Colleagues,

During the month of October – iThemba LABS (iTL) realized a major milestone through the inauguration of the 11-MeV cyclotron. This achievement is a culmination of many years of collaborative efforts between iThemba LABS and NTP (Pty) Ltd, a wholly owned subsidiary of Necsa.

The two institutions have, since 2005, had a cooperation agreement in place for the supply of the radiopharmaceutical, 18F-FDG, to the SA nuclear medicine community with iTL responsible for the Western and Eastern Cape market while NTP covered the Northern regions of the country.

Following the opening of the PET-CT scanner in April 2012 at Tygerberg hospital, the second facility in the Western Cape, it became very urgent for iTL to provide a reliable and regular supply of 18F-FDG. Indeed, the first routine production of this radiopharmaceutical took place on 25th September 2012. This remarkable feat is — once again — testimony to the wealth of talent and commitment by all those (within iTL and outside) who helped in the process. A copy of the press release issued is published later in the newsletter.

It’s the time of the year when we start preparing for the mid-term performance reviews; a time to reflect on what we have accomplished—an opportunity for personal growth and development. Our performance ultimately depend on our willingness to perform, our ability to perform and whether we were allowed to perform. The special awards, which will be presented later this year, has gained traction as a key moment at iThemba LABS. I look forward to acknowledge and reward members of staff who have gone out of their way to ensure that we deliver on our key mandates.

Best regards,

Zeblon VILAKAZI
COMMUNITY INTERACTION ...

The division for Community interaction and Training has been afforded a number of opportunities to impact the bigger organization (and the broader science advancement sector) during the month of October. These interventions include our participation in valedictory ceremonies of various schools, participation in teacher-conferences and staff development sessions, hosting groups for site-visits, coordinating the launch of the 11-MeV cyclotron, our participation in career days, hosting SAASTA’s Astroquiz, and our involvement in the HIP2B2 3M Innovation Challenge in Gauteng.

Learners and staff from Linkside High School in Port Elizabeth visited our facility and were treated to a tour of the research facilities at the Materials Research Department. Carlos Pineda-Vargas took some time out of his busy schedule to interact with the learners. It is clear that we need to grow the capacity within our organization to ensure that we always have energetic individuals (like Carlos and many others who assist us) who are able to interact with visitors. There is a need to showcase the “relevance” of our endeavours; being able to answer the “so-what-question”. We were fortunate to be afforded an opportunity to interact with delegates attending the Executive National Security Programme (ENSP 26/12). This was again another opportunity to think about our contributions to the sustainability and security debates.

The CiT-division is slowly but surely becoming a house-hold name as more and more learners and teachers become aware of our offering. I had the pleasure of interacting with close to 300 teachers attending the Mathematics Solutions Conference at the Cape Teaching and Learning Institute (CTLI) in Kuils River. This interaction resulted in me being invited to interact with learners at Kuils River Primary School. My visit to Kuils River Primary confronted me with the reality that there are many young kids out there who are EAGER to learn; kids with BIG dreams. Why is it that kids are so eager to learn when they are young, but then seem to lose interest as they move to the higher grades? The grade-7 learners were instructed to “dress-for-the-future”, i.e. how they see themselves in many years from now. There were engineers, medical doctors, forensic scientists, pilots, business-people, teachers, and nurses. I had to remind them of the following reality ... “Do you realize that you might be preparing yourself for a job that does NOT yet exist?” Would be interesting to have a debate about how this impacts on the way we teach ... we have to see them not for what they are, but for what they can become (even if we have no idea what that means).

“Treat a man as he is, he will remain so. Treat a man the way he can be and ought to be, and he will become as he can be and should be.” - Goethe

The division, through Ambrose Yaga and Akhona Mali, hosted learners from Dlikidla Primary in Beaufort West and interacted with learners at Kalkfontien Primary in Kuils River. Ambrose and Akhona awakened the learners’ interest in natural science through an interactive science show. The division received requests from members of staff to offer these activities to schools where THEIR kids are enrolled; one such interaction is planned for November.
There was a time in all our lives when learning was fun; a time when we couldn’t get enough of asking questions; trying to out-shine and out-perform. What happened since then? Why is it that learning appears to be the most difficult thing to do—just check how we struggle to get our kids ready for school in the morning! I still remember all the games we played when I was a youngster. Games like “cowboys and crooks”, “kennetjie”, “cat and mouse”, “three cans”, and “hide and seek”. I have come to the realization that these games all taught me valuable life lessons; things like group-work, problem-solving, taking calculated risks, perseverance, and many more.

The Community interaction and Training (CiT) division took some primary school learners on a 3-day adventure in Kommetjie. Akhona Mali, our volunteer, was their chaperone and these are some of his reflections.

