#STEMforBLM



ANTI-RACISM RESOURCE LIST for STEM COMMUNITIES

To read the STEMforBLM Open Letter from a group of Goldwater Scholars*, click here.
To participate in our #STEMforBLM campaign, click here.

This is by no means a complete list! If you know of resources you think that we should include, please submit them at this link.

TABLE OF CONTENTS

1. STEM ACTION ITEM RECOMMENDATIONS
    a. HOW CAN I PROMOTE an INCLUSIVE ENVIRONMENT?
    b. HOW CAN I LEAD RESEARCH EFFORTS THAT UPLIFT BLACK LIVES?
    c. HOW CAN I GET INVOLVED in LOCAL POLITICS?
    d. WHAT CAN I DO as a STUDENT?
    e. WHAT CAN I DO as a FACULTY MEMBER?
    f. We as SIGNATORIES of the OPEN LETTER are COMMITTED TO
2. EXISTING RESOURCE LISTS & GUIDES
    a. GENERAL RESOURCE LISTS
    b. EDUCATIONAL RESOURCES
    c. MEDIA & BOOK LISTS
    d. PEER-REVIEWED JOURNAL PUBLICATIONS ABOUT RACE & POLICING
    e. PROTEST, RIOT, & ALLYSHIP ACTION
3. STEM - FOCUSED RESOURCES
    a. BOOKS
    b. PEER-REVIEWED JOURNAL PUBLICATIONS
    c. ARTICLES & MEDIA
        i. PROBLEMS in STEM
        ii. TAKING ACTION
    d. SCIENTISTS & ACTIVISM
    e. DIVERSITY PROJECTS
    f. COMMUNITIES for BLACK SCIENTISTS

* If you are a part of the Goldwater community and want to be involved in future diversity initiatives or want to be a letter signatory, email us at STEMforBLM@gmail.com.
** Disclaimer: This list is compiled by a group of individual Scholars, and does not represent the Barry Goldwater Scholarship and Excellence in Education Foundation, its funding sources, the Goldwater Scholar Community, or Goldwater Scholars/Honorable Mentions as a whole.

1. STEM ACTION ITEM RECOMMENDATIONS

All recommendations were created based on the articles in the subsection 'Taking Action' in Section 3, STEM-Focused Resources.

HOW CAN I PROMOTE an INCLUSIVE ENVIRONMENT?

- Make extra effort to invite Black researchers to academic events, extracurricular events, conferences, office hours, and research opportunities.
- Seek out images, practices, and language associated with your research area that may exclude or cause harm to Black researchers, and how they can be dismantled.

HOW CAN I LEAD RESEARCH EFFORTS THAT UPLIFT BLACK LIVES?

- Disseminate scientific findings to dispel myths that fuel racism. Our resources provide a starting point to learn about these findings.
- Be intentional about inclusion, as color-blind studies can cause exclusion and invisibility. Ensure research includes disaggregation of data by race.
- Advocate for institutional and national biorepositories that reflect diversity of the population.
- Advocate for reconciliation commissions in research institutions such as NIH to investigate why funding has been denied to Black researchers.

HOW CAN I GET INVOLVED in LOCAL POLITICS?

- Vote! Learn about policies that impact Black lives and engage people you know in conversation that values Black lives.
- Local politics can also mean institutional politics. Join committees at your university, or advocate for creation of positions on committees. These positions are a great opportunity to amplify Black voices in decision making.
- Contribute your expertise/skills to grassroots organizations and Black folks.

WHAT CAN I DO as a STUDENT?

- Examine and take part in your institution's admissions and/or hiring process if feasible (for example, some universities allow students to serve on some hiring committees).
- Use your platform to support funding and policy changes that value Black lives and ease burdens perpetuating systemic inequity. Some examples of research programs supporting minority researchers include DHHS supplements, NIH MARC, and NSF REU.

WHAT CAN I DO as a FACULTY MEMBER?

- In teaching, develop course materials that center Black authors and include the lived experiences of Black people.
- In mentorship, seek out opportunities to ensure Black students have early exposure to research and professional development.
- Advocate for consistent and fair practices in tenure evaluation, and review processes for grants and manuscripts.

