

Robotics Inspired Science Education (RISE)

Robotics inspired Science Education

RISE 2011

engineering careers in science & technology



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Founder's & Board of Directors Letter!

We are pleased to share with you the extraordinary results of the inaugural Robotics Inspired Science Education (RiSE 2011) workshop.

The mission of Ghana Robotics Academy Foundation (GRAF) is to design accessible and innovative programs that will excite and motivate young Ghanaians to pursue careers in science, technology and engineering, build self-confidence, knowledge and life skills. RiSE introduces students to the excitement and experience of solving real world problems by applying, science, technology, engineering and math skills. The inaugural RiSE 2011 workshops were held at Tamale, Accra and Takoradi, it was a celebration of Science, Technology and Teamwork.

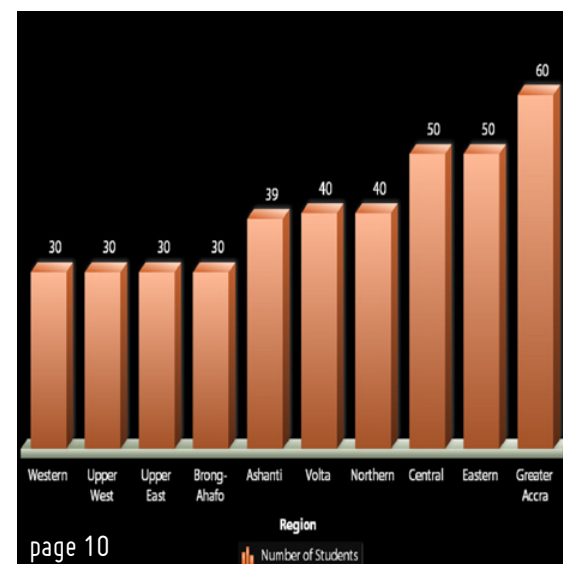
RiSE 2011 workshop had close to 400 students from all 10 regions of the country. The diversity of the participants was remarkable and each student brought different experiences, interest, and ambitions. In addition, each student demonstrated talents they didn't know they had. The student demographics for RiSE 2011 reflected the breadth of our culture, 52% female and 48% male. As you will see in the pages that follow, inspiring stories from individuals and teams on the positive impact of RiSE on student interest in science, technology, engineering and math.

We would like to congratulate team members on an exceptional RiSE 2011 and extend our gratitude to our generous partners, sponsors, contributors, and dedicated volunteers. RiSE 2011 could not achieve a powerful impact without your tremendous support.

It's been said the real secret to success is sustaining it ... and that's what we intend to do in 2012. Thanks for being part of our efforts in helping young minds discover their own potential and intellectual talents to help Ghana's technology workforce.

Regards

Dr Ashitey Trebi-Ollenu, Founder and GRAF Board of Directors



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ROBOTICS INSPIRED SCIENCE EDUCATION (RISE 2011) WORKSHOP
Regional Workshops for High School Science Clubs

Tamale Secondary School Tamale Oct. 3rd to Oct. 4th	Ghana - India Kofi Annan Centre of Excellence in ICT Accra Oct. 6th to Oct. 7th	Ghana Secondary Technical School Takoradi Oct. 10th to Oct. 11th
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RISE & SHINE

Mission: "... inspire, unlock creativity, innovation and passion for science and technology for young Ghanaians ..." **Dr. Ashitey Trebi-Ollennu**

DR ASHITEY TREBI-OLLENNU founded the Ghana Robotics Academy Foundation (GRAF). The mission of GRAF is to design accessible and innovative programs that will excite and motivate young Ghanaians to pursue careers in science, technology and engineering, build self-confidence, knowledge and life skills. Dr Ashitey Trebi-Ollennu conceived the Robotic Inspired Science Education (RiSE) workshop.

RiSE introduces students to the excitement and experience of solving real world problems by

applying, science, technology, engineering and math skills. Using LEGO Mindstorms technology, students work alongside professional engineers to design, build and program robots to solve real world problems. RiSE is about transforming both the perception and reality of the science, technology, engineering and math education for young Ghanaians.

The key to RiSE's success is connecting science theory with practice and hands-on learning experience and exposing students to professional engineers who mentor teams.

ABOVE
Photos from RiSE 2011 workshops in Accra and Tamale.

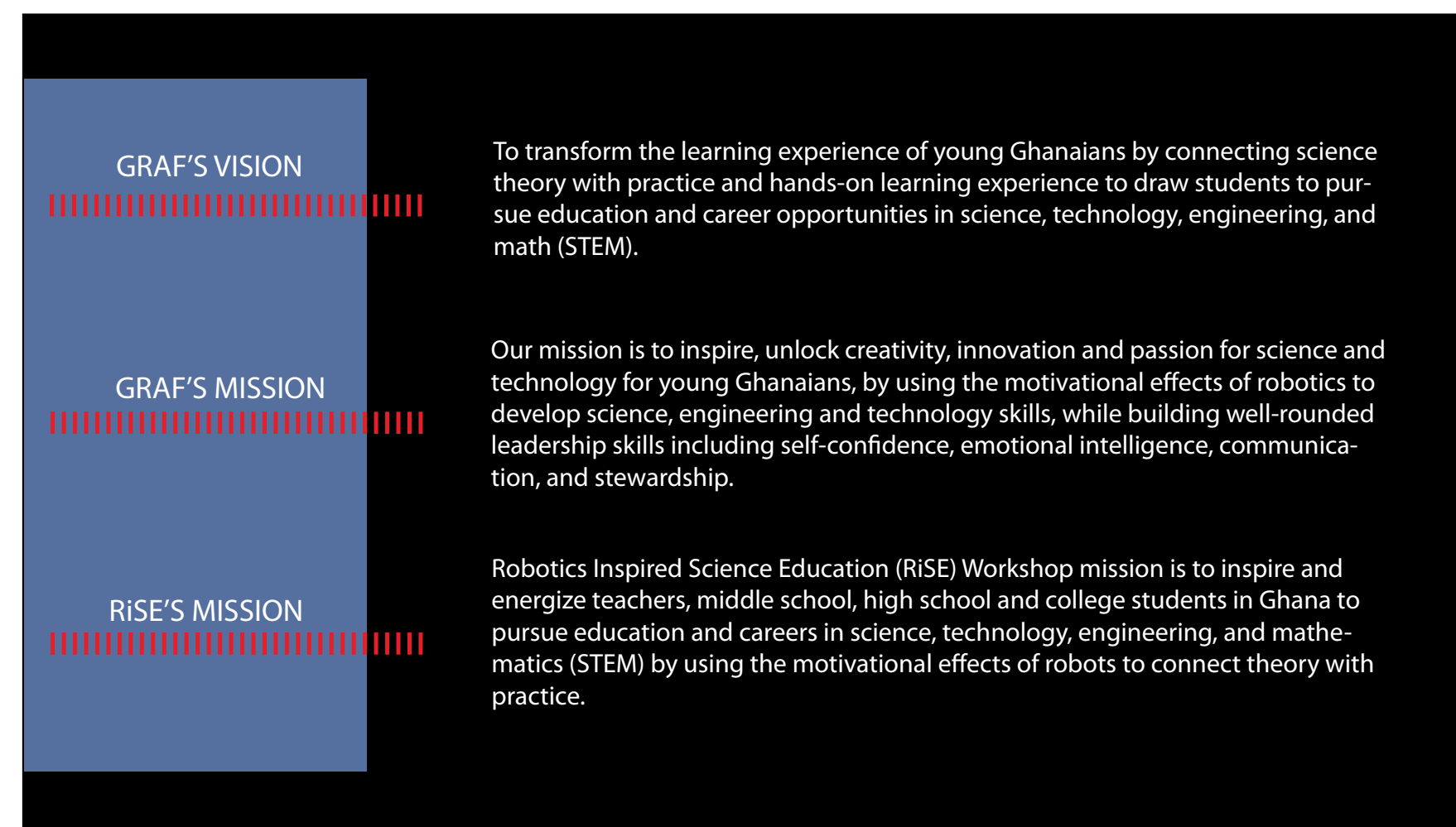
U.S Ambassador to Ghana Donald Teitelbaum noted, "In an era when Ghana's economy is expanding rapidly, Ghanaian students will be well-served to engage in science, technology, engineering and math activities such as those offered by robotics. Nearly every sector in Ghana's economy could benefit from expertise acquired from application and development of robotics — from medicine to agriculture, textiles to oil production and mining."