We managed to get 54 grade-7 learners from 8 primary schools together on Monday, 1 October, to start our journey to Camp Africa near Kommetjie. The bus-ride there already gave me the sense that I was in for an exciting 3-days. The programme offered included a 10-km walk through the Table Mountain National Park which provided the learners an opportunity to meet some of Africa’s hidden treasures in the “plant kingdom”. What an experience to sit around the camp fire at night and have time to look at the heavens. Tim Attwell, one of the environmental educators used this opportunity to point out some features and structures in the night sky using a laser-pointer.

The adventure course, was probably the “biggest jol”. It was great to share in the personal victories of the kids as they overcame their fear of heights, discovered their own potential and realised the benefit of team-work. I even had a go on the “zip-ride”; hanging on for dear life as the water awaited me with open arms...

It was my first time sleeping in an “electrified tent”. Who would have thought that a tent could offer such superb accommodation! The kids seemed to enjoy every moment of the adventure as well; even sleeping in tents with names like Frog, Baboon and Tortoise!

We need to find ways to harness this energy. Creating environments for kids to be kids; being able to play and develop whilst doing it. What a privilege to be able to see life through the eyes of a 13-year old; enjoying every moment for what it is!

This is what one of the learners had to say:

“I never thought I could walk for 10 km but here I am; I managed even though it was very difficult for me. I will never forget iThemba and this will help me as I want to do science at high school. I have made new friends here and I will miss all of you guys.”

Submitted by Akhona Mali
Sam was born on 25 June 1976 in Klipspruit, Soweto. He started his primary education at Motjodi Primary School and then proceeded to Thamsanqa Secondary where he passed his Matric 1996. In 2007 he joined iThemba LABS and worked as a contract worker until he was appointed permanently in 2008. Sam is a very hardworking person who performs his duties with diligence and perfection and is always willing to help. Sam is engaged to Dikeledi and they are blessed with a son named Relegogile. He enjoys watching soccer, listening to music and performing mechanical duties.

Cebo joined the Accelerator Department as a Junior Accelerator Physicist on 1 November 2012. He completed his Honours in Physics in 2005 at the University of Zululand. He holds a Masters Degree in Physics from the University of Zululand obtained in 2007. The title of his thesis was: Design, Development and Fabrication of a Microwave Proton Ion Source. He is currently pursuing Doctoral studies at the University of Zululand. We welcome Cebo to the NRF family and look forward to his valuable contribution to iThemba LABS.

Adelè joined the Human Resources Division as an Administrative Assistant on 1 November 2012. She completed her high school career at Northlink College in the Western Cape. She is currently pursuing a National Diploma in Human Resource Management at Cape Peninsula University of Technology. She started working as a Receptionist in 2008 and later joined C2M Consult in 2011 as a Human Resource Consultant. We welcome Adelè to the NRF family and we are looking forward to her valuable contribution to iThemba LABS.

Science advancement allows one the opportunity to interact with different communities in an attempt to grow the pool of young people willing and capable of pursuing careers in science-related fields. We are extremely grateful for the partnership with Mr Sam Rametse, the outreach-officer at SKA, who facilitated our visit to the Northern Cape. Read more on page 6...
iThemba LABS to meet demand of cancer diagnostic centres in Western Cape

Press release:
16 October 2012

SOMERSET WEST – iThemba LABS and NTP Radioisotopes (NTP) unveiled a Siemens 11-MeV cyclotron at iThemba LABS in Faure, Somerset West, on 19 October. The cyclotron will produce enough of the radiopharmaceutical 18F-FDG to meet the demand of both cancer diagnostic infrastructure centres in the Western Cape for the next 15 to 20 years.

iThemba LABS, a National Research Facility of the National Research Foundation, together with NTP, a wholly owned subsidiary of the South African Nuclear Energy Corporation (NECSA), completed the installation and commissioning of the cyclotron in September 2012. The first product was produced on 26 September.

One of the two facilities to receive the radiopharmaceutical is the Positron Emission Tomography/Computed Tomography (PET/CT) Centre situated at Tygerberg Hospital. The facility, which was officially opened on 19 April 2012, offers diagnostic infrastructure to patients from Tygerberg, Groote Schuur and Red Cross War Memorial Children’s Hospital. The other facility is the Cape PET/CT Centre situated in the Panorama Medical Centre.

The diagnostic service, which is offered to more than 10 patients per day, relies on the availability of the radiopharmaceutical 18F-FDG, which is used in glucose metabolic studies of the heart, lungs and brain.