We as a SIGNATORIES of the OPEN LETTER are COMMITTED TO:

- Creating mentorship programs to actively recruit and support Black researchers in applying for prestigious scholarships
- Reaching out to, encouraging, and offering advice to students from Historically Black Colleges and Universities (HBCUs) to apply to national scholarship competitions
- Actively identifying Black authors on LinkedIn, Google Scholar, ResearchGate, and Academia.edu, and highlighting their work in journal clubs, literature reviews, and academic conversations
- Inviting Black speakers to—and fairly compensating them for—conferences as well as campus and company speaking engagements
- Nominating Black individuals for STEM excellence awards beyond channels specifically designed for diversity
- Purposely joining labs, companies, and organizations with leaders who actively recruit equally representative workforces
- Using leadership platforms within academia, industry, and beyond to amplify Black voices and work
- Refusing racist applications of work and research
- Writing and executing impact statements for research grants (including those funded by the NSF and NIH) that effectively center on Black students and other students of color
- Prioritizing the impacts of research by working to thoroughly engage affected communities at every stage of the scientific process, including in field work and psychology research
- Joining boards of organizations to push forward diversity policies
- Seeking out STEM communication platforms (e.g., STEM Twitter) that promote current and historically overlooked Black scientists

2. EXISTING RESOURCE LISTS & GUIDES

GENERAL RESOURCE LISTS

- A Guide to Allyship (Black Lives Matter)
- A Guide to Anti-Racism
- Black Lives Matter | Resources (Everlane; covers general resources for involvement, education, and support of Black-owned businesses)
- Resources for Accountability and Actions for Black Lives (compiled by Carlisa Johnson)
- Anti-racism Resources (compiled by Sarah Sophie Flicker and Alyssa Klein)
- Petitions, donation campaigns, and phone numbers/emails to contact (compiled by @ambivalcnt)
- How to Support During the Black Lives Matter Movement
- Justice in June - schedule for working through readings and other educational materials (compiled by Autumn Gupta with Bryanna Wallace's oversight)
- Resources from the #ShutDownStem/#ShutDownAcademia project
- Resource list from Particles for Justice
- Ally Anti-racism resources (with an ecology section, complied by @GonzoScientist1)

EDUCATIONAL RESOURCES

- Translating awareness letters & readings to multiple languages (Open Letter Project)
- Glossary for Understanding the Dismantling Structural Racism/Promoting Racial Equity Analysis (The Aspen Institute)
- Talking About Race Web Portal (National Museum of African American History and Culture)
- Teaching Difference, Power and Discrimination (Oregon State University)
- Teaching Tolerance Guide for K-12 (Southern Poverty Law Center)
- What Is White Privilege, Really? (Teaching Tolerance)
- Intersectional Environmentalist website
- Police Killings of Blacks: Here Is What the Data Say (New York Times)
- US Police Killings: What the data tells us (Medium)

MEDIA & BOOK LISTS

- Anti-racism books, articles, TV, videos, movies, etc for white people (Forbes)
- Books, films, social media accounts (Fashion)

- 10 essential anti racist podcasts (Elle)
- 21 racism in America podcasts (Bello Collective)
- Anti-racism books for all POC
- Essential anti-racism books (Buzzfeed)
- Anti-racism books are selling out, read these (Time)
- "13th" - documentary analyzing criminalization of African Amereicans and history of the U.S. prison system (free on Netflix)

PEER-REVIEWED JOURNAL PUBLICATIONS ABOUT RACE & POLICING

- Evidence that curtailing proactive policing can reduce major crime (Nature Human Behavior)

PROTEST, RIOT, & ALLYSHIP ACTION

- Tips for Protesting during COVID
- Financial Allyship Breakdown
- Ways to Help (Black Lives Matter)
- Action Support Resource List 1
- Action Support Resource List 2
- Action Support Resource List 3
- Bail Funds and Legal Resources
- Policy Solutions (Campaign Zero)
- 20+ Allyship Actions for Asians (Awaken)

