

17 year old inventor making bio-medical and robotic history



Easton LaChappelle

EASTON LACHAPPELLE, 17, began working with robotics when he was 14. He lives in Mancos, Colorado, and is challenging the future of prosthetics and tele-robotics. His long-term goal is to create an affordable upper-limb prosthesis that is neural controlled and stronger than a human. He has two 3D printers in his room where he makes all the joints, gears and custom parts needed for a robotic limb. He has been featured in Popular Science and Popular Mechanics magazines. Recently the President of the United States shook hands with the arm as part of the White House Science Fair. He has worked on NASA's Robonaut project at Johnson Space Centre and he placed 2nd in the world in engineering at the 2012 International Science Fair.

Easton LaChappelle's story offers a reminder of the simplest key to success; if you want something badly enough, do the work and find creative ways to achieve your desired outcome. (A good broadband connection helps...)

LaChappelle's mission is to reinvent conventional prostheses. After meeting a young girl with a prosthetic arm and realizing that her parents had to pay \$80,000 for it, he knew something had to change. So LaChappelle focused the desire he's always had to take things apart and put them back together again in a new way.

Living in a small town in Colorado, LaChappelle has had to self-teach himself everything – electronics, coding, how to use a 3-D printer... the list goes on. "This year's graduating class had 23 people. The nearest RadioShack is an hour away," LaChappelle says. But lack of access and the learning curve hasn't stopped him. Neither has the fact that's he's 17 and has little money to buy products. LaChappelle conducts all of his work in his bedroom. "Just the other day, I heated acetone in a mason jar in my room to make the 3D-printed hands look more human," he admitted to an audience of thousands in his recent TEDx talk.

SAIEE PRESIDENT'S INVITATION LECTURE TOUR – EASTON LACHAPPELLE



Easiest route: Take UKZN Gate 3 off Rick Turner Rd (previously Francois Rd). Once through the boom gate, take the first road on the left and continue with it till you get to the end of the road.

Don't miss this presentation RSVP now! Seats are limited



Wed 16 Oct 2013 at 18.00

Durban venue: Lecture Theatre
New Engineering Building
University of KwaZulu-Natal

RSVP: saiee@iafrica.com
(Gill Nortier)

UKZN Westville Campus Unveils SMART GRID Research Centre

THE SMART GRID Research Centre was officially launched at UKZN's Westville campus by Deputy Minister of Public Enterprises Bulelani Magwanishe; Professor Nelson Ijumba Deputy Vice-Chancellor Research and the CEO of Eskom Mr Brian Dames.

The Research Centre will assist in developing the Smart Grid System for South Africa and is the only simulator of its kind in the Southern Hemisphere.

In his address Professor Nelson Ijumba said: 'Eskom's student support and investment in research infrastructure at UKZN gives a new context to corporate social responsibility. It has empowered individuals, capacitated the Institution and benefited the community at large.'

The Smart Grid Research Centre along with the High Voltage Direct Current Centre and the Vibration Research and Testing Centre forms part of the Science and Technol-

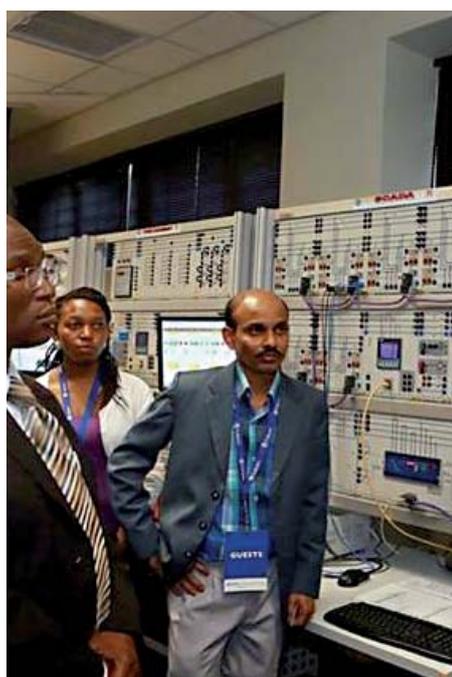
ogy Innovation Park (STIP).

STIP was established as a partnership between UKZN and Eskom to foster research for product advancement and innovation through knowledge partnerships. The Eskom-sponsored Park is located at the University's Westville campus and is a significant development that offers post-graduate students world-class research facilities.

The occasion also marked Eskom's 90th anniversary.



Deputy Minister Public Enterprises Mr Bulelani Magwanishe unveils the commemorative plaque at the Smart Grid Research Centre on the Westville campus. From left: Professor Nelson Ijumba, Deputy Minister of Public Enterprises Bulelani Magwanishe, Deputy Mayor of eThekweni Nomvuso Tshabalala and the CEO of Eskom, Mr Brian Dames.



