

Coalition of Hispanic, African and Native Americans for the Next Generation of Engineers and Scientists (CHANGES)

July 2013

CHANGES is a coalition of ten (10) Hispanic, African American, and American Indian Science, Technology, Engineering, and Mathematics (STEM) and Architecture-focused professional organizations working together to broaden participation in STEM by encouraging scientific and technical excellence, fostering workforce development and inclusion, and developing policies and programs that promote workforce diversity in science and engineering. Together, these organizations represent a combined membership of more than 100,000 individuals from throughout the United States.

Each member organization of CHANGES has missions that expressly support STEM development for under-represented minorities. Our members make up a powerful pool of scientific and technical talent that has, to date, been historically underdeveloped, underutilized, and overlooked as critical stakeholders in addressing America's STEM challenges. We believe we are more than stakeholders, we believe we hold the solution to maintaining America's pre-eminence in STEM. The purpose of this paper is to lay out the case for both greater national support for our organizations' activities and increased involvement by our coalition at the Federal level in fashioning solutions to the STEM issues that are critically important to the Nation's future.

The constituencies of CHANGES represent a growing demographic in the workforce and a largely untapped source of intellectual human capital. We share the responsibility with other STEM leaders the responsibility to inspire, motivate, and prepare the next generation of scientists, engineers, and architects who will achieve America's innovation and competitiveness goals. Additionally, the mission of CHANGES directly supports both the scientific pipeline and the future viability of the Nation. Therefore, CHANGES, as an entity, directly supports the Obama Administration's Educate to Innovate science education initiatives, the Reauthorization of Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act, and the President's Council of Advisors on Science and Technology 2010 Report, "Prepare and Inspire". Moreover, as global economies and communities become more closely interwoven due to concerns from global warming to high performance buildings, our minority architects, engineers, and scientists will support ongoing related Federal initiatives concerning renewable energy, climate change and urban agriculture. These executive-level efforts make it clear that we have a national priority to increase science literacy and move students to the head of the pack; and a national imperative to expand the education and career opportunities for under-represented minorities and women in STEM to fully meet the Nation's challenges. Several of our organizations have established links with technical institutions and industries in Africa, Central and South America that positions CHANGES as a valuable resource in realizing our nation's global efforts.

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CHANGES is a critical stakeholder that seeks to have a stronger voice and visibility at the STEM development and policy-making table when it comes to successful capacity building of minority technical talents. We are a vital link to a third of the population that our nation envisions as the STEM-capable citizenry of the future. We are uniquely positioned to positively impact strategies for science teaching and learning, and recent research indicates that learning science is more than the recall of facts and science concepts; culture, personal experience, and the presence of role models play a vital role in how our youth relate to science.

Members of CHANGES who embrace science and technical careers, can testify that the goal of achieving cultural sensitivity and equitable treatment in the workforce is just as challenging as increasing the numbers.

It is with these factors in mind and knowledge of the many workforce and innovation challenges that lie before us, that the leaders of CHANGES request greater national support for our organizations' activities and increased involvement by our coalition at the Federal level in the development of solutions to the STEM issues.

Therefore, CHANGES:

1. Seeks national recognition and support as a full partner in STEM Development to develop and reinforce strategies that are the best fit for Hispanics, African Americans, and American Indians. We welcome other organizations to join or partner with CHANGES;
2. Supports diversification of senior level Federal STEM positions and policymaking Advisory Boards and Councils. CHANGES is available to assist in the identification of highly qualified candidates for these positions;
3. Encourages a Federal focus on STEM Development and adoption of practices that recognize and accommodate cultural differences in science learning;
4. Promotes development of Federal initiatives designed to lessen the barriers to recruitment and retention of minorities in STEM majors and professions
5. Seeks to influence the implementation of fairer Federal contracting policy practices that affect minorities currently in the STEM workforce;
6. Seeks to increase the involvement of STEM professionals from the federal, corporate and academic sectors in the education pipeline.
7. Offers its unique, influential, cadre of talent to local, state, and Federal agencies as they seek to expand their impact domestically and internationally in the African and Latino Diasporas in the areas economic development and national security.

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With regard to specific issues recently identified by the Obama Administration, there are clear and immediate actions that can be taken either through legislation or implementation of existing legislation or Executive Order. In keeping with the role of CHANGES as a national resource and entity capable of addressing existing barriers to the STEM development for under-represented minorities, below are suggested actions that the current Administration can take.

Issue	Recommended Actions for Administration
Building the pool of skilled STEM mentors and role models	
<ul style="list-style-type: none"> Lack of mechanisms and accountability for Federal Departments' implementation of Federal initiatives that encourage volunteers to serve as role models to positively impact science interests and retention 	<ul style="list-style-type: none"> Require accountability by Departments to both disseminate information to employees and provide the employee support for involvement. Provide Federal guidance on Agency performance measures and Strategic Plans which includes volunteerism Add "volunteer leave" to annual and sick leave, with the necessary verification measures needed
Giving teachers the tools to broaden participation and increasing access to rigorous STEM course	
<ul style="list-style-type: none"> Lack of incorporation of minority scientists and engineers in the planning, implementation, and evaluation of Federal initiatives targeted towards minority students 	<ul style="list-style-type: none"> Build into the NSF CS10K computer science initiative and others a component of outreach to include on the information distribution professionals, as well as graduate and undergraduate students from underrepresented groups who are majoring in, or have gotten a degree in, Computer Science. Provide a level of Federal support (visibility, endorsement, resources) for existing camps for girls and minorities – Summer programs as well as school-after-school and community center programs
Reducing barriers to STEM opportunities at Minority Serving Institutions	
<ul style="list-style-type: none"> One-size fits all Financial Aid structure that does not address family dynamics 	<ul style="list-style-type: none"> Perform a comprehensive assessment of Financial Aid for students of color taking into consideration factors that are disproportionately applicable to people of color: family needs, non-traditional dependents, language barriers, unemployment, citizenship, etc
Improving workplace environments for America's scientists and engineers	
<ul style="list-style-type: none"> Lack of management support and promotion opportunities at the middle-management and supervisor level 	<ul style="list-style-type: none"> Adopt a government-wide performance measure for supervisors pertaining to diversity, inclusion, and merit-based promotion Hold Federal departments accountable for workforce satisfaction on issues of diversity, inclusion, and merit-based opportunities Improve training of Federal managers and supervisors on the value of diversity and inclusion Include diversity and inclusion ratings in promotion criteria for Federal Employees

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Improving Selection of Minority Contractors for STEM Related Contracts	
<ul style="list-style-type: none">• Lack of selection of minority contractors for Federal service and project contracts	<ul style="list-style-type: none">• Hold Federal departments accountable for contract awards to use minority contractors or justify exclusion• Require third parties and private companies providing services and projects related to STEM to subcontract to minorities
Development and Continuing Education	
<ul style="list-style-type: none">• Lack of funding and/or programs that provide opportunities for professionals and recent college grads to obtain preparatory training for certifications and other STEM specific training to further develop STEM skill sets	<ul style="list-style-type: none">• Provide mandatory training requirements and optional certification opportunities to adhere to a “skill set” standard in compliance with the needs of the agencies.• Allow preparatory classes be taken during business hours in order to achieve maximum benefits from any training and/or certifications approved for employees

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