3. STEM - FOCUSED RESOURCES

BOOKS

(Please try to purchase from local independent and Black-owned bookstores if possible! Refer to this compiled list of 124 Black-owned bookstores)

- *The Immortal Life of Henrietta Lacks*, by Rebecca Skloot
- *Medical Apartheid: The Dark History of Medical Experimentation on Black Americans from Colonial Times to the Present*, by Harriet A. Washington
- *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*, Cathy O'Neil
- *Hidden Figures*, by Margot Lee Shetterly
- *Superior: the Return of Race Science*, by Angela Saini
- *Black Faces, White Spaces; Reimagining the Relationship of African Americans to the Great Outdoors*, by Carolyn Finney

- *Algorithms of Oppression: How Search Engines Reinforce Racism* by Safiya, Umoja Noble
- *Race After Technology: Abolitionist Tools for the New Jim Code*, by Ruha Benjamin
- *Fatal Invention: How Science, Politics, and Big Business Re-create Race in the Twenty-First Century*, by Dorothy E. Roberts
- *Memoirs of Black Entomologists: Reflections on Childhood, University, and Career Experiences*, compilation available here

PEER-REVIEWED JOURNAL PUBLICATIONS

($ indicates paywall. G indicates that a PDF is available via a Google Scholar search. Please reach out to us at STEMforBLM@gmail.com if you have trouble accessing sources, and we will do our best to help you gain access.)

- Why the Nonexistence of Biological Races Does Not Mean the Nonexistence of Racism. (American Behavioral Scientist) $ G
- Signaling Inclusivity in Undergraduate Biology Courses through Deliberate Framing of Genetics Topics Relevant to Gender Identity, Disability, and Race. (CBE - Life Sciences Edition)
- "We Are All for Diversity, but . . .": How Faculty Hiring Committees Reproduce Whiteness and Practical Suggestions for How They Can Change. (Harvard Educational Review) $ G
- Accomplices in the academy in the age of Black Lives Matter. (Journal of Critical Thought and Praxis)
- Consumer Lending Discrimination in the FinTech Era. (SSRN Electronic Journal)
- Diversity and inclusion in genomic research: Why the uneven progress? (Journal of Community Genetics)
- Social cognition or social class and culture? On the interpretation of differences in social cognitive performance. (Psychological Medicine) $ G
- Challenging Racist Predictive Policing Algorithms Under the Equal Protection Clause. (New York University Law Review)
- Dissecting racial bias in an algorithm used to manage the health of populations. (Science) $ G
- "Am I going crazy?!": A Critical Race Analysis of Doctoral Education. (Equity and Excellence in Education) $ G
- The Diversity–Innovation Paradox in Science. (PNAS) $ G
- Graduate students' agency and resistance after oppressive experiences. (Studies in Graduate and Postdoctoral Education) $

- My Sister's Keeper: A Qualitative Examination of Mentoring Experiences Among African American Women in Graduate and Professional Schools. (The Journal of Higher Education) $
- Scientist Spotlight Homework Assignments Shift Students' Stereotypes of Scientists and Enhance Science Identity in a Diverse Introductory Science Class. (CBE Life Sciences Education)
- NIH hopes 'cluster hiring' will improve diversity. (Science) $
- Imposter syndrome threatens diversity. (Science) $
- Toward a more humane genetics education: Learning about the social and quantitative complexities of human genetic variation research could reduce racial bias in adolescent and adult populations (Science Education) G
- The Missing Diversity in Human Genetic Studies (Cell) G
- Barriers and Strategies by White Faculty Who Incorporate Anti-Racist Pedagogy
- Race, Ethnicity, and NIH Research Awards (Science)
- Making Black Women Scientists under White Empiricism: The Racialization of Epistemology in Physics (Journal of Women in Culture and Society)
- Research: Decoupling of the minority PhD talent pool and assistant professor hiring in medical school basic science departments in the US (eLife)
- Active learning narrows achievement gaps for underrepresented students in undergraduate science, technology, engineering, and math (PNAS)