Deputy Minister, Public Enterprises Mr Bulelani Magwanishe being shown around the Smart Grid Research Centre.



SAIEE 2013 Proposed Programme KZN CENTRE

Date	Presentation / Tutorial / Visit
October	
16/10/13	SAIEE President's Invitation Lecture Tour – Durban Presentation: An exciting talk by Easton LaChappelle, a 17year old inventor making Bio-Medical and Robotic History (<i>see page 1</i>)
Postponed to 23/01/14	Presentation: Introduction to Fibre Optic Communication by Subhash Jagannath
November	
21/11/13	Morning Seminar – 08h00 for 08h30 to aprox 12h00: Surge and Lightning Protection by Tony Rayner * No charge: kindly sponsored by Phoenix Contact South Africa (Pty) Ltd. * Numbers strictly limited to 25 * Booking essential * Venue - Umsinsi Room, Durban Country Club



A rare opportunity to visit SA Agulhas

HENDRIK VAN NIEKERK (Fellow, SAIEE) is a Training Officer on the SA Agulhas. He trains cadets in marine electrical and electronic engineering.

The ship is owned by SAMSA Management and operated by Smit Amandla Marine. The training officers are from SAMTRA, an organisation that specialises in training up cadets to become officers and marine engineers.

Since the SA Agulhas was reassigned, It has visited the Port of Durban and is scheduled to return in the weeks ahead.

On it's next call, KZN SAIEE members will be invited to visit the ship and have access to the following facilities: a lecture room, the workshop area and the engine room.

Please be on standby for this, because as soon as details are confirmed, SAIEE KZN Centre Members will be advised.



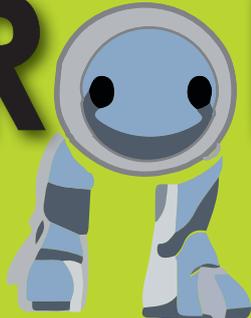
Hendrik van Niekerk (Fellow, SAIEE) a training officer with SAMTRA on the SA Agulhas.

Top and below:

The SA Agulhas was formerly used as an Antarctic research vessel.



RobMech 2013



**30 – 31
October
2013**
Engineering Building
Howard College
DURBAN

The IEEE 6th Robotics and Mechatronics (RobMech) Conference 2013, in association with IEEE Robotics and Automation Society (RAS) and the South African Institution of Electrical Engineers (SAIEE), provides a platform to showcase and gauge the current state of advanced robotics and mechatronics research in South Africa. Research facilities in southern Africa and beyond are invited to present and share their work. The conference is open to all industries, research institutions and hobbyists. The conference brings together researchers, academicians, application engineers, users and policy makers of CAD/CAM, robotics and factory automation.

The conference and subsequent local and international collaboration is critical for the development of a competitive South Africa that can be a major player in the global market. It is important that South Africa makes use of its limited resources, by sharing and

working with local and international partners. Mechatronics, Robotics and Advanced Manufacturing are also a critical technology for the development of South Africa's manufacturing and automation industries.

The IEEE 6th RobMech Conference is presented by the Advanced Robotics and Mechatronics Research Network (ARMRN), and allows the sharing of expensive infrastructure, while contributing to human capital development and collaboration between Academic sectors and industry. ARMRN is made up of representatives from the CSIR, the University of KwaZulu Natal, the Central University of Technology in the Free State, the Nelson Mandela Metropolitan University in the Eastern Cape, the University of Stellenbosch in the Western Cape, and others.

The dates for the conference are the 30 – 31 October 2013. It will be held in

the new Engineering Building at the University of KwaZulu-Natal. The R20 million structure boasts the latest innovations, and is designed to create an enabling environment for the students, while providing a "green" hub for university, industry and community-related activities.

Registration forms for the conference are available at www.robmech.co.za. The registration fee is payable before 7 October 2013 and includes full participation, lunches, refreshments during breaks, afternoon demonstrations and networking cocktails.

The UKZN Mechanical Engineering Open Day displays will also happen on the afternoon of Tuesday 29 October 2013. Delegates are welcome to view the displays during that time. The projects will also be on display for a time period on Wednesday 30 October 2013.

Validation number for the event is SAIEE-1107-V: The event will be awarded 2 CPD credits

Cost involved:

Category Fee		
Delegate Registration IEEE / SAIEE Members	R2 200 R2 000	US\$ 220 for delegates outside of SADC US\$ 200 for delegates outside of SADC
Student Registration – paper presenter	R1 500	US\$ 150 for students outside SADC
Exhibition fee	R5 000	Per stand includes registration for one delegate

For more information, kindly contact the RobMech 2013 Conference Secretariat on the numbers below:

RobMech 2013 Conference Secretariat

UKZN Conferencing Services, Room 119 Innovation Centre, Gate 9 Howard College, Durban 4001

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Fax: +27 (0)31 260 1606

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