WHAT IS RISE?

It has always been a challenge to explain RiSE to potential partners (sponsors) or anyone and how it differs from the ubiquitous science fairs and science innovation camps for students across Africa. We kept repeating the phrase "You've got to see it." The inaugural RiSE 2011 workshops did not disappoint. The atmosphere at these workshops had all the electricity of the Ghana Black Stars world cup campaign in South Africa. The joy, tension, nail biting moments, cheers, frustration and ultimate thrill of unimaginable intellectual accomplishments by each participant. The inaugural RiSE 2011 workshops were held at

Tamale, Accra and Takoradi, it was a celebration of Science, Technology and Teamwork. The success of RiSE 2011 is best seen on the faces and heard in the cheering voices of the hundreds of students celebrating science, technology and teamwork at three of RiSE events across Ghana.

We were awed by the ingenuity of the designs and strategies that the students presented to solve real world problems posed to them. Although team competitions are at the heart of RiSE workshops, RiSE is not about wins and losses. RiSE is about inspiring minds, igniting passion for science and technology, and celebrating intellectual achievement. ■





RiSE 2011

OVERVIEW

ABOVE

Photos from RiSE 2011 workshops in Accra and Tamale

RIGHT

Photo from RiSE 2011 Tamale workshop

RISE 2011 COMMENCED in Tamale from the 3rd to 4th of October at the Tamale Secondary School, with thirteen senior high schools from the Brong Ahafo, Northern, Upper East and Upper West regions participating.

The second workshop was held at Kofi Annan ICT Centre in Accra with thirteen schools from the Greater Accra, Eastern and Volta regions from the 6th to 7th of October. The final workshop was held at Ghana Secondary Technical School in Takoradi with twelve senior high schools from Western, Central and Ashanti regions from the 10th to 11th of October 2011.

Dr. Ashitey Trebi-Ollennu starts the RiSE workshop with an interactive introduction to building and programming robots using the LEGO Mindstorms NXT Robotics System. Students practice construction and programming with the NXT intelligent brick with servo motors, touch sensor, light sensor and ultrasonic sensor. In groups, students build robots and program them with a computer to move, react, and make sounds in order to solve real life problems with increasing complexity over the period of instruction. This practical element allows an early insight into the real world of science, engineering, augments student motivation, and enables students to acquire soft skills early.

The practical course complements traditional theoretical lectures by enabling:

- A practical application of classroom curriculum
- Inspires students by showing them that they have talents
- Requires teamwork, leadership and problem solving skills
- Fosters creativity, critical thinking, and innovation
- Career-molding experience, students learn skills that aid in future job placement.

The second day of the workshop focuses on team competition that brings out the competitiveness of life with the fun of celebrating intellectual achievement. The teams work in a co-operative and supportive environment in two distinct challenges. ►

AUTONOMOUS RESCUE CHALLENGE

The RiSE 2011 Autonomous Rescue Challenge used the Australia RoboCup Junior Rescue course. The competition mirrors a real life-threatening situation where “a victim” is stuck in a mine tunnel. With the clock ticking, the robots compete by following a winding line on a field course to find the victim - artificial intelligence at its best! On the way the robot will encounter short cut opportunities that will challenge the most adroit programmer. After the robot finds the victim in the tunnel the robot pushes “the victim” to a green safe area. The team with the fast average time over three rounds wins the competition.

AUTONOMOUS MAZE CHALLENGE

The RiSE 2011 Autonomous Maze Challenge teams were given a blueprint of a maze with exact dimensions few hours before the challenge. With the clock ticking, the robot must navigate the maze without human intervention, using a touch sensor or ultrasonic sensor or combination of both touch sensor and ultrasonic sensor. The team with the fastest average time over three rounds wins the competition.

The Danish Ambassador to Ghana Carsten Nilau Pedersen sees the RiSE “as an important element for the development of the high tech industrial sector in Ghana, and a significant input to the advancement of Ghana’s research capabilities.”



RISE 2011 EQUIPEM

During the workshop a school team of ten students and two teachers is allocated two laptops and two LEGO® MINDSTORMS® Education Base Sets. Each school which participated directly or was represented by a US Peace Corp Volunteer received the equipment listed in the table below.



