Working on ATLAS as a Student and Postdoc

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My Background
• Pursued all my studies up to undergraduate level in Zambia – my country of origin
• I had no idea what my postgraduate career path was going to be
• To the best of my knowledge, Physics outreach events were non-existent
• Was blind to the many opportunities available to Physics graduates
Final year undergrad - got the opportunity to participate in the African School of Physics (ASP)

Held every 2 years in various countries around Africa

Learned about particle physics and CERN for the first time

Met a lot of people – ASP is still my single biggest network to date
My career path

Bachelor’s degree in Physics – University of Zambia (2011)

• MSc. Experimental particle physics – University of Cape Town (2014)
• PhD Experimental particle physics – University of Cape Town (2020)
• Postdoc – University of Cape Town (July 2020 – October 2020)
• Postdoc at Brookhaven National Laboratory (November 2020 to date)

Postgraduate diploma – AIMS (2012)
Opportunities at CERN and ATLAS
• Every summer, CERN hosts students from all over the world and offers them an opportunity to work with CERN researchers on various aspects of experiments at CERN. (details here)
• Opportunity to learn about all of CERN’s facilities; Lectures, tours…also an excellent Networking opportunity!
• You work on a dedicated project supervised by a CERN researcher. Opportunity to acquire new skills!
• My experience was phenomenal! I would wish everyone to experience being a part of this program
• Prestigious grant awarded to a few PhD candidates working on any aspect of the ATLAS experiment – no restriction on nationality!
• Opportunity to spend at least one year based at CERN – I spent 1.5 years at CERN on this grant
• Opportunity for in-person collaboration with specialists on your team!

[Deatails here]
Conferences/Workshops

- ATLAS authorship qualifies you to give talks at various conferences or workshops on behalf of ATLAS
- Usually earned in 1\textsuperscript{st} year of PhD by performing some qualification task on any subject related to ATLAS
- Excellent opportunity to communicate your work to large/wide audiences + expand your network
- If you love travelling – unique opportunity to visit new places and learn about other cultures

International Conference on high energy physics – Seoul 2018

During workshop on Nuclear Physics – Havana 2019
Working in ATLAS
Detector operations

- **Past**
  - Software development for some aspect of the ATLAS Muon detector chambers
  - Shifter on the ATLAS control room’s muon desk – basically monitoring the muon detector chambers to ensure that they are in good operation as ATLAS collects data

- **Present**
  - Software developer for the Liquid Argon calorimeters
  - Run coordinator for the Liquid Argon calorimeters – generally oversee all work related to operation of the Liquid Argon calorimeter
  - Super-shifter – responsible for the training of shifters on the ATLAS control room’s calorimeter desk
Physics analysis

- ATLAS covers a wide range of Physics from the Standard Model to beyond the Standard Model
- Your work usually depends on your institute’s interests, but there’s a lot of freedom to choose what aspect you want to explore – opportunity to diversify your skills
- You could also be a leader of an analysis (analysis contact)
- You could also be a member of an editorial board; contribute to the detailed review of an analysis, leading up to publication – opportunity to expand your knowledge and leadership skills
- Currently primarily working on the cross-section measurement for the scattering of two same-sign W bosons
- Serving on an editorial board for one of the Standard Model analyses – opportunity to totally go out of my comfort zone 😊
By being a part of the ATLAS collaboration, you benefit from these unique opportunities and much more…

- Opportunity to work in a world-class research environment
- Opportunity to work in a large collaboration, with a diverse group of people
- Opportunity to diversify your skills
- Opportunity to travel and expand your network

Take advantage of the various opportunities available to you and be a part of this unique collaboration.

Thank you!

Hope to see you in ATLAS!!