

Introducing iThemba LABS: Subatomic Physics Facility in the Southern Hemisphere.



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iThemba Laboratories for Accelerator Based Science (LABS)

- The **largest** particle accelerator facility in the **Southern Hemisphere** and the only cyclotron facility of its kind on the African continent.
- **Multidisciplinary facility** for fundamental and applied research using accelerated particle beams.
- Operates from sites located in **Cape Town** and **Johannesburg**.



Cape Town



Johannesburg

iThemba LABS: Laboratories for Accelerator Based Science

K8 Injector Cyclotron 2



K8 Injector Cyclotron 1



K200 Separated Sector Cyclotron



K11 Cyclotron

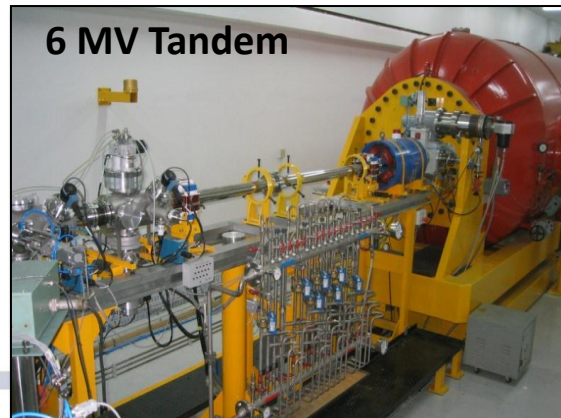


SSC Laboratory: Subatomic Physics and Applications, Nuclear Medicine

3 MV Tandetron



6 MV Tandem



TAMS Laboratory:
Materials Research and AMS

IBA Cyclone 70



SAIF Phase 1

iThemba LABS : Users facility



Cape Town

| | |
|---|---------------------------------|
| | |
| University of the Western Cape | University of Limpopo |
| University of Cape Town | University of Venda |
| University of Stellenbosch | University of Johannesburg |
| Cape Peninsula University of Technology | Sefako Makgatho University |
| University of the Witwatersrand | Tswane University of Technology |
| University of Pretoria | University of the Free State |
| North West University | University of South Africa |
| Fort Hare University | Rhodes University |
| University of Kwazulu Natal | |
| University of Zululand | |
| Nelson Mandela Metropolitan University | |