The basic principle is that the radiopharmaceutical accumulates in areas where there is an uptake of glucose. The position is then detected through a complicated system which relies on the emission of “light” when the positive electron (positron) emitted by the radiopharmaceutical recombines with an electron.

“We are pleased to be able to assist the medical community and contribute to meeting the needs of patients,” said Dr Gillian Arendse, Manager: Community interaction and Training at iThemba LABS. “The new cyclotron allows for the production of the PET-isotope on a 5-day basis (Monday to Friday), thereby creating the possibility to increase the production of the other radionuclides that rely on the main accelerator.”

Quoting Dr Gro Harlem Brundtland, Director-General at the World Health Organization, Arendse said “The global burden of cancer continues to increase. In the year 2000, 5.3 million men and 4.7 million women developed a malignant tumour and 6.2 million died from the disease. The number of new cases is expected to grow by 50% over the next 20 years to reach 15 million by 2020.”

According to the World Cancer Report, with more than 10 million new cases every year, cancer has become one of the most devastating diseases worldwide. The causes and types of cancer vary in different geographical regions, but in most countries there is hardly a family without a cancer victim. Its impact can be reduced through basic research, advanced diagnosis and improvements in treatment and care.

iThemba LABS is an international leader in the production of accelerator-based radionuclides while NTP is a world renowned market leader in reactor-produced radionuclides. Since 2005, the two institutions have had a cooperation agreement in place for the supply of the radiopharmaceutical 18F-FDG to the South African nuclear medicine community. iThemba LABS supplies 18F-FDG to the Western Cape and Eastern Cape and NTP supplies the Gauteng, Free State and KwaZulu-Natal markets.
ON THE ROAD AGAIN...

It is Sunday, 28 October, at 14h30. Whilst most staff members at iThemba (except for the researchers working on an experiment) are at home enjoying a scrumptious meal, the CIT-division (Ambrose, Akhona, Luchricia and Gillian) are packing the Quantum (a rental from Budget) for their road-trip to the Northern Cape. We are off to interact with learners in the towns of Van Wyksvlei, Carnarvon and Williston. The trip was arranged by Mr Sam Rametse, the outreach officer for SKA.

Armed with Miriam Makeba and Jimmy Dludlu we start our journey; a journey that takes us on the N7 towards Vanrhynsdorp. We reach our final destination (after passing through a number of stop-goes), Carnarvon, at 22h00. The town is quite, not even a shop is open! How accustomed we get to things; spoiled I should say. We take so many things for granted; running water, late-night shopping, access to daily newspapers, and public transport to name but a few. The schools in these towns start at 07h00. This allows them to close earlier; an attempt to counter the hot summer days. Life here seems to be lived at a different pace. Even though people are struggling they seem optimistic; trying to keep busy. Even the birds find ways to keep busy; building elaborate nests along the gravel roads we have to travel to get to these remote areas.

The kids are FANTASTIC! They are eager to learn; asking questions and volunteering answers enthusiastically. The teachers are also very appreciative and eager to get more insight into our offering. Our programme consisted of workshops (basic chemistry and an introduction to astronomy) and an interactive science show. We are extremely fortunate to be able to impact the lives of young people by doing what we love; adding value and offering learning as a fun and engaging activity. Our trip took us along 1 816 km of road (some gravel) and we interacted with 1 040 learners during our 3-day intervention.

There are so many places to visit, and lives that we need to transform. We also had an opportunity to visit KAT-7. What an amazing site after a drive of roughly 80 km on a gravel road! We have so much to celebrate in our country; but there is also a need to make the science accessible to the general public through site visits and interactive talkshops.

We hope to create opportunities for staff and post-graduate students to engage undergraduate students and the general public through public lectures and publications in the monthly newsletter. More on this in issues to come.

CONDOLENCES

Even though we are all aware of the fact that death will eventually come knocking, we are never ready to say good-bye. Our attempts to console and support only provide temporary relieve, as we need to find the courage and strength to deal with the loss in our own way.

Our supply chain manager, Ms Natasja Pietersen, bid a final farewell to her father during the month of October. We hope that the precious memories that you have of him will encourage you to build on his legacy. Our thoughts are with you.

UPCOMING EVENTS

November is MOVEMBER—grow your moustache in support of men’s health!

- TASTE-workshop at Physics Department (UWC)
  14—16 November
- International workshop: Nuclear spectroscopy frontiers at magnetic spectrometers
  19—22 November
- Kruger 2012 (discovery physics at the LHC): 3—7 December
- First SA-USA physics workshop
  11—13 December
- GEANT workshop
  29-31 January 2013

Erratum...

September edition:
Ms Phumza Habongwa is a chemical technologist and not a clinical technologist.