RISE 2011 INSTRUCTOR



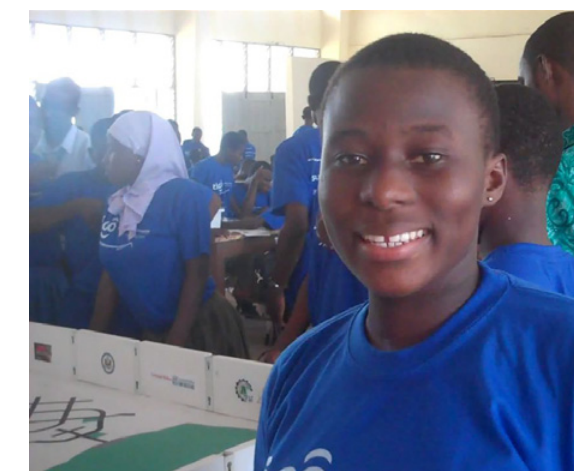
Dr. Ashitey Trebi-Ollenu, is a technical group leader and senior robotics engineer in the Mobility and Manipulation group, Mobility and Robotic Systems section at NASA Jet Propulsion Laboratory, California Institute of Technology, where he has been since 1999. Dr. Ashitey Trebi-Ollenu was born in Accra, Ghana and attended Garrison Primary School in Burma Camp, Accra. He attended Ghana Secondary Technical School in Takoradi for his secondary education up to sixth form. He received his Ph.D. degree in control systems from Royal Military College of Science, Cranfield University, United Kingdom in 1996 and B.Eng. (Hons) from Queen Mary College, University of London, United Kingdom in 1991. He was a research scholar at Institute of Complex Engineered Systems, Carnegie Mellon University from 1997 to 1999. His research interest includes planetary rovers, manipulation, distributed mobile robotics, sensor networks, reconfigurable robots, mobile robot architectures, and man-machine interaction and has published widely in these areas (more than 85 publications, including book chapters, journal and conference publications). Dr. Trebi-Ollenu has worked on three NASA Mars missions. He was a Rover Driver for Spirit and Opportunity rovers for four years. Dr. Trebi-Ollenu received the 2008 NASA Exceptional Engineering Achievement Medal for his contributions to the Mars Exploration Rover mission, 2007 Outstanding Engineer Award from IEEE Region 6, 2007 Sir Monty Finniston Achievement Medal from Institution of Engineering and Technology, U.K., and 2010 Specialist Silver Award from the Royal Aeronautical Society, U.K. Dr. Trebi-Ollenu is also a recipient of a dozen NASA Group Achievement Awards and over half a dozen major NASA Space Act Awards. Dr. Trebi-Ollenu is a Fellow of the Institution of Engineering and Technology, U. K., a Fellow of the Royal Aeronautical Society, U.K. and a Senior Member of the IEEE.

RISE 2011 AWARDS

CATEGORY	RANKING	AWARD(S) RECEIVED
Championship Award	1st	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF) 12 x Gold Medals (Sponsored by GRAF) 12 x Tigo Mobile Phones (Sponsored by Tigo) Tigo Souvenirs (Sponsored by Tigo) 1 x Robotics Engineering Vol. 1 Introduction to Mobile Robotics Classroom Site License, DVD (Sponsored by Carnegie Mellon Engineering (CIT)) 1 x Vernier NXT Temperature Sensor (Sponsored by Vernier) 1 x Vernier BTA NXT (Sponsored by Vernier) 1 x Vernier STEM Book (Sponsored by Vernier) 1 x Vernier STEM2 Book (Sponsored by Vernier)
	2nd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF) 1 x Robotics Engineering Vol. 1 Introduction to Mobile Robotics Classroom Site License, DVD Tigo Souvenirs
	3rd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF) 1 x Robotics Engineering Vol. 1 Introduction to Mobile Robotics Classroom Site License, DVD Tigo Souvenirs
Autonomous Maze Navigation Challenge	1st	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
	2nd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
	3rd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
Autonomous Rescue Challenge	1st	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
	2nd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
	3rd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
Programming Award	1st	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF) 1 x NXT Video Trainer 2.0 Site License, DVD (Sponsored by Carnegie Mellon Engineering (CIT))
	2nd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF) 1 x NXT Video Trainer 2.0 Site License, DVD (Sponsored by Carnegie Mellon Engineering (CIT))
	3rd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF) 1 x NXT Video Trainer 2.0 Site License, DVD (Sponsored by Carnegie Mellon Engineering (CIT))
Best Robot Design	1st	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
	2nd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
	3rd	<ul style="list-style-type: none"> Trophy (Sponsored by GRAF)
Team Spirit Award	N/A	<ul style="list-style-type: none"> Books (Sponsored by U.S. Embassy Ghana)
Perseverance Award	N/A	<ul style="list-style-type: none"> Books (Sponsored by U.S. Embassy Ghana)
Most Committed/Dedicated Head Teacher Award	N/A	<ul style="list-style-type: none"> Books (Sponsored by U.S. Embassy Ghana)

PARTICIPATING SCHOOLS RECIEVED EQUIPMENT LISTED BELOW

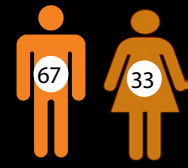
QUANTITY	EQUIPMENT	TOTAL NO.	SPONSORS OF EQUIPMENT
2	LEGO® MINDSTORMS® Education Base Set	92	<ul style="list-style-type: none"> United States Government
1	LEGO® MINDSTORMS® Education NXT Software v.2.0	46	<ul style="list-style-type: none"> Embassy of Denmark, International Development Cooperation (DANIDA)
1	NXT-G Site License	46	<ul style="list-style-type: none"> Lego Education
1	NXT Temperature Sensor	46	<ul style="list-style-type: none"> Millicom Ghana Limited (Tigo mobile network)
1	Laptop Computer HP 625-Athlon II P340 2.2 GHz- 15.6" TFT	46	



PARTICIPANTS

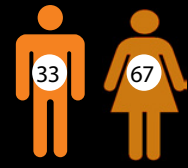
DEMOGRAPHICS

- 1. St Francis Xavier (Boys)
- 2. T.I. Ahmaidiya (Co.Ed)
- 3. Wa Secondary (Co.Ed)



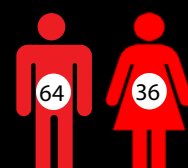
UPPER WEST

- 1. Bechem Presby Sec. (Co.Ed)
- 2. Notre Damme Girls' Sec.
- 3. Sunyani Sec. (Co. Ed).



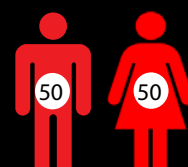
BRONG-AHAFO

- 1. Prempeh College, (Boys)
- 2. Opoku-Ware, Kumasi (Boys)
- 3. Yaa Asantewaa Girls'
- 4. Konongo-Odumasi (Co. Ed)



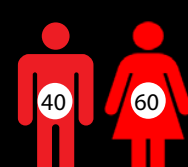
ASHANTI

- 1. GSTS (Boys)
- 2. Archbishop Porter Girls'
- 3. Tarkwa Sec. (Co. Ed)



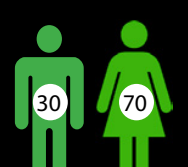
WESTERN

- 1. Wesley Girls High
- 2. Aggrey Memorial (Co. Ed)
- 3. St Augustine College (Boys)
- 4. Holy Child, (Girls)
- 5. Apam S.H. (Co. Ed.)



