

20
Years

SCIENCE BOUND News

Volume 10, Issue 2 Spring 2011

www.sciencebound.iastate.edu

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Celebrating **20** Years

SCIENCE BOUND: Changing a generation

LETTER FROM THE DIRECTOR

Twenty years ago, the Human Genome Project started mapping the 20-25,000 genes in human DNA to better understand disease and find more cures. The World Wide Web and personal computers were just beginning to become available to the public. At that same time, the National Science Foundation invested in a program at Iowa State University that would become SCIENCE BOUND. The goal: to increase the number of youth that were underrepresented in the sciences – Black, Latino/a, and Native American – who pursue degrees in science, technology, engineering and mathematics.

Achieving SCIENCE BOUND's goal is still critical. Now, more than ever, we must understand, appreciate and integrate the innovation and creativity that springs from the diversity of thought in ALL people groups.

What discoveries will we talk about 20 years from now? Young people, will you be the one to find the plant that ends world hunger? A cure for pancreatic cancer? SCIENCE BOUND is preparing you to develop solutions to the world's most pressing problems.

As we celebrate 20 years, let's keep looking towards the day when SCIENCE BOUND no longer needs to exist: a day when diversity of mind is valued by all. Until then, embrace the challenge!



Dr. Connie Hargrave
Director



SB Teachers Committed to Making Opportunities

◆ Steven Benson and Gerald Joseph are veterans of SCIENCE BOUND. After 17 years, Benson, a teacher at North High School, and Joseph (19 years), a teacher at Callanan Middle School, have SB teacher seniority. At the invitation of instructors at their respective schools, the two jumped into the program and have continued ever since.

“I first got involved with SCIENCE BOUND because I enjoyed working with activities outside the normal time,” said Benson, who now acts as the teacher and site coordinator. SB allowed Benson to add activities to his curriculum and adapt items to better fit his classes. For Joseph, the program was originally a way to build relationships with other students and

work with the university.

Both Benson and Joseph believe that if they set high expectations, students will work hard to succeed. “SCIENCE BOUND is like coaching, but instead of athletes, I coach students academically,” said Benson.

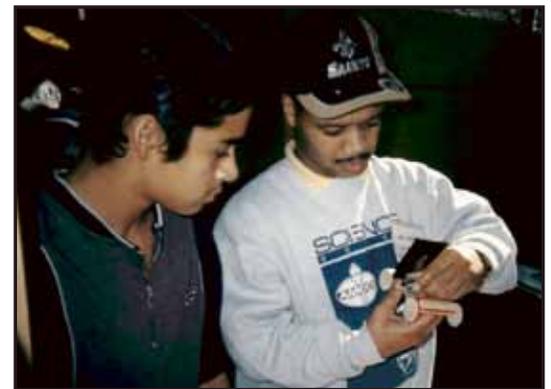
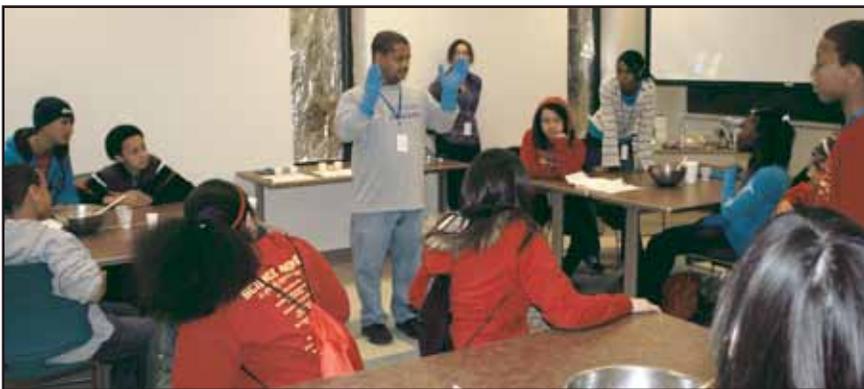
As to why the two have remained with the program for so long, the answer is simple: because of SB’s impact on their students. Joseph told a story about going to a graduation party of a SB student and taking a picture with former students. “To hear these students talk about their next step in life is rewarding. You cannot put a price on that,” said Joseph.

