



SBAZ STEM Initiative Student Summit

Saturday, December 6, 2014 - 9:00 a.m. to 4:00 p.m.

- | | | |
|-------------------------|---|---|
| 9:00 a.m. -9:55 a.m. | Welcome/Introductions and Day of Agenda <ul style="list-style-type: none">○ Pre Survey Assessment | |
| 10:00 a.m. - 10:55 a.m. | Workshop Session I <ul style="list-style-type: none">○ Engineering- Red Group○ Entrepreneurship- Blue Group○ Insurance- Yellow Group○ Goal Setting- Green Group | Room 48
Cyber Café Room
Cyber Café Lobby
Room 43 |
| 11:00-11:55 a.m. | Workshop Session II <ul style="list-style-type: none">○ Engineering- Green Group○ Entrepreneurship- Red Group○ Insurance- Blue Group○ Goal Setting- Yellow Group | Room 48
Cyber Café Room
Cyber Café Lobby
Room 43 |
| 12:00-12:55 p.m. | Lunch- provided w/ Guest Speakers STEM Panel | |
| 1:00-1:55 p.m. | Workshop Session III <ul style="list-style-type: none">○ Engineering- Yellow Group○ Entrepreneurship- Green Group○ Insurance- Red Group○ Goal Setting- Blue Group | Room 48
Cyber Café Room
Cyber Café Lobby
Room 43 |
| 2:00-2:55 p.m. | Workshop Session IV <ul style="list-style-type: none">○ Engineering-Blue Group○ Entrepreneurship- Yellow Group○ Insurance- Green Group○ Goal Setting- Red Group | Room 48
Cyber Café Room
Cyber Café Lobby
Room 43 |
| 3:00-4:00 p. m. | Closing Session/Drawings <ul style="list-style-type: none">○ Post Survey Assessment | |

THE UNIVERSITY OF ARIZONA

National Society of Black Engineers

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Percentage Nights

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UA NSBE

Bimonthly Meetings

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ua_nsbe_chapter@email.arizona.edu

"To increase the number of culturally responsible black engineers who excel academically, succeed professionally, and positively impact the community."



STEM INTATIVE STUDENT SUMMIT

ENGINEERING FACILIATOR- TYRONE BENSON



Tyrone Benson, PhD is a Senior Quality and Reliability Engineer with Intel Corporation. Over the past 18 years, Dr. Benson has held both technical and managerial positions in Intel's assemble technology, circuit design, and corporate quality groups. Dr. Benson is also a STEM Literacy Advocate and has shared his excitement for STEM careers with students all over the Valley. He is part of a group at Intel Corporation called Start with STEM that wants students and parents to give STEM careers another look. He is also one of the founders of REAP (Real Engagement through Active Philanthropy) which was founded to create a gateway to philanthropy in the Black community. Dr. Benson earned his BS EE at the Georgia Institute of Technology and his PhD EE at the University of Michigan.

INSURANCE FACILIATOR – ROBERT E. BRANSCOMB



Robert E. Branscomb II, owner of the Branscomb Agency with American Family Insurance has over 25 years of business management experience with Fortune 500 organizations. He has also been active on a national level as the VP of Strategic Planning for a men's health initiative to provide health screening African American men in barbershops. Robert also volunteers, mentors, and is active with his fraternity. He earned his Bachelors in Arts in Journalism from Idaho State University.

ENTREPRENEURSHIP FACILIATOR- Tiffani Davis



Tiffani Davis believes she is purposed to enlighten those she encounters by educating, empowering and encouraging others to tap into their inherent abilities they possess. This belief led Tiffani to seek to gain experience in various educational environments across the country. Tiffani has spent time in South Carolina public schools, Washington DC public schools, and in the Arizona public school system, serving in many capacities from classroom teacher, to director of programming, to the implementation and managing grant based education programs in under resourced communities. The common thread Tiffani found was, “our children are carrying much more to school with them than the backpacks on their backs”. This motivated Tiffani to accept the challenge of helping to unpack those bags. In doing so, Tiffani established, The Davis Connection Consultants which is a consultant firm offering a mired of education based services to the private and public sector.

GOAL SETTING FACILIATOR-- Tamika Lamb, PhD



Tamika decided to become an educator to fill the void of minority faculty in higher education and be a role model for minority students who rarely see people of color in academia. She is a published author, actor, poet, and has over 10 years of experience working with schools and businesses in the areas of teaching, training, curriculum design, motivational speaking, personal, and professional development.