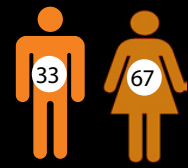
CENTRAL

- 1. Aburi Girls'
- 2. St Roses Sec. (Girls)
- 3. Okuapeman Sec. (Co. Ed)
- 4. Ofori Panyin (Co. Ed)
- 5. Ghana S.H. (Co.Ed)



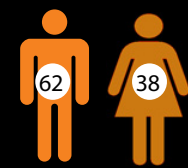
EASTERN

- 1. BolgaGirls Sec. (Girls)
- 2. Navrongo Sec. (Co. Ed)
- 3. Bawku Sec. (Co. Ed)



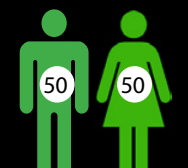
UPPER EAST

- 1. Tamale Sec.(Co. Ed)
- 2. Yendi Sec.(Co.Ed)
- 3. Islamic Sec. (Co. Ed)
- 4. St Charles, Sec.(Boys)



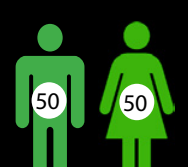
NORTHERN

- 1. Bishop Herman (Boys)
- 2. Keta Sec. (Co. Ed)
- 3. OLA Sec., (Girls)
- 4. Mawuli Sec. (Co. Ed)

