

# A NEW ERA IN STEM EDUCATION

JAMES BROWN  
EXECUTIVE DIRECTOR,  
STEM EDUCATION COALITION



Executive Director James Brown returns to the pages of *International Innovation* to report some of the Coalition's achievements over the last year and its plans to evaluate STEM education programmes in the US



***International Innovation* interviewed the STEM Education Coalition last year – welcome back! To recap, could you provide a brief history of the Coalition and its objectives?**

The Coalition is a broad alliance of education, business and professional organisations that are united in the goal of promoting policies to improve STEM education at every level. Our Coalition closely follows the development and evolution of policies across the Federal Government that seek to address the challenges our nation faces in educating the future STEM workforce. We have continued to grow as a group and a movement, and have more than 600 members from across the US. Our Coalition's Leadership Council – the group that helps guide our agenda and activities – now stands at 37 members and has strong and diverse representation from every sector of the STEM stakeholder community.

**What have been some of the Coalition's most memorable highlights from the past year? Are there any particular projects, initiatives or achievements you wish to call attention to?**

2014 has been a busy year for the Coalition. A number of new STEM education policy issues have arisen this year as the US economy has continued to rapidly evolve and adapt to changing global needs. We spent much of the first half of 2014 working on federal budget issues and attempting to persuade the Obama Administration to craft a better strategy for utilising increasingly scarce federal resources to improve STEM education. We've made some great progress, but there is much more to be done to ensure that federal education investments in STEM subjects are put to good use.

One new issue we've spent some time trying to understand is the emerging reality that nearly half of new jobs in the STEM workforce don't require a traditional four-year college degree, and so are served by community colleges, trade schools and a variety of other educational pathways. These are jobs like auto mechanics, craftspeople in advanced manufacturing, cybersecurity specialist, and other forms of modern technicians.

Another new area is around informal STEM education and the myriad of learning opportunities available to students outside of the regular school day, whether on campus, through local museums and science centres, or elsewhere in communities across the country. Integrating these emerging career pathways and learning opportunities into a better STEM pipeline is quite a challenge.

Finally, we have expanded our engagement on state STEM issues by taking a stronger and more public position in support of modern, high-quality state learning standards in the STEM subjects. There is a robust debate underway about common standards that can be adopted by multiple states, which can then share practices and tools to promote better learning. This debate is going to last for many years and the STEM community has to become more engaged at the state level.

**How are you transforming the education landscape in the US, and improving the way students learn STEM in America?**

We focus on improving federal and state policies that influence education. The members of the STEM Education Coalition share the belief that elevating the STEM subjects as a national priority will

enable the US to grow its workforce and build a stronger economy. As studies show, the unemployment rate is lower and average salaries are higher for those working in STEM fields versus non-STEM fields. Our nation must expand the capacity and diversity of the STEM workforce, to prepare more students for the best jobs of the future that will keep the US innovative, secure and competitive.

While it is relatively easy to discuss the broad challenges we face around US competitiveness and STEM education, it is much harder to construct reasonable policy solutions. We continue to fight for elevating science, alongside mathematics and reading, as a national priority in educational accountability frameworks. We are attempting to work with the Obama Administration to chart a better direction for the use of more than US \$3 billion in federal funds directed at STEM education activities scattered across more than 200 different programmes. And we are pushing for better alignment of education programmes to the changing needs of the modern workforce. None of these are easily or quickly achievable goals, as the legislative process moves slowly, so we have a long-term outlook in our efforts.

#### Furthermore, are you working to improve STEM education in other countries?

While our focus is on US policy, many of our Coalition members have international interests, members and customers. It is surprising how often international governments contact us to learn about current developments in US education in the STEM fields. As much as we Americans focus on how we seemingly struggle to keep up with our global competitors, many countries continue to view the US as the world education leader. One area where the Coalition has been active, is in hosting delegations of international educators who are seeking to learn about the US system. Most recently,



## MEASURED PROGRESS

Measured Progress is the newest member of the Coalition's Leadership Council, which guides its policy agenda and participates directly in advocacy work. A non-profit entity based in New Hampshire, Measured Progress is heavily engaged in work around student achievement and has extensive experience in developing assessment tools to support common core standards. It is also a leader in STEM subjects and has partnered with many of the Coalition's members on projects.

the Coalition's staff met with leaders from the Republic of Chad, Central Africa, and we have engaged in similar cultural exchanges with other international educators from Iran, Egypt, Pakistan, Russia and Morocco.

