



The Abdus Salam  
**International Centre  
 for Theoretical Physics**  
**Physics Without Frontiers**



**CELEBRATING 10 YEARS  
 OF PHYSICS WITHOUT  
 FRONTIERS!!**

**Inspiring and training students in  
 developing countries**



Join us to celebrate 10 years of Physics Without Frontiers on the afternoon of the 22 November 2022. The online event will feature many of our volunteers and alumni discussing the impact of our activities all over the world, plans for the future.

Register free to join the celebrations, take part in the discussions, and learn what young scientists are doing the world over to support each other in science.

**1pm - 6pm CET, 22 November 2022**  
**Register: [indico.ictp.it/event/10106/](https://indico.ictp.it/event/10106/)**  
**Contact: [pwf@ictp.it](mailto:pwf@ictp.it)**

With our extensive international network of volunteers we work with over 50 countries in the Global South, to help build the next generation of scientists!



# PWF in Palestine, difficulties and reach

Dr. Muhammad Alhroob  
 University of Oklahoma

Celebrating 10 Years of Physics Without Frontiers  
 22<sup>nd</sup> November 2022

# First PWF edition ever

## Preparation

Muhammad Alhroob, West bank/Palestine

- It started as an idea by Dr. Kate Shaw at CERN R1 in summer of 2011, inspired by international masterclass
- The idea was to introduced particle physics, detector and accelerator and detector physics, and inform students about opportunities abroad
- Six months preparation to find volunteers, convince physics departments to participate, find funding and mangle logistics
- Three universities:
  - **Al-Quds university**
  - **Birzeit university**
  - **An-Najah university**
- Ramallah High school for girls





# First PWF edition ever

## Activities

Muhammad Alhroob, Hebron/Palestine

- More than 20 students participated in a full day session at each university:
  - Four lectures about particle physics, ATLAS and particle detection, accelerators, and opportunities abroad
  - Hand on session to analysis ATLAS events
  - Virtual tour to the ATLAS control room with Steve Goldfarb
  - Final ceremony and distribute certificates
- Organised by Dr. Kate Shaw, Muhammad Alhroob, Ahmed Bassalat and Sharif Ghithan



# Highlights from 2012

Sabreen Hammouda,

- Master degree from Al-Quds University
- PhD from Jülich in Condensed matter physics
- Postdoc at FZJ, Garching, Germany

Mazuza Ghneimat,

- CERN summer student 2012
- Diploma from the ICTP in HEP
- PhD from Bonn at ATLAS
- Postdoc at Siegen at ATLAS

Asmaa Alhroob,

- Master degree from Al-Quds University
- PhD from Jülich in Nanotechnology
- Postdoc at FZJ, Jülich, Germany

Al-Quds University 2012





# PWF 2013

Tasneem Rashid,  
• Master degree from from France  
• CERN summer student  
• PhD from France in particle Physics  
• Postdoc in France