“SCIENCE BOUND is making an impact,” Joseph continued. “Keep doing what you’re doing.” ◆



Above (Top): Steve Benson receives recognition for his years of service with the program from Connie Hargrave, director. (Bottom): Benson with then-SB high school student, Charles Stewart (see pages 6 & 7).

Below (Left): Gerald Joseph, with SB students, led activities with 8th graders on February 26. (Right): Joseph helping students with research in the 1990s.



“SCIENCE BOUND is making an impact.
Keep doing what you’re doing.” - Gerald Joseph

SCIENCE BOUND
2011 Graduates

SB SENIORS CLASS OF 2011



Agapito Aguilar
Lincoln High School



Celina Carr
Roosevelt High School



Anna Castillo
Lincoln High School



Walberto Corvera
East High School



Tia Fisher
North High School



Mary Becky Gomez
North High School



Amanda Ingoli
North High School



Jennifer Juarez
Lincoln High School



O. Eleanor Kemdirim
East High School



Cole Lopez
North High School



Bryan Marroquin
Roosevelt High School



L. Alex McGarity Jr.
Roosevelt High School



Kathryn McGregor
North High School



Niibari Menegbo
North High School



David Mwirichia
Hoover High School



Yvette Ortega
East High School



Nailah Roberts
Roosevelt High School



Alma Salas
East High School



Jessica Sandoval
Hoover High School



Chelcie Scott
East High School



Irma Tello
North High School



Alexis Townsley
North High School



Romina Vidal
Lincoln High School



Devin Zepeda
North High School

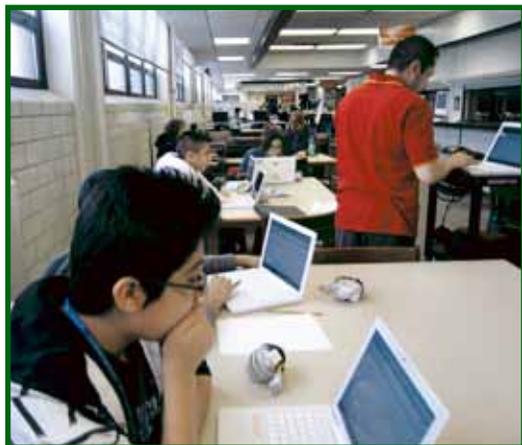
Look for details
on the 2011
SCIENCE BOUND
Honors Banquet in
the next issue of
SCIENCE
BOUND News!

SCIENCE BOUND Shadow Day

More than 50 SB students attended Shadow Day at Iowa State on Friday, February 11. The day included taking tours, talking with college students, and a presentation by different fraternities and sororities on campus (below).



SCIENCE BOUND Writing Workshop

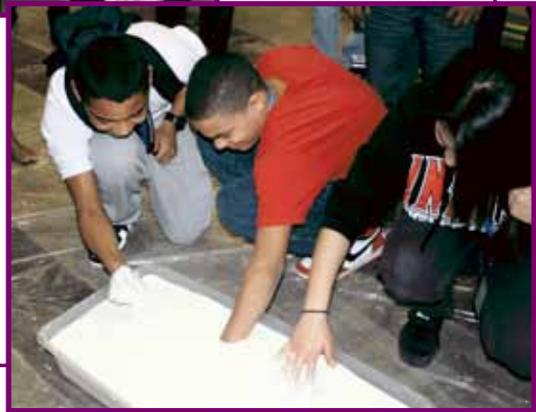


SB 8th grade students participated in an essay writing workshop on Saturday, Feb. 26. Completing a well-constructed essay that reflects on the benefits of participating in Science Bound, as well as what the student can give to the program, is a requirement for continuation.