#### What work are you conducting at the community level to address educational challenges and concerns?

Our Coalition has more than 600 affiliate members worldwide, many of which are local organisations seeking to improve STEM education in their own communities. We try and keep these groups informed about national developments in STEM education policy. We also field a regular stream of requests each week by groups interested

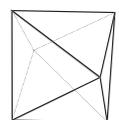


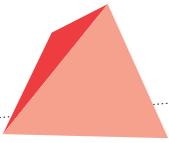
## WOMEN IN STEM

The STEM Education Coalition supports comprehensive efforts to expand the capacity and diversity of the STEM workforce pipeline, including targeted initiatives to promote the inclusion of underrepresented minorities, women and other high-need populations in STEM fields.

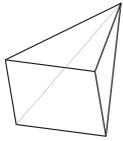
As the Coalition grows the STEM pipeline, elevating role models in the STEM fields is an incredibly important element of its work. The Coalition has worked with leaders such as Lieutenant Governor Sue Elsperman of Indiana and her colleague Lieutenant Governor Kim Reynolds of Iowa, as well as prominent individuals like Nina Davuluri, Miss America 2013 – the first winner of that contest to hold a STEM degree.

One of the Coalition's goals is to highlight leaders that are promoting STEM education in new ways, especially to audiences that are underrepresented in STEM fields like women and minorities. Interviews with Reynolds and Davuluri are posted on the Coalition's website.





## POLICY ENGAGEMENT



The Coalition has met with more than 40 US House of Representatives and the Senate so far this year and organised two large-scale congressional staff briefings, one in February with the Congressional Black Caucus to discuss STEM diversity issues and the other in July with a large group of House and Senate staffers to informal STEM policy issues.

The Coalition has worked with a number of House and Senate legislators to advance specific legislative proposals. In July, the House passed a bill called the STEM Education Act that would establish a comprehensive definition of the STEM subjects for the purposes of federal grants that would be adapted to the needs of each state based on its workforce needs.

In addition, the Coalition worked with the Office of Senator Jeanne Shaheen (state of New Hampshire) and the Afterschool Alliance to develop the Supporting Afterschool STEM Act, to promote greater research into the best practices in informal STEM education and better collaboration between US Federal Science Agencies like the National Science Foundation and NASA on informal STEM programmes.



in partnering with local STEM stakeholders on educational projects and we try to help make those connections. Education is a very local activity and many communities are struggling to define what STEM means for them.

### Are you working with industry partners to encourage STEM education and careers?

Our Leadership Council consists of the frontrunners of industry, education, innovation, research and professional organisations. Additionally, our affiliate membership has grown exponentially over the past year. As such, our members recognise the need to work together to promote STEM education and careers. This year, we have created and formed working groups to address the need for further career and technical education for American students. This fall, the Coalition went onto Education Talk Radio with one of its members, the Universal Technical Institute, to discuss the options and avenues students have by pursuing career and technical education. Members of the Coalition also worked closely with Congressman Joe Garcia (District of Florida) to introduce the Innovative STEM Networks Act, a bill that provides competitive grant opportunities to states that form network-based partnerships between schools, universities and community group to promote the STEM subjects.

### How has your position as Executive Director evolved this year? Do you have any new or exciting responsibilities?

One area where I have had to spend a lot more time this year is on media relations, because the number of press inquiries we've received has continued to grow. In the last year, I have been invited to testify before Congress and have done several live radio and television interviews, including an hour-long national interview on Cable-Satellite Public Affairs Network (C-SPAN) to discuss President Obama's STEM agenda ([bit.ly/c-spanstem](http://bit.ly/c-spanstem)). This is definitely new and exciting territory and it's a privilege to be involved with such a great group of organisations.

### What other avenues would you like the Coalition to explore in

### the near future?

Our Coalition has a long history of support for comprehensive and strategic efforts to coordinate, evaluate and review all federal STEM programmes on a regular basis to ensure that effective programmes are scaled up and that underperforming ones are improved or eliminated. We believe that effective policies to manage the federal STEM education portfolio should be evidence-based and must be informed by a strong and supportive community of stakeholders in the business, professional, research and education communities. Scaling up what we can agree works is critical to improving real learning opportunities for the millions of students who must succeed in STEM fields in the future.

[www.stemedcoalition.org](http://www.stemedcoalition.org)