Suhad Daraghmeh,  
• Master degree from Birzeit  
• CERN summer student in 2013

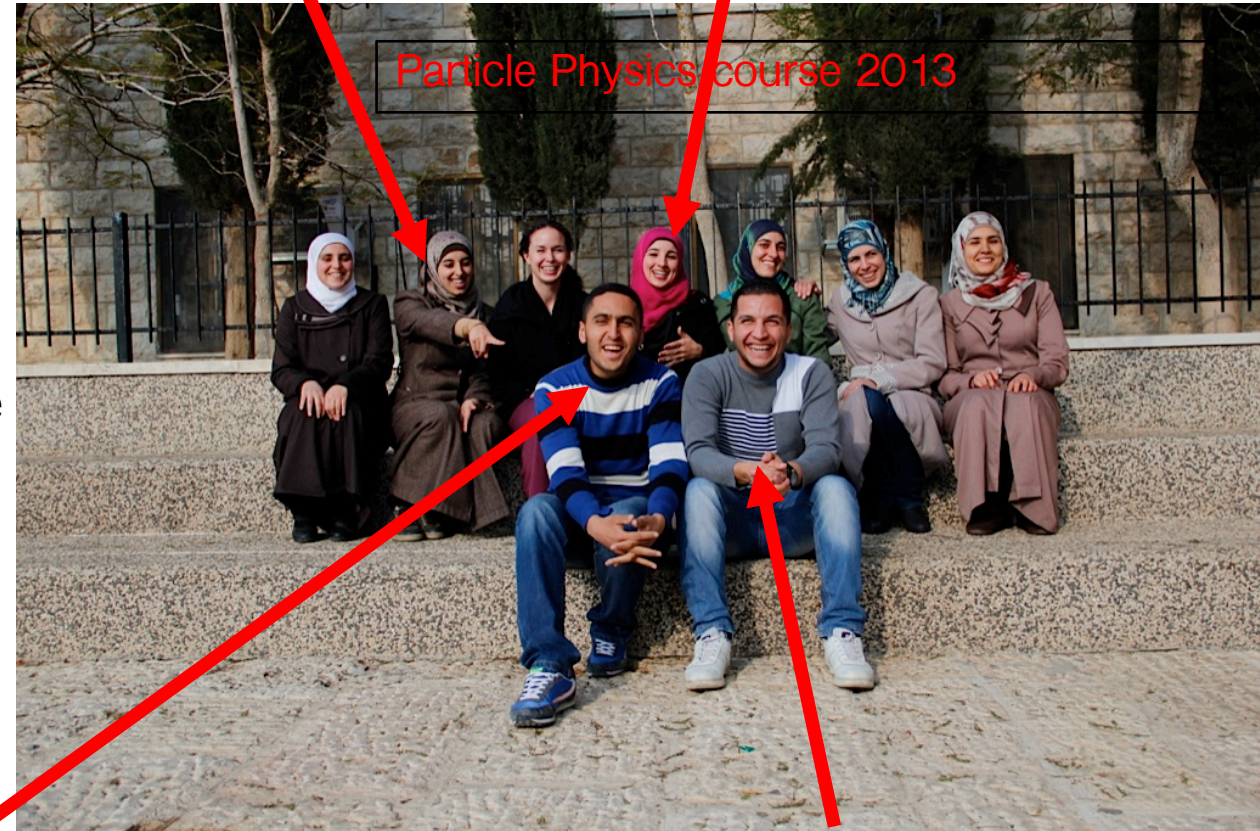
**Birzeit** University participated in 2013:

- Organised by Kate Shaw and Muhammad Alhroob
- A virtual tour to the ATLAS control room

2013 witnessed the start the online Particle Physics course  
Started in September 2013

Organized and taught by Prof. Bobby Acharya

Tutored Dr. Kate Shaw who was based at **Birzeit** University



Ahmad Taninah,  
• Master degree from from Birzeit  
• PhD from USA in Nuclear Physics

Mohammed Faraj,  
• Master degree from from Birzeit  
• PhD from Udine in particle Physics  
• Postdoc at ICTP

# The Particle Physics Course

- The particle physics course coordinated annually by Bobby Acharya
- Around 10-15 students participate in the course
- More volunteered participated:
  - 2013 Bobby Acharya and Kate Shaw
  - In 2014, Kate Shaw and David Marsh
  - Since 2015 **Viraf Mehta** delivered the Particle physics / QFT course with **Lukas Witkowski**, **Eirik Svanes**
  - In 2021, tutored by **Marwan Najjar** who is former BZU student
- General Relativity course currently ongoing with **Georges Obied**





# A Trip to SESAME



In 2015, Kate Shaw organised a field trip to SESAME in Jordan for students who attended the particle physics course



# Expanding the program

Since 2012, more universities and Volunteered have participated; some were former students attended the program and the online course in 2012 and 2013