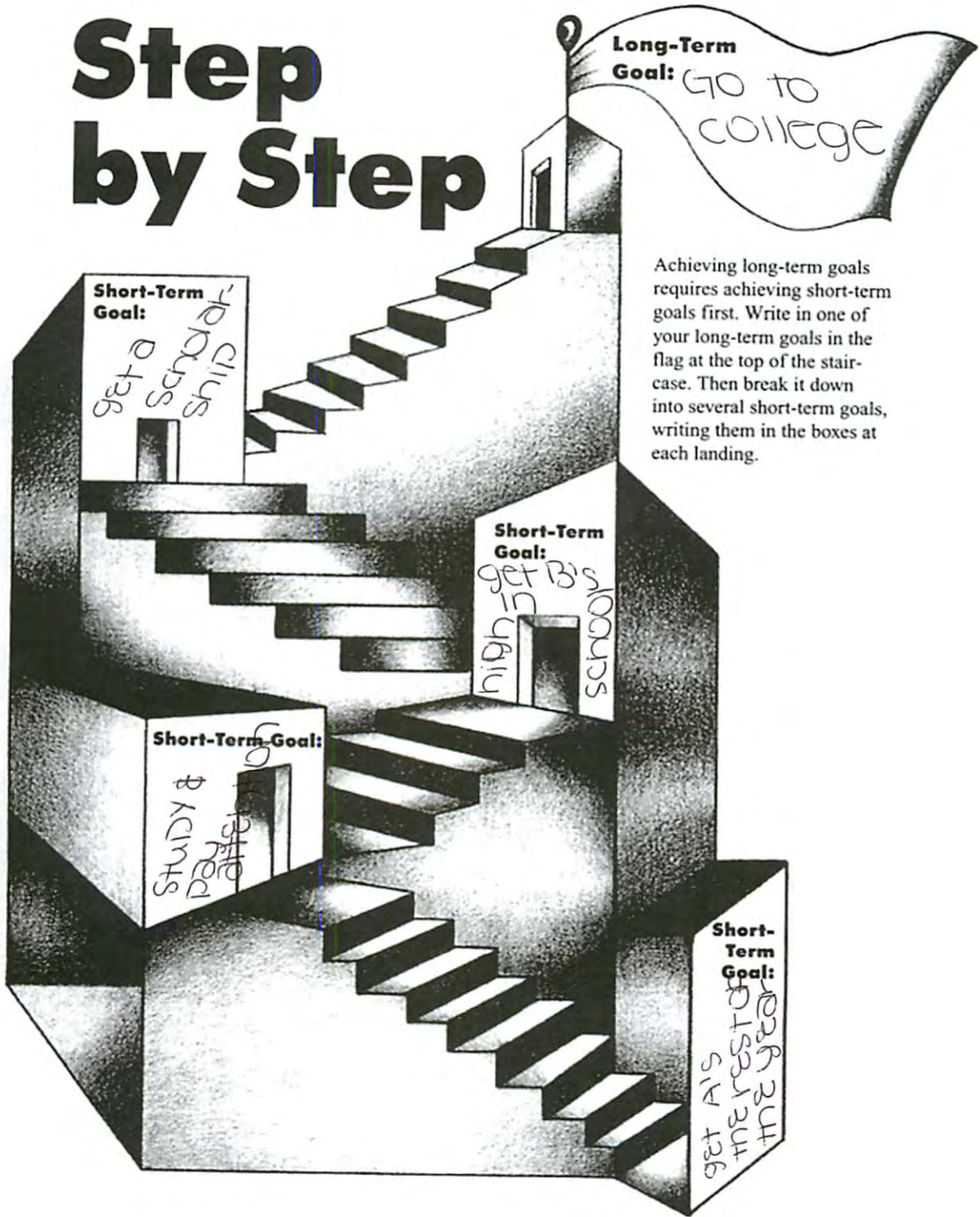
To further her goal of integrating arts education into schools and communities, Tamika started her own business called *Savvy Pen* in 2009. *Savvy Pen* is a program development company that produces social justice events, curriculum, and multicultural training for educators.