Gauteng

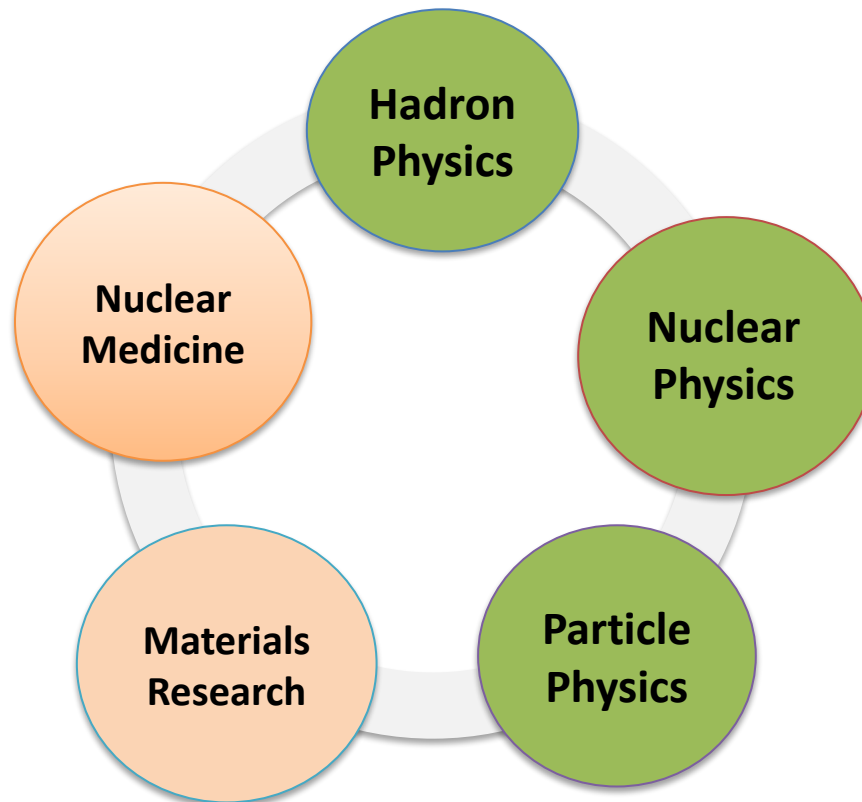
~ **129 staff members**

~ **243 users (90 Students) /year**

| | | | | | | |
|--|------------|------------|------------|------------|------------|------------|
| | (2015) | (2016) | (2017) | (2018) | (2019) | (2020) |
| | 137 | 151 | 173 | 157 | 244 | 243 |

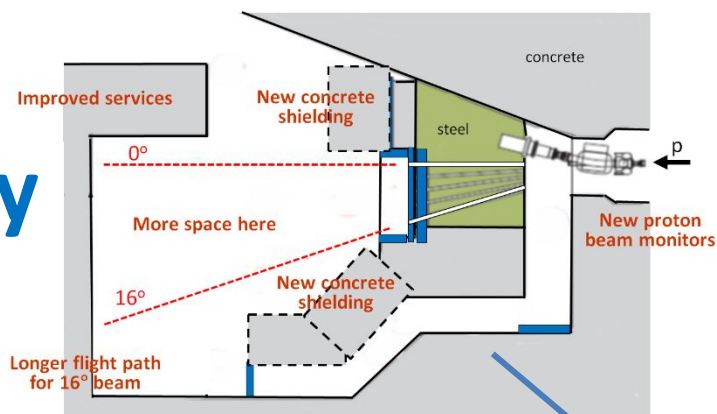
Research @ iThemba LABS

The transdisciplinary research agenda of iThemba LABS brings together scientists working in the physical, medical and biological sciences to solve real world problems while still considering the origin and evolution of the universe.

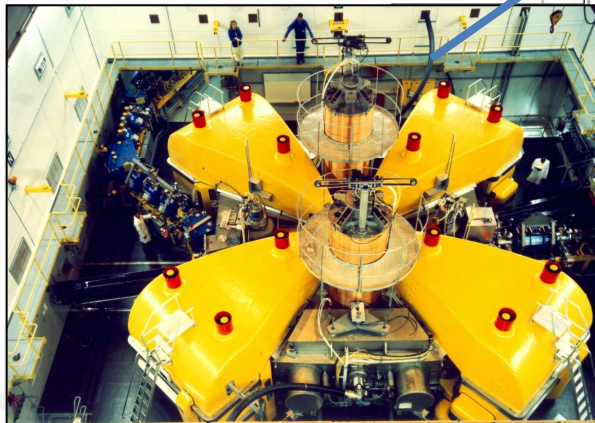
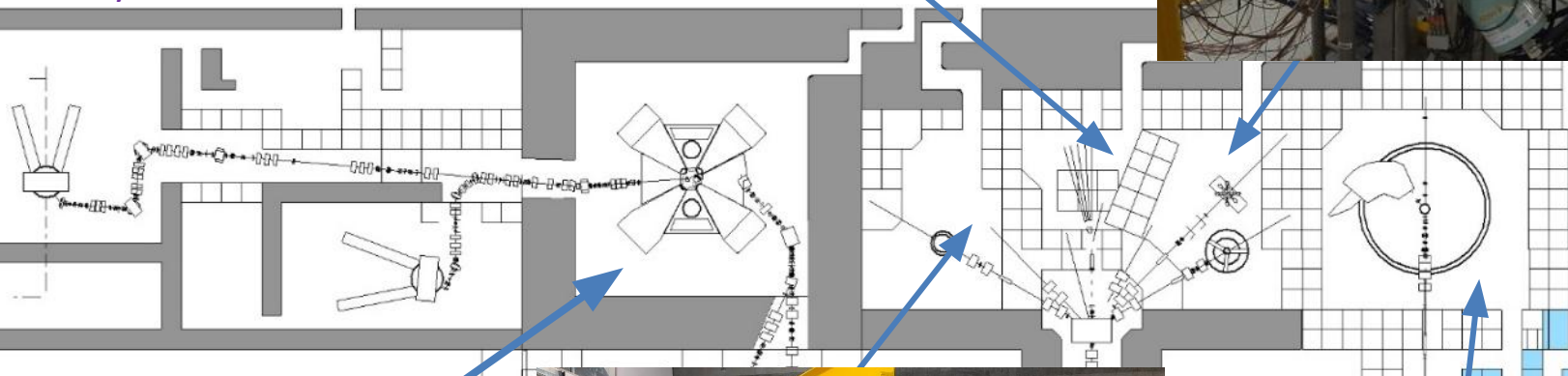


