

Science, Technology, Engineering and Mathematics (STEM) Education

Witnesses

Dr. Karen Lozano

Professor at University of Texas Pan American, Parent to Pablo Vidal

Master Pablo Vidal

Third Grade Student at Discovery Montessori School

Mrs. Brenda Conwell-Dudley

Parent to Jack Dudley and Mentor to the HEADS UP! Team

Master Jack Dudley

Sixth Grade Student at Virginia Virtual Academy

Ms. Amy Attard

Science Teacher and Coach to the I-TBS: Intra-Trachea Team

Miss Claudia Cooper

Seventh Grade Student at West Hills Middle School

Ms. Anne Manwell

Science Teacher and Mentor to the 3Drenal: Kidney Bio-Printer Stuyvesant Team

Miss Alison Reed

Tenth Grade Student at the Stuyvesant High School

Full committee members present

Ralph Hall-Chairman (R-TX)

Eddie Bernice Johnson-Ranking Member (D-TX)

Roscoe Bartlett (R-MD)

Marcia Fudge (D-OH)

Lamar Smith (R-TX)

Steven Palazzo (R-MS)

Mo Brooks (R-AL)

Chip Cravaack (R-MN)

Hansen Clarke (D-MI)

Larry Bucshon (R-IN)

F. James Sensenbrenner (R-WI)

Rubén Hinojosa (D-TX)

Frederica Wilson (D-FL)

Terri Sewell (D-AL)

Dan Benishek (R-MI)

Jerry McNerney (D-CA)

Donna Edwards (D-MD)

Ben Quayle (R-AZ)

Dana Rohrabacher (R-CA)

Non-committee members present

Gary Peters (D-MI)

The House Committee on Science, Space and Technology met on June 16, 2011 to discuss current Science, Technology, Engineering and Mathematics (STEM) education activities.

Chairman Hall in his opening remarks and other members of the committee highlighted the importance of STEM education and gave a warm welcome to the student witnesses. Ranking Member Johnson (D-TX) reported that “less than half of our nation’s students are demonstrating solid academic performance and proficiency in science,” according to the latest National Assessment of

Educational Progress (NAEP) study. Therefore, she stated STEM education is an issue she takes seriously and hoped the hearing would bring to light current STEM education activities.

The hearing focused on the ExploraVision Awards National Competition. Four of the eight winning teams received an all-expense paid trip to Washington, DC and participated as witnesses in the hearing. Those at the hearing represented the top scientific research projects, ranging from helmets for military troops to medical respiratory devices.

In her testimony, Dr. Lozano, spoke of the importance of getting young kids involved in innovation. She compared the creativity of those involved in the ExploraVision program to her senior level college engineering students and how the spark of creativity is more prevalent in the younger students. She stated the program keeps the students engaged and leaves a good impression as they begin to think about their possible career tracks. The second witness, Brenda Conwell, explained in her testimony the various resources the students used such as interviews, the internet, and libraries to learn about their subject matter (brain function and traumatic brain injuries). Additionally, she stated students learn about deadlines, communication, and collaboration, all of which are important tools for any scientific research project. She was sure that the students “at the very least, developed a better understanding of the world around them.” In the third testimony, Amy Attard spoke of the impact the ExploraVision project has had on her students. Her students’ projects were amazing, she said, “but more importantly, through this project students developed the skills of being an inquirer, a problem-solver, and a communicator.” Additionally, she said programs such as ExploraVision allow the community to see what is going on in the classroom. The fourth witness, Anne Manwell reiterated in her testimony what Attard saw in her students. “We at Stuyvesant have found that engaging our students in competitions allows them to be creative, think broadly and critically, work in teams, develop time-management skills.”

The questioning allowed the students to give their input and speak of their first-hand experiences. Claudia Cooper explained that her project started simply as a class requirement, but as it progressed she came to realize the potential of her generation to innovate and conduct research that would help others. Furthermore, she said the inspiration for their research project, a respiratory device, came from her grandmother who was suffering from respiratory problems.

Dana Rohrabacher (R-CA) expressed that he would like to see a realignment of incentives for those in the STEM industry. For example, he said he would like to see higher wages for engineering and science educators. Additionally, he expressed concerns that American public can begrudge the royalties and inventor might receive, yet widely accept that movie stars and athletes make large sums of money. His hope is for America’s incentives to be properly aligned with what can give the country a competitive edge globally.

Marcia Fudge (D-OH) raised concern over the issue of accessibility for programs such as the ExploraVision program or any specialized science program. Though there was diversity in the types of schools represented, Montessori (private), charter, home school, and public schools, Fudge reiterated that the playing field was certainly not an even one. Students qualifying for free or reduced lunches comprise well below ten percent of the student body at West Hills Middle School in West Bloomfield, MI. Fudge compared that to her district where 85 percent of the total student population is low income. In Stuyvesant High School in New York, Hispanics represent only three percent of the student body. However, Hispanics represent 40 percent of the total student population for her district in NY. Stuyvesant High School requires an admission test and many opt for test preparatory services at a significant fee.

Johnson raised concerns with budget cuts and administration costs and being able to increase STEM education. Conwell has used virtual distant learning technologies for Jack, her son. Johnson questioned whether such technology could be successful in STEM education. Conwell stated her experience with the “Illuminate Live” technology was very successful and thinks other students would also find it beneficial. Other concerns raised included how the nation can increase its efforts to make STEM education appealing for young students.

In the concluding remarks, Donna Edwards (D-MD) assured the audience that while many people have a “gloom and doom” outlook, she looks at those students and knows “we will be just fine.” Johnson expressed her enthusiasm for the projects the students had done and the hope they bring for the future of STEM.

Opening remarks, testimonies, and an archived webcast can be found on the committee’s web site.