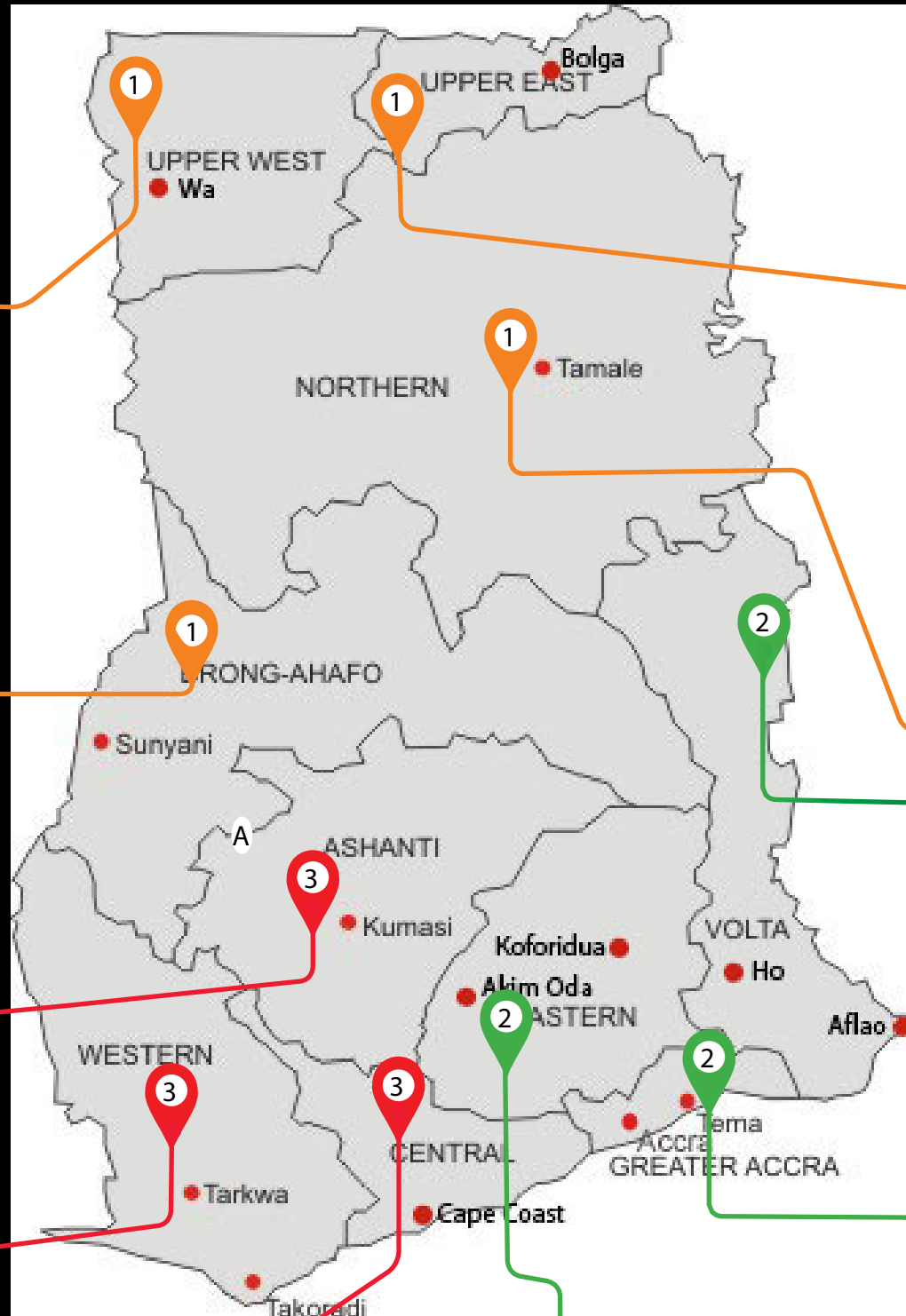


VOLTA

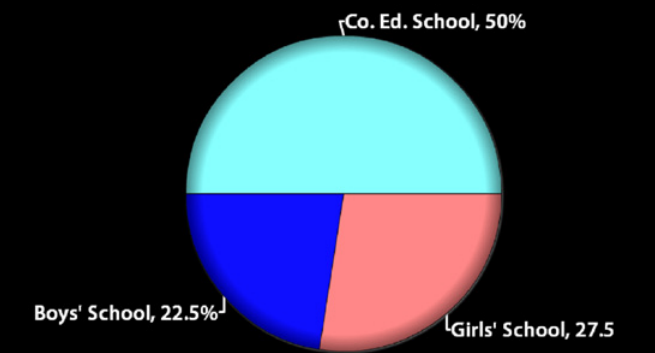
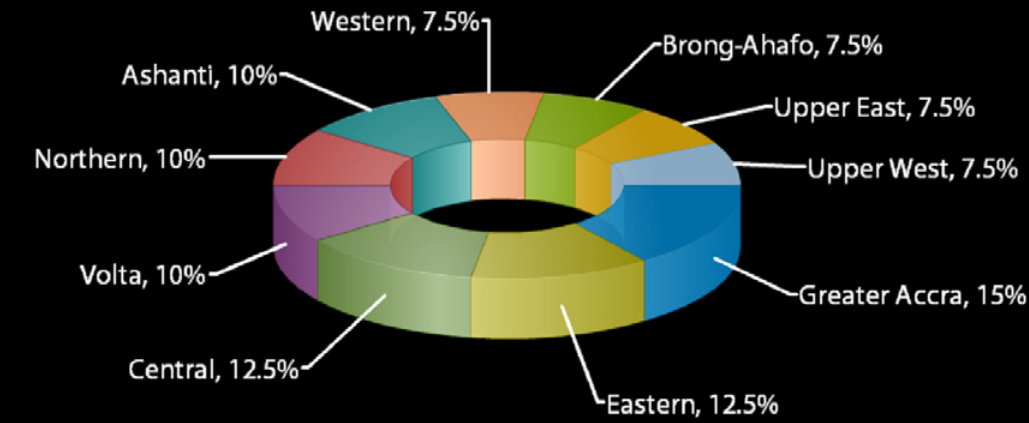
- 1. Presbyterian Boys'
- 2. Labone Sec. (Co. Ed)
- 3. Accra Girls'
- 4. St Mary's (Girls)
- 5. Accra Academy (Boys)
- 6. Accra High (Co. Ed.)



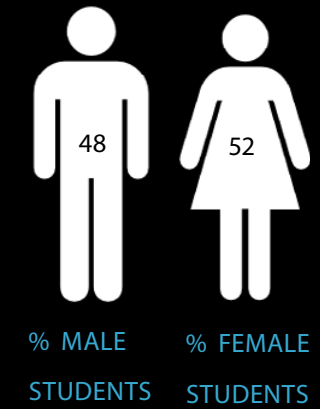
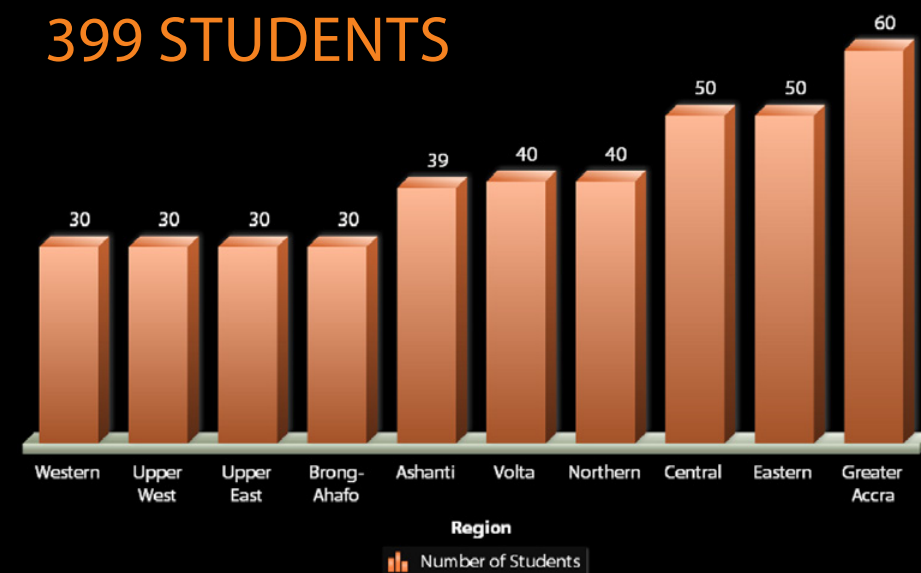
GREATER ACCRA



1 NORTHERN ZONE 1 2 SOUTHEASTERN ZONE 2 3 SOUTHWESTERN ZONE 3

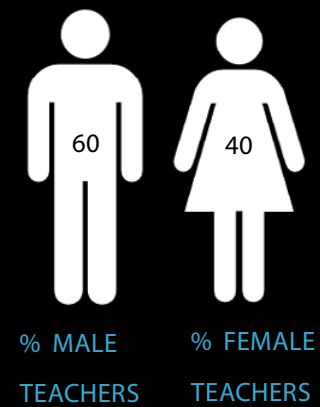
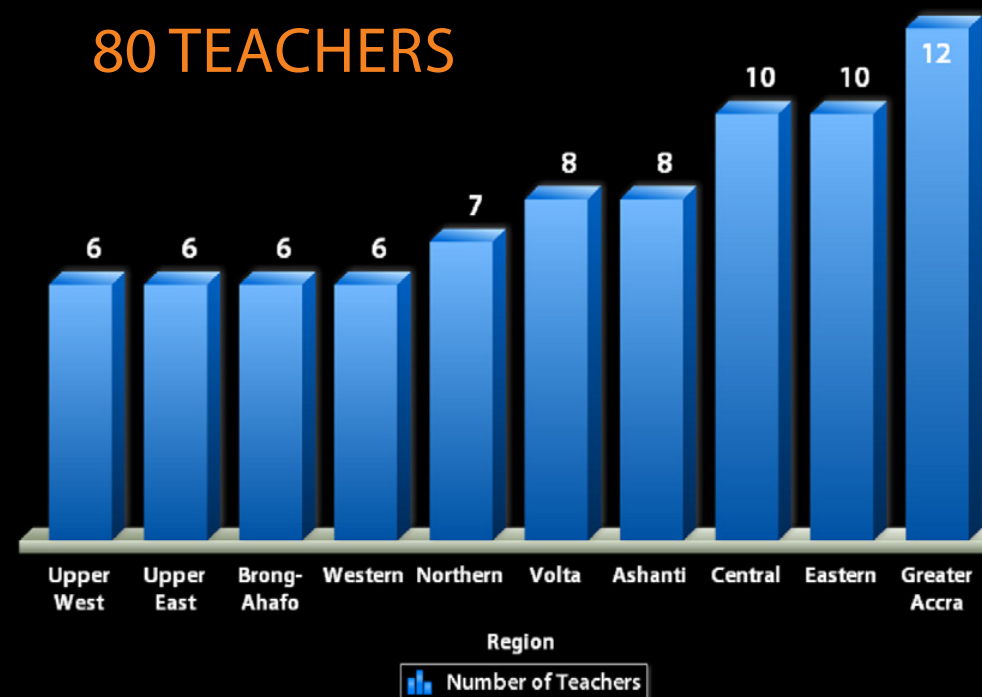


399 STUDENTS



NUMBER OF STUDENTS BY REGION

80 TEACHERS



NUMBER OF TEACHERS BY REGION

US PEACE CORPS (PC) Participants

NO. OF PC	SCHOOL	REGION	GENDER
1	Ullo SHS	Upper West	Male
1	Asare Bediako SHS	Ashanti	Female
1	Donkorkrom Agriculture	Eastern	Female
1	Salvation Army SHS	Eastern	Male
1	St. Dominic's Technical	Eastern	Female
1	Abor SHS	Volta	Male

Hon. Sherry Ayitey, Minister for Environment, Science and Technology, "I am really delighted to be associated with this innovative series of robotics science education workshops ... It is also the priority of the government that we should support science education especially for girls in deprived communities."