SSC Laboratory

Injector
Cyclotrons



AFRODITE, K600 Experiments



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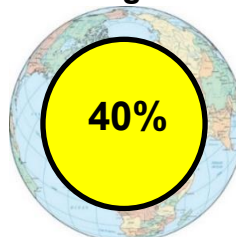
Nuclear medicine: iThemba LABS Radionuclide Distribution Network

^{82}Sr (irradiated Rb metal Target)



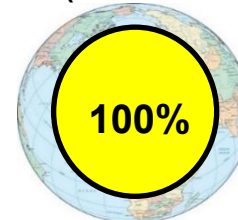
1 exclusive client

$^{68}\text{Ge}/^{68}\text{Ga}$ generator



>80 International Clients

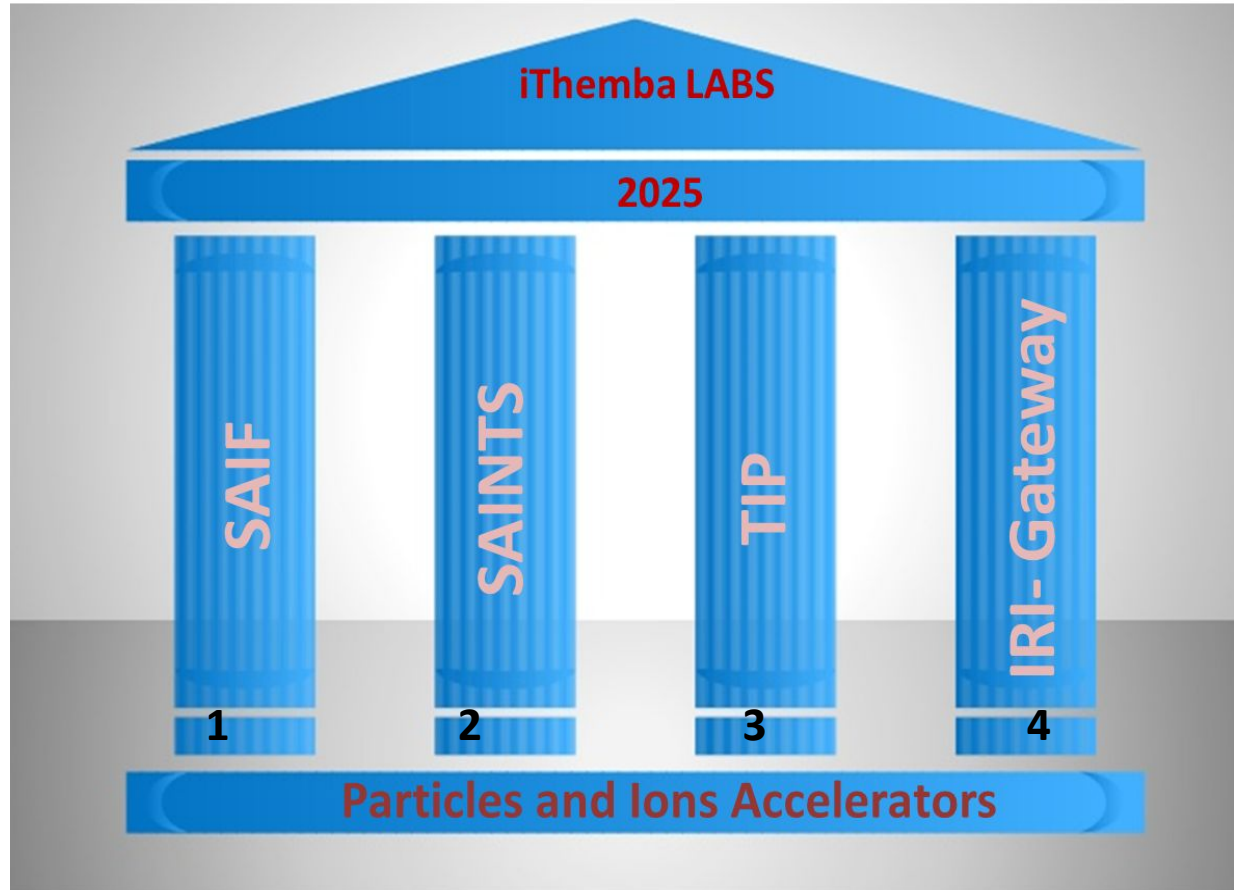
^{22}Na (HV Sources)