ARTICLES & MEDIA

PROBLEMS in STEM

- Tech Companies Are Still Struggling to Hire Black Workers (Bloomberg)
- Black Tech Employees Continue to Face Workplace Racism (SHRM)
- For a Black Mathematician, What It's Like to Be the 'Only One' (The New York Times)
- Why Are There So Few Black Ph.Ds? (The Atlantic)
- 'Look at how white the academy is': why BAME students aren't doing PhDs (The Guardian)
- Cognitive Reserve and Racial Privilege in STEM (blog post)
- Doing Science While Black (Science Magazine)
- Prejudgement Call (Science Magazine)
- The realities of being a black birdwatcher (CNN)
- 'Bad things happen in the woods': the anxiety of hiking while [B]lack (The Guardian)
- Racism In The Great Outdoors: Oregon's Natural Spaces Feel Off Limits To Black People (OPB)

- BMES Diversity Award Lecture, 2017 by Manu Platt (video)
- Machine Bias (ProPublica)
- Skulls and Skin (Seeing White, Part 8) (podcast)
- Science Has a Racism Problem (Cell)
- Diversity is a Dangerous Set-up (Medium)
- The Disciplines Where No Black People Earn Ph.D.s (the Atlantic)
- 'I Was Fed Up': How #BlackInTheIvory Got Started, and What Its Founders Want to See Next (The Chronicle of Higher Education)
- Grieving and frustrated: Black scientists call out racism in the wake of police killings (Nature)
- STEM+Society: An Op-Ed on Race Relations and STEM (Medium)
- On Being [in STEM]: Refusing to Ignore Racial Trauma (Medium)
- The Disturbing Resilience of Scientific Racism (Smithsonian Magazine)
- Racial and gender biases plague postdoc hiring (Science Magazine)
- On Silence, Survival, and Being Black and Female in Academia (Medium)
- My Dream Come True: An Open Letter to My Colleagues (Rothfels Lab blog)
- Black scientists call out racism in their institutions (The Verge)
- It's Time for Environmental Studies to Own Up to Erasing Black People (Vice)
- I'm a Black Female Scientist. On My First Day of Work, a Colleague Threatened to Call the Cops on Me. (Mother Jones)
- #BlackInNature: How Young Scientists are Pushing for Equality (SciStarter blog)
- Academia Isn't a Safe Haven for Conversations About Race and Racism (Harvard Business Review)
- UC Davis faculty call out anti-Black racism in academia (enterprise)
- What I've learned about being a Black scientist (Science - Letters to Young Scientists)
- The Problem of 'Colonial Science' (Scientific American)
- So You Want to Talk About Race in Tech with Ijeoma Oluo (TechCrunch)
- An open letter to the EEB community (Medium)
- Discussion about the Strike for Black Lives and other related topics by @DNLee5 (transcript by @irisdyoung) (Instagram video)
- Decolonizing Field Ecology (Biotropica) $ G

TAKING ACTION

- 10 Ways For Non-Black Academics to Value Black Lives (Medium)
- 4 Ways That Scientists And Academics Can Effectively Combat Racism (Forbes)
- How Science and Genetics are Reshaping the Race Debate of the 21st Century (Science in the News Blog, Harvard University)

- Scientists push against barriers to diversity in the field sciences (Science Magazine)
- Addressing Racism in STEM Disciplines - a Resource List (Oregon State University)
- Take Action (500 Women Scientists)
- How to Actually Promote Diversity in STEM (The Atlantic)
- White Academia: Do Better (Medium)
- Strategies and support for Black, Indigenous, and people of colour in ecology and evolutionary biology (nature ecology and evolution)
- Black Academia, its time to move (Medium)
- As Scientists, We Have Yet to Close the Racial Disparities (New York Times) $
- An Open Letter to Economic Institutions In The Face of #BlackLives Matter (Medium)
- Navigating racism: Black graduate students need support (The Conversation)
- What I wanted when I called for a Strike for Black Lives (Medium)
- Ten simple rules for building an anti-racist lab (EcoEvoRxiv Preprint)
- Without inclusion, diversity initiatives may not be enough (Science) $ G
- Examples of emails to departments:
    - To Department of Biology and Ecology, University of Maine (written by Professor Jacquelyn Gill)
    - To Department of Earth and Environmental Sciences, Michigan State University (written by Dr. Julie Libarkin)
    - University College London student email template (Dom Borghino, UCL)