Tamika has a PhD in Higher Education, a Master’s in Business Administration, and a Bachelor of Arts in Communication. The focus of her research is based on developing curriculum that incorporates learning styles, diversity, and humanistic principles that will incite a hunger for learning and produce lifelong learners.



Long-Term Goal Setting Activity

Step by Step



Achieving long-term goals requires achieving short-term goals first. Write in one of your long-term goals in the flag at the top of the staircase. Then break it down into several short-term goals, writing them in the boxes at each landing.

Michael Jordan on Goal Setting

The famous basketball player Michael Jordan wrote the following about goal setting in his book, *I Can't Accept Not Trying: Michael Jordan on the Pursuit of Excellence*

I approach everything step by step....I had always set short-term goals. As I look back, each one of the steps or successes led to the next one. When I got cut from the varsity team as a sophomore in high school, I learned something. I knew I never wanted to feel that bad again....So I set a goal of becoming a starter on the varsity. That's what I focused on all summer. When I worked on my game, that's what I thought about.

When it happened, I set another goal, a reasonable, manageable goal that I could realistically achieve if I worked hard enough....I guess I approached it with the end in mind.

I knew exactly where I wanted to go, and I focused on getting there. As I reached those goals, they built on one another. I gained a little confidence every time I came through.



Laney High School Varsity Team



University of North Carolina

...If [your goal is to become a doctor]...and you're getting Cs in biology then the first thing you have to do is get Bs in biology and then As. You have to perfect the first step and then move on to chemistry or physics.

Take those small steps. Otherwise you're opening yourself up to all kinds of frustration. Where would your confidence come from if the only measure of success was becoming a doctor? If you tried as hard as you could and didn't become a doctor, would that mean your whole life was a failure? Of course not.



Chicago Bulls

All those steps are like pieces of a puzzle. They all come together to form a picture....Not everyone is going to be the greatest....But you can still be considered a success....Step by step, I can't see any other way of accomplishing anything.



Winning first Championship
with the Bulls



Being inducted into the
Hall of Fame

I Can't Accept Not Trying: Michael Jordan on the Pursuit of Excellence is published by Harper San Francisco, a division of Harper Collins Publishers (ISBN 0-06-25119)



Defining Your Goals

By picking and choosing the most important goals out of all things you wish to accomplish in a given period of time, you avoid getting so bogged down in goals that you can't accomplish any of them. To help you select the right goals to focus on, jot down a list of everything you want to accomplish in your lifetime. Remember the goal can be personal, professional, social, financial, or spiritual! Check the box that most closely reflection the timeframe in which you would like to accomplish the goal. **Put a star next to the (3) goals you consider the most important!**

Goals	Short Term	This Year	Next Year	Within 5 Years	Within Lifetime

Now look through your list. Do these goals truly reflect your needs and values, rather than those of your loved ones or lofty ideas you read about or saw on television? If so, then you may need to re-evaluate those goals. **Remember**, the science of goal setting is about choosing and focusing on goals that are important to you and where you want to go in life!

Name _____ Date _____

What Will the Future Bring?

Directions: Answer each of the following questions about your future.

What Do You Want to Achieve *Five* Years from Now?

High school diploma? _____

Part-time job? _____ Doing what? _____

Full-time job? _____ Doing what? _____

Have your own apartment? _____ Where? _____

Own a used car? _____ Paying for a new car? _____

Accepted into college? _____ College choice? _____

A one-week vacation in _____

A longer trip to _____

What Do You Want to Achieve *Fifteen* Years from Now?

College degree? _____ From _____ Major _____

Master's degree? _____ From _____ Major _____

Full-time job? _____ Occupation _____

Own your home? _____ Location _____

Salary range:

\$10,000–\$20,000 _____	Married? _____
\$21,000–\$40,000 _____	Children? _____
\$50,000–\$75,000 _____	How many? _____
\$? _____	

Two-week vacation each year _____ One-month trip to (location) _____

Own new car (no payments) _____

Help in the community? _____ How? _____

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UA National Society of Black Engineers Wins Robotics Contest

Jill Goetz • 07/09/2014 - 15:32

Team's ingenious use of bicycle dynamo light principle improves gas pipeline inspection robots.

College students often have several months to prepare for national competitions. The UA chapter of the National Society of Black Engineers, or NSBE, had only two -- and the team went on to win the 2014 NSBE Undergraduate Technical Research Competition in March at the NSBE 40th Annual Convention in Nashville, Tenn.