>40 clients



The pillars of the iThemba LABS Long Range Plan



1. Science and societal impact
2. Training and HCD
3. Technology and innovation
4. Access to International Research Infrastructure

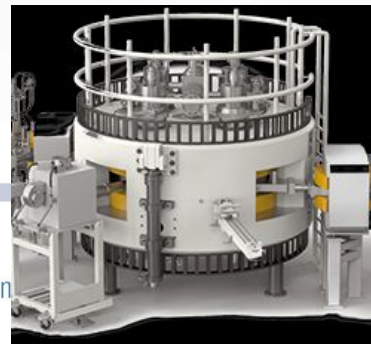
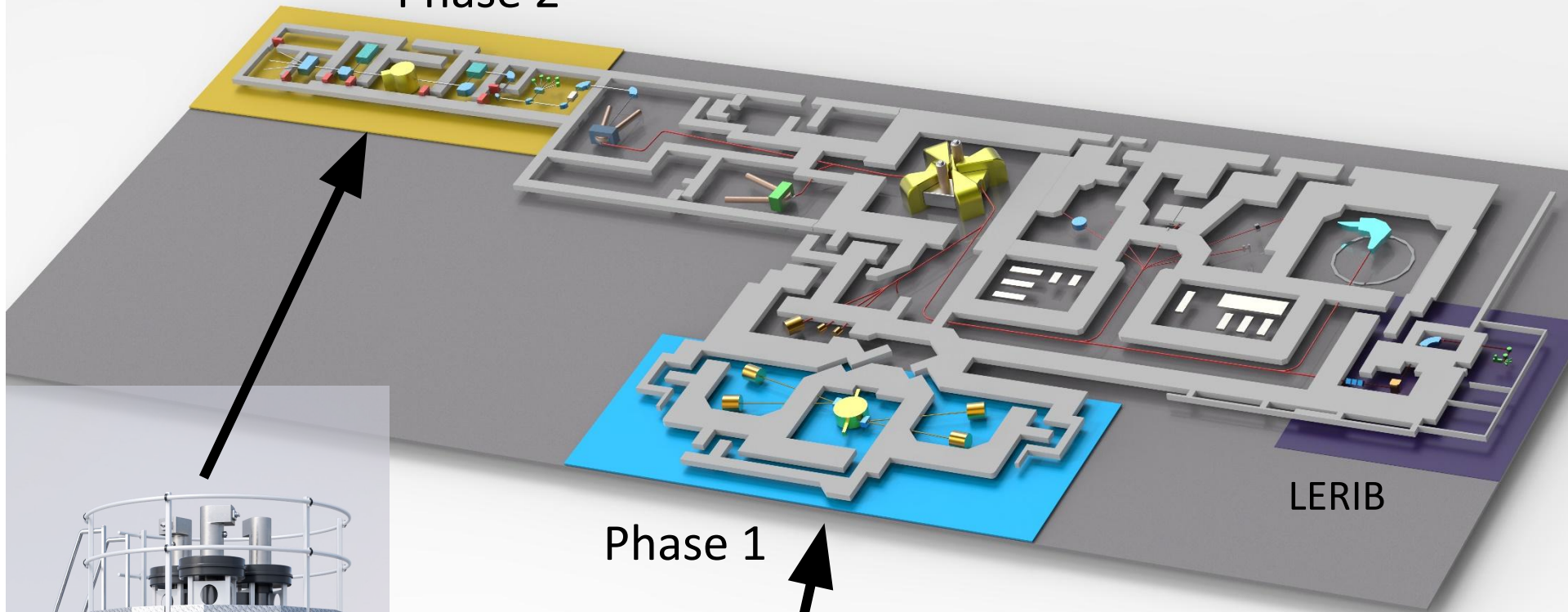
The South African Isotope Facility



