknowledged as an important part of researchers' scientific development, so writing support and mentoring could and should be introduced and sustained. Indeed, the University of Miami, has introduced a writing component into its RCR curriculum, an effort recognized by the Association of American Medical Colleges' Innovations in Research and Research Education (Breining, 2017).

Meeting these challenges requires that such initiatives should in the first instance (in order to redress the balance as efficiently and swiftly as possible) be directed towards faculty researchers and investigators, bearing in mind that gender- and disability-related disparities are as insidious and pervasive as racial disparities (Dworking et al., 2020; King et al., 2017). Nonetheless, this work should, significantly, begin at the undergraduate level: "Small differences in access to research resources and mentoring during training or at the beginning of a career may accumulate to become large between-group differences" (Ginther et al., 2011).

Our Experience

We have an opportunity to reduce the underrepresentation of minorities in the sciences and to increase grant funding for those groups. The argument that improved support for writing will address this problem is a testable hypothesis. Moreover, it

appears to have no antecedent in policy or the literature. It seems uncontroversial to note that an examination of the intersection of communication skills, grant success, and reduction of disparities is, without question, innovative and timely.

Now in their third decade, the University of Miami's efforts to provide and improve writing support began in a writing studies program and continue with the establishment in 2022 of the new Department of Writing Studies. It has been able to respond to the demand of scientific writing support not least because of the institution's award of a Clinical and Translational Science Institute (CTSI) grant, which covers the faculty costs of group-based and one-on-one grant writing sessions. (The National Institutes of Health's CTSI initiative is under the National Center for Advancing Translational Sciences, mentioned earlier.)

The institution is a medium-sized, private university with eleven schools and colleges. It has responded to writing-support demand via a writing center and the good fortune of the CTSI grant. Obviously, not all institutions have such resources. Indeed, many, if not most, writing centers are staffed by undergraduate or graduate peers. Miami has full-fledged faculty writing groups and dissertation writing groups, sponsored workshops, and used CTSI funding for sessions with individuals. Most clients and participants are white because most faculty members are white. As this demographic changes under robust diversity, equity, and inclusion initiatives, the institution will take its own advice and institute outreach programs to help ensure the success of these initiatives.

As the unfortunate adage has it, "you need to be twice as good to be considered half as good." We therefore need to modify our focus and approach to be more proactive with grant and research writing training and support to those groups who have been historically underfunded and continue to be so. Indeed—and to be clear—this is not to suggest any one group is "in need" of additional training more than another, or that general competency or expertise is any greater in one group of writers than in another. It is simply to say that some scientists—because of complicated and long-standing institutional and societal biases—are less likely than others to receive funding. We therefore must give more attention to those scientists. We know that (i) funding is crucial to individual and collective success in the greater research endeavor, (ii) funding rates increase with attention to and support in writing and communication of that research, and (iii) a clear way to improve grant success rates is to increase support for those groups and individuals to whom it applies. These are practical, indeed actionable, steps that adequately motivated institutions can take without delay.

Fortunately, this is something that we in WAC can help with—now—by focusing and augmenting existing efforts. Indeed, it is our responsibility to do so.

Recommendations and Next Steps

Academia's well-motivated and morally obligatory initiatives to address diversity, equity, and inclusion have access to an underappreciated resource to improve the ability of minority scientists to compete more effectively for government and other research grants. Writing studies centers and departments, if adequately empowered, can serve any and all scientists in STEM disciplines and enhance their ability in that competition. Many already do, but we can still increase our focus on particular groups.

It remains for us to offer suggestions for preliminary directions and steps to augment and improve that service. Based on our experience and aspirations at one mid-sized research institution, these actions are inexpensive and require no special expertise, other than that which is already part of the writing studies arsenal. They are exemplars or instantiations of the several general suggestions that have already been offered and defended throughout this paper, which can be summarized as follows:

- Survey faculty affairs and offices of research administration to identify minority scientists who already are successful applicants for external funding.
- Develop qualitative data-collection tools and use them for interviews with university research leaders.
- Host university campus-wide webinars, using those data-collection tools to survey attendees.
- Codify, collate, and analyze interview and webinar data. This qualitative data will be used to inform subsequent work and support the creation of a database to correlate with future grant application progress.
- Host workshops on writing and reproducibility for students and faculty, with special regard for minority populations and strategies for grant writing success.
- Leverage national and accrediting body mandates, such as the NIH's responsible conduct of research curriculum, to make the case for increased writing support.
- Use the recent attention to mentorship as evidence to show that relatively modest, but focused, investment can lead to greater outcomes for underrepresented researchers.

In two decades of teaching writing and providing grant writing support to undergraduates, graduate students, and faculty members, I have learned that in all disciplines and across all demographics, scientific writing can be improved, often significantly. Because improved support for writing will help all investigators, such support will also address the underrepresentation of minorities in research grant

success. Minorities are underrepresented in STEM disciplines in general, and disproportionately in grant funding and article publication. One source of this disparity is diminished access to training and grant-writing opportunities. Efforts to identify better approaches and interventions are themselves opportunities to fledge research programs to test the hypothesis that better writing makes for better science.

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