# First PWF edition ever

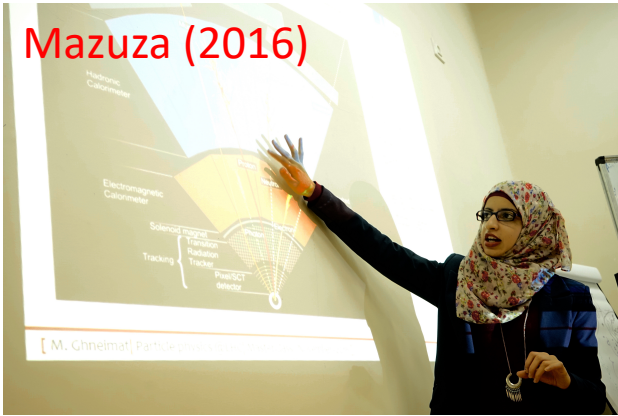
## IMPACT

- Many universities have participated in the program regularly
- The particle physics course taught regularly
- Students become aware of HEP activities and opportunities abroad
- More than 30 students attended the CERN summer school, the ICTP diploma, and persuaded their graduate studies abroad
  - Snowball effect

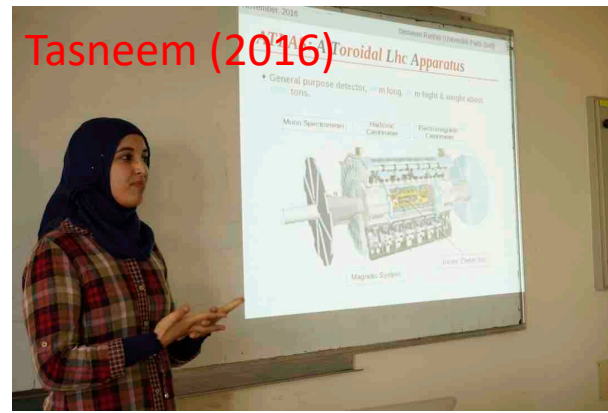




Mazuza (2016)



Tasneem (2016)

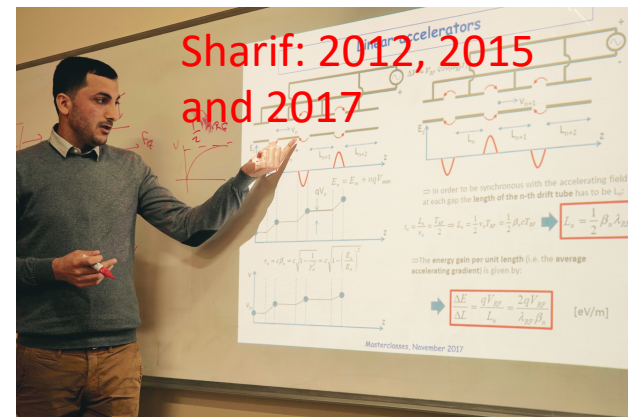


Arab American University / Jenin (2016)

AN-Najah University (2015)

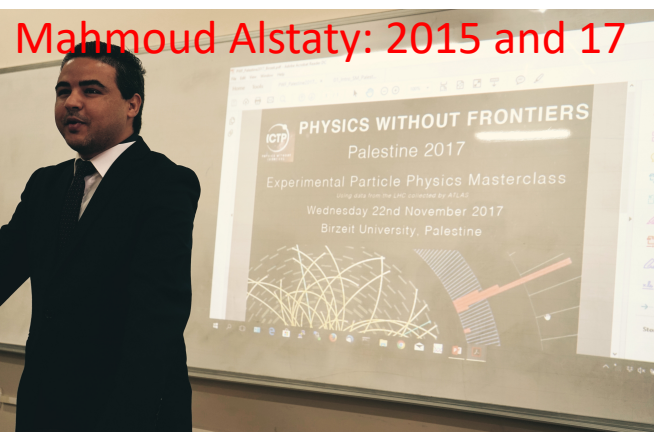


Birzeit University(2015)



Sharif: 2012, 2015 and 2017

Mahmoud Alstazy: 2015 and 17



Nedaa (2015)



Ahmed (2012, 2014)  
Hadil (2014)