Phase 2

Phase 1

LERIB



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TECHNOLOGY AND INNOVATION PLATFORM (TIP)

- Developing innovative technology skills and know-how
- Sharing of innovative technology within NF's and wider
 - Transfer of technology to industry



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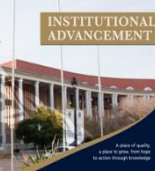
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Southern African Institute of Nuclear Technology and Science (SAINTS)

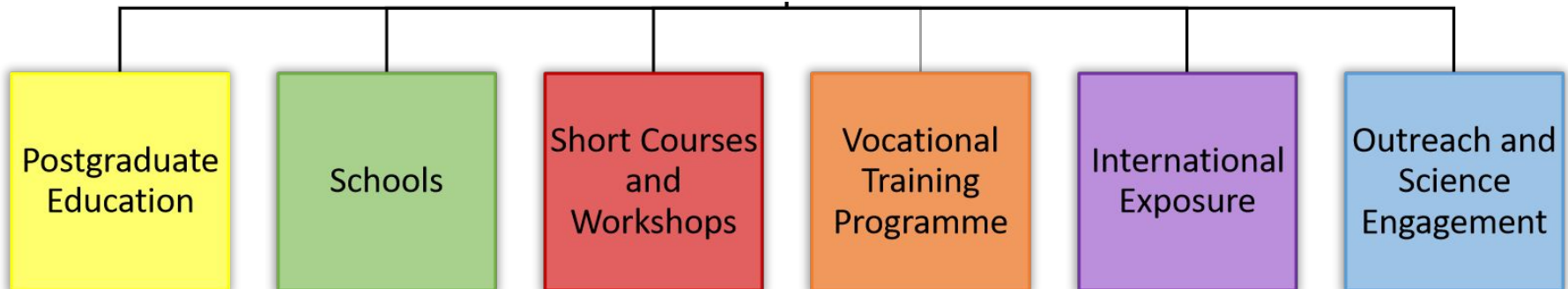


Southern African Institute of Nuclear Technology and Sciences

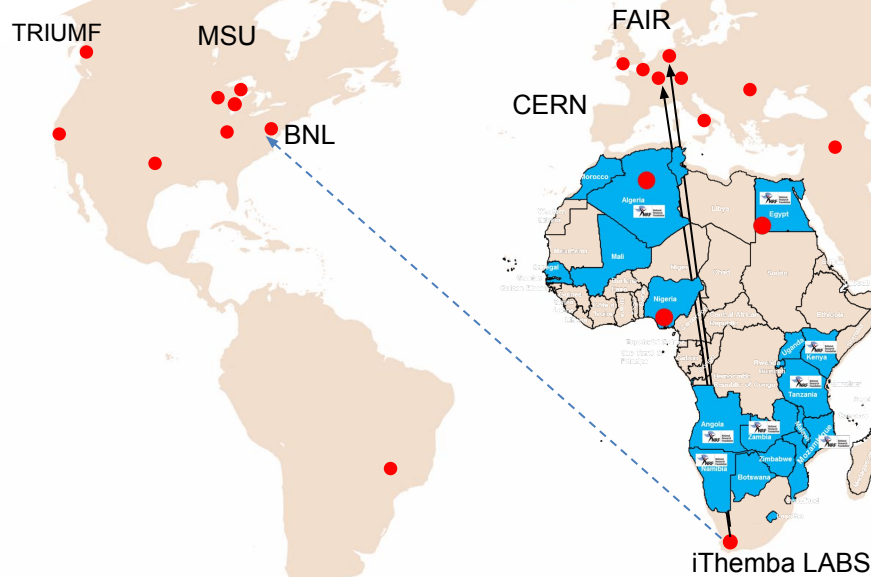


Strategic Objectives

- Improve quality and quantity of research outputs
- Increase training capacity for technical human resource development
- Strengthen collaboration with Higher Education Sector



IRI- Gateway (International Research Infrastructure Gateway)



Hopefully CALICE
soon...

The African gateway to International Large Scale
Research Infrastructures



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Thank you



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