Mawuli SHS presented with award from Lars Friis-Jensen, Counsellor, Embassy of Denmark, DANIDA



Bishop Herman SHS presented with award from Mrs. Georgina Quaisie, Head Of Science Education Unit, Ministry of Education



St. Mary's SHS presented with award from Dorothy Gordon, Director-General, Ghana-India Kofi Annan Centre Of Excellence in ICT



Bishop Herman SHS presented with award from Samuel Allotey, Wing Cdr Rtd (Director of HR & Services, Ghana GridCo Limited), GRAF Founding Member



From left to right, Samuel Allotey, Wing Cdr Rtd, Anne Kathrine Top Platz (Dinish Embassy), Aaron Fishman (U.S. Embassy), Lars Friis-Jensen (Danish Embassy) and Julie Funuta-Toy (U.S. Charge d'Affair)



St. Augustine's SHS presented with award from U.S. Ambassador to Ghana Donald Teitelbaum



St. Augustine's SHS presented with award from Tigo Western Regional Manager



From left to right, Julie Funuta-Toy (U.S. Charge d'Affair), Mahama Ayariga (Deputy Minister, Ministry of Education), Hon. Sherry Ayitey (Minister for Environment, Science and Technology), Danish Ambassador to Ghana Carsten Nilaus Pedersen and Mr. William Tevie (Director-General, National Information Technology Agency)



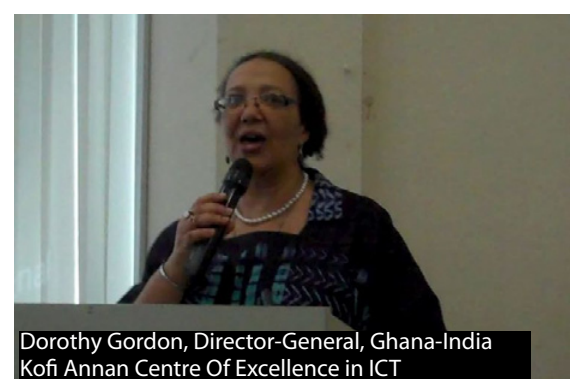
Danish Ambassador to Ghana Carsten Nilaus Pedersen



Navrongo SHS presented with award from Dr. Ashitey Trebi-Ollennu, GRAF Founder



Hon. Sherry Ayitey, Minister for Environment, Science and Technology








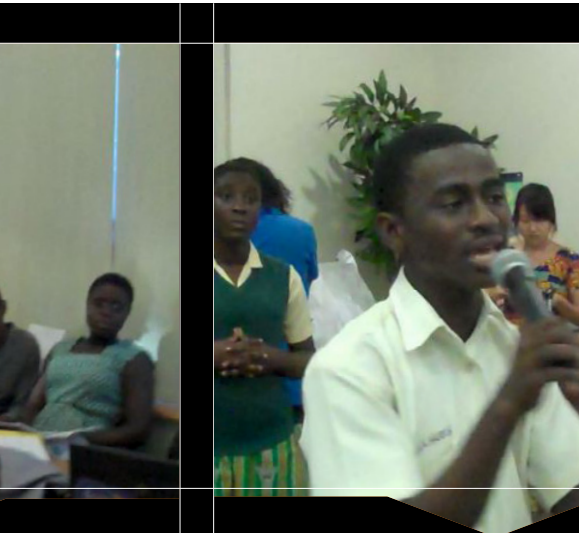
Dorothy Gordon, Director-General, Ghana-India Kofi Annan Centre Of Excellence in ICT

NORTHERN ZONE 1		
CATEGORY	RANKING	SCHOOL
Championship Award	1st	■ St Francis Xavier
	2nd	■ Bechem Presbyterian
	3rd	■ Sunyani SHS
Autonomous Maze Navigation Challenge	1st	■ St Francis Xavier
	2nd	■ Navrongo SHS
	3rd	■ Bolgatanga Girls'
Autonomous Rescue Challenge	1st	■ Bechem Presbyterian
	2nd	■ St Francis Xavier
	3rd	■ St Charles'
Programming Award	1st	■ St Francis Xavier
	2nd	■ Bechem Presbyterian
	3rd	■ Sunyani SHS
Best Robot Design	1st	■ Sunyani SHS
	2nd	■ Islamic SHS
	3rd	■ Notre Damme Girls'
Team Spirit Award	N/A	■ Tamale SHS ■ Yendi SHS ■ T. I. Ahmadiya ■ Bawku SHS ■ Wa SHS
	N/A	■ Notre Damme Girls'
	N/A	■ Notre Damme Girls'
	N/A	■ Notre Damme Girls'
	N/A	■ Notre Damme Girls'

SOUTHEASTERN ZONE 2		
CATEGORY	RANKING	SCHOOL
Championship Award	1st	■ Bishop Herman
	2nd	■ Presbyterian Boys' Legon
	3rd	■ St Mary's Kole Bu
Autonomous Maze Navigation Challenge	1st	■ Accra High SHS
	2nd	■ Mawuli SHS
	3rd	■ Accra Academy
Autonomous Rescue Challenge	1st	■ St Mary's Kole Bu
	2nd	■ Bishop Herman
	3rd	■ Presbyterian Boys' Legon
Programming Award	1st	■ Bishop Herman
	2nd	■ Presbyterian Boys' Legon
	3rd	■ Aburi Girls'
Best Robot Design	1st	■ Okuapeman SHS
	2nd	■ Ofori Panin SHS
	3rd	■ OLA Girls'
Team Spirit Award	N/A	■ Ghana National SHS ■ Labone SHS ■ Keta SHS ■ St Rose's
	N/A	■ Accra Girls'
	N/A	■ Accra Girls'
	N/A	■ Accra Girls'
	N/A	■ Accra Girls'

SOUTHWESTERN ZONE 3		
CATEGORY	RANKING	SCHOOL
Championship Award	1st	■ St Augustine's
	2nd	■ Archbishop Porter Girls'
	3rd	■ Wesley Girls'
Autonomous Maze Navigation Challenge	1st	■ Ghana Secondary Technical School (GSTS)
	2nd	■ St Augustine's
	3rd	■ Holy Child
Autonomous Rescue Challenge	1st	■ Archbishop Porter Girls'
	2nd	■ St Augustine's
	3rd	■ Wesley Girls'