UA beat two teams from the University of California, Merced, in the first such contest hosted by the Pacific Gas & Electric Co./NSBE Network. The winning team earned \$2,000 and invaluable exposure to industry leaders.

The challenge: Improve inspection of natural gas pipelines, above and below ground.

UA's team of five women and three men conducted research, wrote a technical research paper, and prepared an oral presentation for a panel of PG&E judges. Criteria included technical foundation, field knowledge, comprehensiveness, feasibility, and literature review.

Robots in Pipelines

Utility operators use many technologies to inspect the inside of their pipelines. The most sophisticated are battery-operated robotic crawlers. The robots, which travel along the pipeline, are equipped with sensors that transmit data to off-site information centers. The UA team's competition entry promises to increase the distance robotic tools travel and improve the quality of data transmitted.

Contacts

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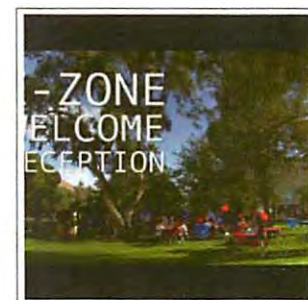
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Welcome To The E Zone

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The students' idea for a self-powering mechanism for the tools was based on the principle by which dynamos on bicycle wheels power bicycle lights. The dynamo system could recharge the robot's batteries without utility workers having to enter pipelines. It could also power additional sensors on the crawlers, such as high-definition cameras, for higher-quality data.



Maryam Abdul-Wahid (left), electrical engineering; Jerri-Lynn Kincade, biomedical engineering; and Iesha Batts (right), chemical engineering, present the UA team's winning project at NSBE's 40th Annual Convention in Nashville, Tenn.

But the team took its task a step further. Not only could its power source expand the robot's range and enhance data transmission and quality, it could also help operators precisely locate the tool and any anomalies they detected, such as cracks or corrosion.

Drawing from geometry and math and led by NSBE chapter program chair Moses Wangusi, a materials science and engineering student, the team developed a geolocation system using specially designed wheels attached to the tools. The system relied on odometry rather than GPS, which does not always work with underground pipelines.

"I thought it was quite ingenious of the students to develop a method that not only improved long-distance telecommunications, but pinpointed the robotic tool's precise location as they traveled along the pipeline," said the team's mentor, Wolfgang Fink, UA associate professor of electrical and computer engineering and Edward and Maria Keonjian Endowed Chair. NSBE chapter members sought out Fink, who now serves as their 2014-2015 faculty adviser, because of his expertise in robotic space exploration and computer-optimized design, and his reputation for being a highly engaging professor.

"Dr. Fink helped us understand PG&E's current methods and approaches to pipeline inspection," said NSBE chapter president Maryam Abdul-Wahid, an electrical engineering student in the College's accelerated master's program.

Presenting at the conference for the team were Abdul-Wahid, along with former NSBE chapter president Iesha Batts, a chemical engineering major, and chapter vice-president Jerri-Lynn Kincade, a biomedical engineering student.

"I am so grateful to Dr. Fink for his guidance. He showed us his research papers to help us in writing our own, and coached us in practicing our presentation," said Kincade, who is working this summer in the UA's highly competitive clinical immersion program in biomedical engineering.

Going Above and Beyond

Getting off to a late start on the project after winter break, the UA team toiled largely after hours and on weekends and devoted spring break to putting finishing touches on its technical paper and presentation. Their extra effort did not go unnoticed among competition judges.

"The UA students approached the problem from a fresh perspective, and they were well prepared to justify their position," said Ben Wu, senior gas engineer at PG&E and a competition judge. "They also made considerations of cost and ease of use, which are critical to real-life deployment of any technology."

Working on the project also reinforced future plans for students like Ty'Dria Wright White, NSBE chapter treasurer and chemical engineering student.

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"This competition solidified my interest in the energy field," she said. "My main goal is to work for an energy company and monitor pipelines to make sure they are functioning properly and not releasing contaminants into the environment."

The all-undergraduate team plans to submit the winning paper to a peer-reviewed journal later this summer.

About NSBE

With more than 30,000 members ranging from pre-college students to professional engineers, NSBE aims to attract and retain black engineering students, develop leadership skills, and increase the number of successful black engineers who can make positive contributions to their communities.



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