SCIENTISTS & ACTIVISM

- Silence Is Never Neutral; Neither Is Science (Scientific American)
- From Scientists to Activists (Union of Concerned Scientists)
- Should Scientists be Activists? (Royal Society of Chemists)
- Should Scientists engage in Activism? (The Conversation)
- Scientists who became activists: are they crossing a line? (Journal of Scientific Communication)
- Improving Online Dialogues About Justice And Equity In Climate And Science (Rowan Institute)

DIVERSITY PROJECTS

- FIELD @ Berkeley – Fieldwork Inspiring Expanded Leadership and Diversity

COMMUNITIES for BLACK STEM RESEARCHERS

- Blacks in Technology: Stomping the Divide; Global platform for black men and women in technology.
- Black is Tech Conference; 2-day experience bringing together black and minority techies.
- Association of Black Psychologists (https://www.abpsi.org/) "sees its mission and destiny as the liberation of the African Mind, empowerment of the African Character, and enlivenment and illumination of the African Spirit."
- Association of Black Women Physicians "is an organized network of Black women physicians committed to the improvement of public health and welfare, through the advancement of knowledge concerning women and the community health." The organization "empowers to lead in health and wellness" and "creates and supports numerous community health and wellness events."
- Black Women in Science and Engineering is a networking and professional development group for Black women who hold degrees in STEM, to facilitate connections and shared experiences among members.
- Development Fund for Black Students in Science and Technology is an endowment fund for African-American students enrolled in scientific or technical fields at Historically Black Colleges and Universities (HBCUs).
- National Association for the Professional Advancement of Black Chemists and Chemical Engineers is an organization "dedicated to assisting black and other minority students and professionals in fully realizing their potential in academic, professional, and entrepreneurial pursuits in chemistry, chemical engineering, and allied fields."
- National Association of Black Geoscientists is a professional organization that hosts a national conference for minority professionals to "connect, communicate, and network with other minority professionals in the geosciences."
- National Association of Mathematicians "While the membership is open to everyone, NAM seeks to promote excellence in the mathematical sciences for underrepresented american minorities in general and African-Americans in particular."
- National Black Nurses Association "serves as the professional voice for over 200,000 African American registered nurses, licensed vocational/practical nurses, nursing students and retired nurses from the USA, Eastern Caribbean and Africa." It has 115 chapters that "provide countless hours of community-based health care services."
- National Conference of Black Political Scientists is an annual political science conference "organized to study, enhance, and promote the political aspirations of people of African descent in the United States and throughout the world."

- National Medical Association “is the collective voice of African American physicians and the leading force for parity and justice in medicine and the elimination of disparities in health.”
- National Society of Black Engineers is a professional organization made “to increase the number of culturally responsible Black Engineers who excel academically, succeed professionally and positively impact the community.”
- National Society of Black Physicists “donations will be used to support students (K-12, undergraduate and graduate students) majoring or interested in physics participate in physics and STEM programs.”
- Society of Black American Surgeons is an organization that strives to “improve health, advance science, and foster careers of African American and other underrepresented minority surgeons.”
- STEM is the new BLACK is an organization to introduce and expose minority students from underrepresented communities to STEM opportunities and careers. “Reshaping the culture with intelligence and creativity.”
- Women of Color Advancing Peace and Security is a professional network made “to advance the leadership and professional development of women in color in the fields of international peace, security, and conflict transformation.”
- Women of Color Research Network is an NIH-organized group for researchers “created to provide women of color and supporters of their advancement in the biomedical sciences information about the NIH grants process, advice on career development, and a venue or forum for networking and sharing information.”
- BlackAFinSTEM (@BlackAFinSTEM); Twitter community