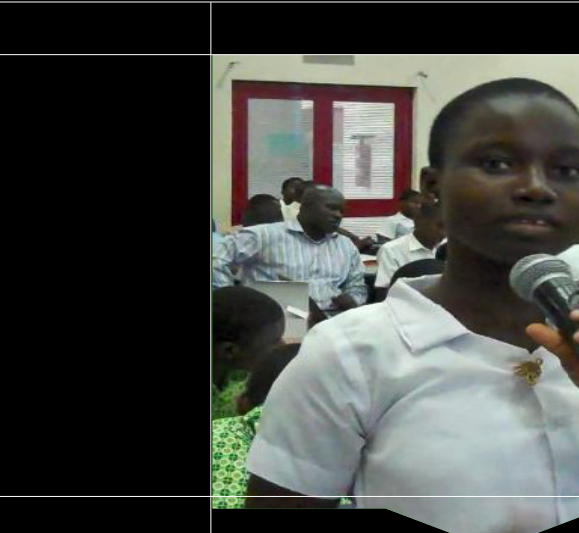


SOUTHWESTERN ZONE 3		
CATEGORY	RANKING	SCHOOL
Programming Award	1st	■ St Augustine's
	2nd	■ Prempeh College
	3rd	■ Konongo-Odumasi SHS
Best Robot Design	1st	■ Wesley Girls'
	2nd	■ Holy Child
	3rd	■ Yaa Asantewaa Girls'
Team Spirit Award	N/A	■ Opoku-Ware SHS ■ Tarkwa SHS ■ Apam SHS ■ Aggrey Memorial
	N/A	■ Konongo-Odumasi SHS
	N/A	■ Konongo-Odumasi SHS

					
<p>"... When we came here I did not know that we were that creative and team work was also enhanced and I will like to encourage all of us here to keep it up." Erica Abubakar (F3), Accra High</p>	<p>"... some of us never thought we will ever do such a thing before but since we came here we have been granted an opportunity we never dreamed that we could one day create a robot we thought robots were created by excuse me to say magic men but later realized that each and everyone here has a potential and has the ability to create one (robot) ..." Emmanuel Mensah (F3), Bishop Herman</p>	<p>"OK, when we came we thought we could do things on our own but we have learnt that through teamwork we can do things better and we also thought robots can be made by those Einstein's and things but not knowing in Ghana to we have intellectuals who can also build robots and stuff ..." Sherihane Aryeetey (F3), St Mary's</p>	<p>"...We all got to know that all those complex looking robots ... the way they seem so complex and sophisticated are not really what they are. ... I realized that we students in high schools really have a lot of potential ... today I was so surprise about what my friends were doing ... what people were trying out, today was really awesome ... it just unleash the potential in us today ... I believe we can show better in next year, thank you." Roland Wonkyi (F3), Presby Boys' Legon</p>	<p>"... at first I was really scared getting near a computer and educating myself ... but when we came here (RISE 2011) I have been able to get near this laptop fix the robots and try to manipulator them and I think it has helped me a lot. From now onwards I will be getting near a computer to improve upon my skills." Margaret Fiagbenu (F3), OLA SHS</p>	<p>"... me personally I did think that those robotics stuff only existed in China, Japan and the rest ... I have realized that ... with addition of a little basic science we can do very unimaginable things. Thank you." Odartey Lamptey (F4), Accra Academy</p>

IMPACT >>>>

>>>> Positive impact on student interest in science, technology, engineering and math.

>>>> Inspiring student interest and participation in science & technology.

					
<p>"Today I have realized that each one of us here has hidden potentials and talents that we never knew we had ... Ghanaians we have talents we only need a way to bring it out and thanks to this program (RISE) we are bringing it out. I am very glad I came here today because I have learnt a lot, thank you." Philip Amoako (F2), Labone</p>	<p>"... First of all I thought robots were complex machines and things that we cannot fix or even think about ... now I know that it does basic things, simple things ... I am very proud to be one of those to participate in this program. Thank you very much." Miriam Bortey (F3), Keta SHS</p>	<p>"We want to thank Ghana Robotics Academy Foundation for this great program and also we learnt a lot with all the tedious work we have done today having to encourage ourselves to persevere harder and teamwork which was our key to success." Frank Manu (F3), Prempeh College</p>	<p>"...I will like to say that today's program (RISE) has improved upon our creativity and innovation ..." Christiana Odaamea (F3), Okuapeman</p>	<p>"... when we were in school we were all just competing with each other but look at how we have done this, with great minds coming together to produce such wonderful things. So today I have really learnt about teamwork ..." Michael Opare (F3), Opoku-Ware</p>	<p>"Today I learnt that I can do a lot of things through teamwork and patience and perseverance and also I learnt that there is a lot more out there than the world I am in. Thank you." Alberta Bow (F2), Wesley Girls</p>



HIGHLIGHTS OF MEDIA ENGAGEMENT

MEDIA	COVERAGE
TV Television Coverage	<ul style="list-style-type: none"> ■ GTV – September 29, 2011, Breakfast show. 30 minute live interview with Dr. Trebi-Ollenu received several live on-air laudatory calls. ■ TV 3 - September 29, 2011 Noon time news program ■ GTV – Science and Technology Noon Program ■ GTV – October 4, 2011. Dr. Trebi-Ollenu and Aaron Fishman interviewed from Tamale. ■ TV3 – October 7, 2011. Aaron Fishman interviewed with several student participants from Accra. ■ GTV – October 11, 2011. Captured Ambassador Teitelbaum’s remarks and interviewed Dr. Trebi-Ollenu and Aaron Fishman from Takoradi.
Radio Coverage	<ul style="list-style-type: none"> ■ Unique Radio – September 29, 2011 GBC state-owned radio. Dr. Trebi-Ollenu interviewed and received calls. ■ CitiFM – September 29, 2011, Morning Show with Bernard Avle. Popular independent talk radio. ■ Joy FM – September 30, 2011, Super Morning Show carried live interview with Dr. Trebi-Ollenu ■ BBC World News Service, aired October 7, 2011 Dr. Trebi-Ollenu and student interviewed ■ Savannah Radio – October 5, 2011. Dr. Trebi-Ollenu and Aaron Fishman. ■ GBC’s Ghana Today – October 6, 2011, rebroadcast of Savannah Radio interview ■ CitiFM – October 7, 2011. Aaron Fishman interviewed along with several students in Accra. ■ Diamond Radio – October 12, 2011. Jeanne Clark, Information Officer, spoke on live talk show with an energetic student and teacher RISE participants from the Senior Islamic High School in Tamale. ■ Beach FM – October 10, 2011. Live broadcast of interview with Aaron Fishman during 2 pm news hour. ■ Asida FM - October 10, 2011. Briefed by Aaron Fishman in Takoradi. ■ Yes FM – October 10, 2011. Briefed by Aaron Fishman in Takoradi.
Newspaper and Online Coverage	<ul style="list-style-type: none"> ■ Daily Searchlight, p. 7, October 4, 2011 ■ Spectator, P. 28, October 15, 2011, focused on the winning team of the Accra competition. ■ Ghana News Agency -Northern Zone Schools introduced to Robotics Science ■ Business and Financial Times, October 11, 2011 interviewed Dr. Trebi-Ollenu in Takoradi. ■ Daily Guide, October 11, 2011 attended the Takoradi competition. ■ The Inquirer, October 11, 2011 attended the Takoradi competition. ■ U.S. State Department Blog ■ ModernGhana.com ■ MyJoyOnline.com ■ GhanaReactiononline ■ GlobalNewsreel ■ AllAfrica.com