SB Saturday



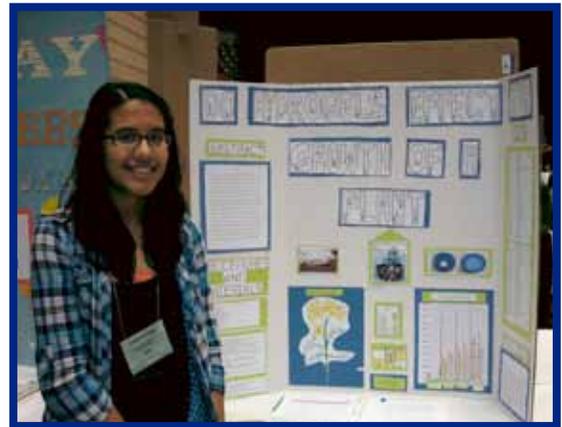
Hands-on science experiences are what SB Saturdays are all about! Students investigated bacteria (left), materials (top) and oobleck (right) in February.



SCIENCE BOUND at VEISHEA

A beetle race was among the day's activities at this year's VEISHEA celebration. VEISHEA is one of Iowa State University's oldest traditions and one of the largest student-run festivals in the world. The word VEISHEA (pronounced "VEE-sha") stands for:

- Veterinary Medicine
- Industrial Science
- Engineering
- Home Economics



Valeria (Brody Middle School, Des Moines) placed 5th in the Biological Sciences, 8th grade division, at the State of Iowa Science and Technology Fair held April 1 and 2 at Hilton Coliseum.

State Science Fair

Encouragement, Balance Keys to Success

◆ Encourage the young people in your life to take advantage of opportunities, create an environment that demands academic achievement, and allows them to pursue interests that lead to a balanced life. This was some of the advice to parents from Charles Stewart, Jr., and his parents during a meeting on Friday, March 4, in Des Moines.

Stewart was invited to return as part of SCIENCE BOUND's 20th anniversary celebration. Stewart, SB's first graduate, earned a degree in agricultural biochemistry from Iowa State in 2000. While at ISU, he participated in the George Washington Carver Internship program and served as national president of the Society for Minorities in Agriculture, Natural Resources and Related Sciences.

Stewart went on to earn a Ph.D. in plant biology from Cornell

University in New York, and is now a researcher at the Salk Institute in San Diego, California.

Stewart and his parents, Charles Sr. and Evelyn, joined a group of nearly 70 parents and students in the North High library. Stewart shared in detail about his interest in science and SB; how he balanced participation in SB with other things he enjoyed (like football); and the importance of putting academics first. Parents also had a chance to ask questions on a variety of topics.

Charles Sr. added that he and his wife had high academic expectations for their children



Charles Stewart Sr., Evelyn and Charles Jr. share their experiences with parents.

(they have two younger daughters), and even gave their own assignments to supplement what their children learned in school.

In addition to addressing parents, Stewart also spoke to undergraduates at Iowa State and provided a public talk at the university (*see article on page 7*). ◆

Parent Connection Out-of-School Learning

◆ Can't do calculus? Never took chemistry? You can still provide what your young person needs to succeed!

Parenting experts agree that setting high expectations is the most important thing you can do to help your young person. Here are some tips:

1. Describe, as clearly as you can, the behavior you want to see from your young person. "I want you to raise your math grade."
2. Make sure expectations are both reasonable and achievable. A student who has earned all "C"s is probably not going to make the straight-A honor roll in six weeks, but she/he can make progress.

3. Make sure your young person agrees that the expectation is both reasonable and achievable.

4. Set short-term goals. Help your young person set a goal that both of you know he can achieve. Then set another.

5. Praise effort. If your young person is really trying, let her know you notice—even if she doesn't meet all your expectations.

6. Be willing to reconsider and adjust if the goal seems out of reach. If a goal is not unreasonable and your child is making a serious effort to change, there may be other explanations for why your child is having trouble. Explore this together.

