



Using Collective Impact to overcome systemic racism

The murder of George Floyd on May 25, 2020, symbolizes the long history and impact of systemic racism and suffocation of minority communities, particularly the Black community, in the US. Systemic issues force these communities to contend with a vast array of obstacles: access to schools (including higher education), healthcare, affordable housing, livable income, jobs and career opportunities, security, and funding for their research. In science, minorities, especially Black scientists, are starkly underrepresented in every sector: academia, NGOs, government agencies, industry, and – indeed – professional societies.

Undoubtedly, there is no shortage of minority undergraduate students interested in pursuing Science, Technology, Engineering, and Mathematics (STEM) majors. Enrollments for both underrepresented minorities and White students are on par. Yet, far fewer minorities graduate with a STEM degree, and they take longer to do so. Fewer than 2% of PhDs in the sciences are earned by Black scholars. Everyday, minorities question whether they belong in science classrooms, tenure-track positions, and careers. Everyday, others question their presence.

For decades, attempts to address this underrepresentation have focused on “pipeline” issues of minority recruitment and retention, with billions of dollars spent on programs to promote interest in science, provide authentic research experiences, and offer peer and professional mentoring as well as community support. Regardless, the numbers have not changed.

When viewed from a landscape perspective, we see a multitude of distinct, unconnected, and isolated programs. From an equity and justice lens, *no single program* will ever succeed in effecting change throughout an individual’s career journey. Success requires attention to support both on and off campus: mentoring and advising; development of technical and “soft” skills; leadership training; and induction into professional networks. Each and all of these have profound and positive impacts on a young person’s career trajectory. The processes of recruitment, hiring, grading/evaluation, professional advancement, and overall institutional culture also must be addressed as they have too often shut doors to minority inclusion. There are simply too many factors for any single program to sufficiently manage. Programs are stuck in a system in which only a few rare individuals triumph – those who persist in spite of these obstacles.

We propose a comprehensive, collective approach that encourages multiple entities and initiatives to work together to *intentionally* address both personal experiences and institutional culture as individuals move through each career stage. The Collective Impact (CI) model developed by Kania and Kramer (*Stanford Soc Innov Rev* 2011; <https://bit.ly/3gEJLEh>) provides a framework for coherent action. With five key characteristics – a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and backbone support – the CI approach shifts the actions and results of siloed activity to coordinated, cohesive, and durable outcomes.

The purpose of a CI alliance is not to develop a new program, but to create a new structure that coordinates and shares *existing* resources, networks, and expertise. In 2017, ESA was awarded a US National Science Foundation INCLUDES grant to pilot *EcologyPlus* (ecologyplus.esa.org), an alliance of Historically Black Colleges and Universities; federal, state, and local government agencies; environmental NGOs; and professional and community networks. Led by partner organizations, *EcologyPlus* facilitates skills workshops, research, networking, internships, and job opportunities that serve diverse undergraduates, graduate students, and early-career professionals. It also offers individuals a mentoring platform to organize and track career goals with their mentors.

One of the hallmarks of a CI design is agreement on success metrics. *EcologyPlus* extended the traditional definition of success beyond academic research careers to include “STEM-capable” careers. We regarded participation in science-related fields not as “leaks” in, but as extensions of, the pipeline into other disciplinary areas. In doing so, we recognized that participant interests were not the same as ours and that there are many types of environmental careers. We see an opportunity to acknowledge the need for ecologists and other scientists to advance in careers ranging from exploratory research to communication, from policy to public health.

In recent months, anti-racism conversations have exposed the systemic roots of the low numbers of Black and other minority scientists in the discipline. Furthermore, we see that numerical metrics alone are insufficient. We believe that other measures like a sense of belonging, an ability to navigate career pathways, and an effective use of professional networks must be included. We invite universities, employers, and organizations to connect within an intentional, anti-racist, CI framework in order to construct comprehensive approaches that will bring about the changes necessary to welcome Black and other minority scientists in all places and across all sectors.

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