STRATEGIC PARTNERS



CHAMPIONSHIP PARTNERS



Dr John Hampshire & Dr Anne Murray



Dr Ashitey Trebi-Ollenu & Family

DR YAW OKRAKU-YIRENKYI



Dr Yaw Okraku-Yirenkyi has been an indispensable source of RiSE and GRAF leadership and inspiration. As Director of Studies at the Ghana-India Kofi Annan Center of Excellence in ICT he is a devoted educator and technologist and founding board member of GRAF. Dr Yaw Okraku-Yirenkyi is an extraordinary, action-oriented leader who helped select the 40 high schools and organized RiSE 2011. Dr Yaw Okraku-Yirenkyi's tireless and fierce commitment to STEM education in Ghana has made RiSE's vision a powerful reality. As evidenced in the standing ovation he receives at every RiSE 2011 event. Through the work and dedication of Dr Yaw Okraku-Yirenkyi RiSE 2011 has achieved extraordinary results. We will like to extend our sincere appreciation to Dr Yaw Okraku-Yirenkyi for his energy, effort, and example.

MR AARON FISHMAN



Mr. Aaron Fishman Regional Environment, Science, Technology & Health Officer for West & Central Africa at the U.S. Embassy in Ghana was instrumental in raising funds for RiSE 2011. Mr Aaron Fishman contacted Dr. Trebi-Ollenu at the prompting of the US Ambassador to Ghana Donald Teitelbaum. After Dr Trebi-Ollenu shared the concept of RiSE with Mr Fishman he was full of contagious enthusiasm and zeal for RiSE. He tirelessly sorted funds for RiSE 2011 from US State Department and US companies operating in Ghana and beyond. Mr Fishman and his team were successful in securing funding from the US

State Department Innovation fund. Mr Fishman's action-oriented and can do attitude was one of the most impactful things that made RiSE 2011 a reality. We would like to offer our sincere thanks to Mr Fishman. RiSE 2011 could not achieve a powerful impact without your tremendous effort and support.

US EMBASSY, GHANA

- Ambassador Donald Teitelbaum
- Julie Furuta-Toy
- Aaron Fishman
- Patience Charway
- Esi Amenuvor
- Beatrice Budu
- Martin Adams
- Michael Ayensu
- Isaac Ayisi
- Donal Godfrey
- Jeanne Clark
- Traci Mull
- Lord Lamptey
- Ford Attipoe
- Anani Yao Kuwornu
- Zainab Mahama
- Jessie Pappoe Anjuwon
- Ryan Bowles
- Jennifer Jensen
- Samuel Nyantakyi
- Nicholas Sowah
- William Afari
- Kwasi Ampadu-Boateng

GHANA-INDIA KOFI ANNAN CENTRE OF EXCELLENCE IN ICT

- Dr Yaw Okraku-Yirenkyi
- Cliff Osei-Afryie
- Peter Amoah Biney
- George Addo
- Anita Mireku
- Samuel Graham
- Annibert Appiah
- Charles Acquah-Moses
- Joseph Naab
- Joel Naab
- Daniel Amaliba

ROYAL DANISH EMBASSY, GHANA

- Ambassador Carsten Nilas Pedersen
- Lars Friis-Jensen
- Anne Kathrine Top Platz
- Frederick Pappoe

LEGO EDUCATION, DENMARK

- Steen Valentin Lund
- Ann Holm Pedersen
- Majbrit Ølgod

CARNEGIE MELLON ENGINEERING (CIT)

- Prof. Pradeep Khosla
- Prof. Bruce Krogh
- Romaine Botti

TIGO GHANA LTD

- Tuffour Mensa-Bonsu
- Rosy Fynn

ASHESI UNIVERSITY COLLEGE

- Dr. Ayorkor Korsah

CHRISTIAN SERVICE UNIVERSITY

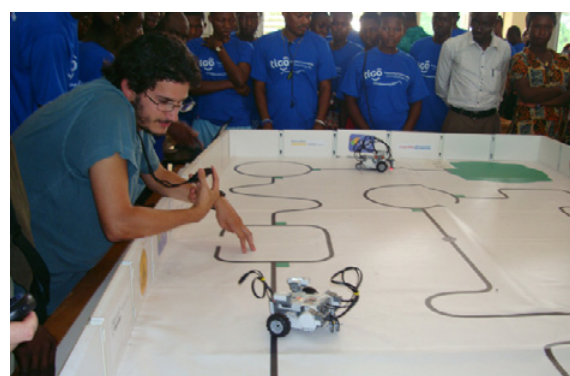
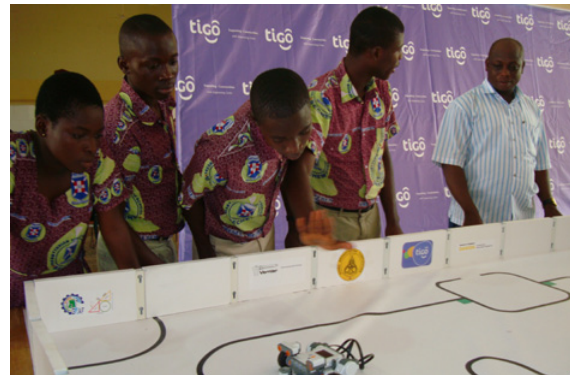
- Linda Amoako

GRAF

- Ushawu Ibrahim, ICT Teacher, Wulensi SHS
- Dr. Ayorkor Korsah, Ashesi University College
- Moses Sam, Forestry Commission
- Andy Koney, YENOK Wood Products Ltd
- Lee Magnone

RiSE 2011

PICTURES





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