(Copyright 2011. Parent Institute)





Stewart Visits Iowa State

◆ It was the DNA engineer, Ghana volunteer, and salsa dancing scientist featured on a banner in front of Curtiss Hall on Iowa State's campus, in the flesh. Charles Stewart, SCIENCE BOUND's first graduate (2000), recently spoke to parents, SB graduates and the Iowa State community as part of SB's 20th anniversary celebration.

Stewart, who received his Ph.D. in Plant Biology from Cornell University, New York, in 2006, now works for the Salk Institute for Biological Studies in San Diego, California. During his lecture on March 7 at Iowa State, Stewart spoke about his research and gave advice to students.

He researches DNA enzymes, looking at their structures and functions, in hopes that his basic research will help cure disease, fight hunger, and create a greener planet some day. As he reflected on his experiences as a researcher, his advice for today's students was to be curious and creative.

"Curiosity is the essence of science and education," said

Charles Stewart gives a lecture at Iowa State University on March 7.



Stewart. He believes questions are the heart of science, helping to move it forward. Stewart refuted the myth that scientists are not creative. He pointed out that Albert Einstein was both a physicist and great violinist. "Science and creativity go hand in hand," explained Stewart.

Stewart even shared a video of his salsa dancing performance, complete with splits at the end. He also shared about his travels to northern Ghana to help with problems caused by a weed that greatly lowers food production. The experience gave him the opportunity to use his creative skills to connect basic plant biology to real world problems.

"Curiosity is so important for making a life," said Stewart. "Let it nurture your science." ◆

STEWART'S ADVICE

1. **Work ethic**

Have a strong work ethic and work efficiently.

2. **Enthusiasm**

Be enthusiastic about any task that you are doing.

3. **Curiosity**

Try new things. Don't be scared to ask questions.

4. **Creativity**

Try to look at things from different perspectives. Let your imagination wander.

5. **Integrity**

Be honest with yourself and with others. Be yourself and don't play down to other people's perceptions.

6. **Commitment to Excellence**

Don't accept mediocrity. Set high standards for yourself...regardless of what others are doing.

7. **Don't be scared to make mistakes**

Make the best decisions you can, if you make a mistake then learn from it and do better next time.

8. **laugh and enjoy**

Don't forget to take time to laugh and relax. Sometimes the greatest insight and moments of creativity come when you are not working.

9. **Teamwork**

Learn to work with and communicate with others. Your fellow students, teachers and mentors can help you avoid obvious mistakes and stimulate new ideas. Find people will help you be your best. Let go of people who are not helping you.

10. **Attitude**

Having a positive attitude will help you overcome any obstacle and remain humble during great success.

SCIENCE BOUND IOWA STATE UNIVERSITY

SCIENCE BOUND is Iowa State University's premier pre-college educational program to increase the number of ethnically diverse lowans who earn degrees in agriculture, science, technology, engineering and mathematics. SCIENCE BOUND works with middle and high schools in Des Moines, Denison and Marshalltown, Iowa.

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FUNDING FROM:

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in recycling

Catalyst Chicago Trip

SB Students See Success: USHLI trip to Chicago

◆ Six students from the Des Moines SCIENCE BOUND Catalyst leadership program attended the United States Hispanic Leadership Institute in Chicago with ISU mentors in February.

“The conference allowed our students to interact with prominent business leaders and administrators from institutions around the nation,” said David Romero, SB student programs coordinator. The conference gave SB students the opportunity to hear about individuals that overcame obstacles to achieve success. Students were even able to meet former NASA astronaut Dr. Jose Hernandez, the first Mexican to travel into space.

SB students had an opportunity to see beyond their current position and understand how to

be successful. “We wanted them to understand that anything worth doing in life will require work and sustained effort,” said Romero.

The conference challenged SB students to be responsible, stay on task, and interact with other students, professors, and professionals. Students even learned lessons on etiquette dining.

Romero hopes an outcome of the conference for these students will be their ability to tell their stories. “I want our Catalyst students to tell their



journeys to a science, technology, engineering or math degree,” said Romero. “Our students have so much to offer and their stories of persistence can be an inspiration to others around the nation.” ◆