What if the next Marie Curie or Albert Einstein is from a country/region/background without exposure or opportunity in physics research?
Physics Without Frontiers

ICTP Physics Without Frontiers works to inspire, train and motivate physics and mathematics university students worldwide with some focus on science and technology lagging countries, to help build the next generation of scientists. Each project is unique, developed with the country's specific needs in mind.

HEP Workshop, Afghanistan
Physics Without Frontiers

PWF focuses on undergraduate and master students who are attending universities where they don’t have research (no PhD or master projects) in a given field, and thus lack a particular expertise.

Consequences include:
- Students lack exposure to topics they may really enjoy and want to pursue
- Students may lack training and courses required to apply for further study
Physics Without Frontiers

Consequences include:
- Students may lack key computation skills for the job market that often make physics/maths graduates attractive
- Faculty and students may not have connections to international organisations, or knowledge about opportunities, further training, and funding.
Physics Without Frontiers

PWF partners with universities to address these issues, and support the growth of new areas of research.

Each programme is different, and we work with a tailor-made team of passionate scientists to discuss the issues and design a project to address them.

Palestine Course in Standard Model Physics

Venezuela Roadshow on experimental techniques in particle physics
Physics Without Frontiers

University courses
Provide an expert scientist(s) to teach a specific course the university is unable to offer. Resources are given and often lecturers join the course to get trained.

Workshops & Schools
A group of international scientists, some of whom are from the host country, teach an intensive several-day programme on a topic the university lacks.

Roadshows
A group of international scientists, some of whom are from the host country, visit several universities across a country, running one day-intensive training.

We always: provide careers and opportunity sessions, provide year-round mentoring for students for further study, work with the departments to support them their ambitions, and organise additional public engagement or outreach events, and interact with local media.
Physics Without Frontiers

Our volunteers:
AFGHANISTAN
ALGERIA
ARGENTINA
COLOMBIA
GUATEMALA
NAMIBIA
NEPAL
NIGERIA
PALESTINE
PERU
SRI LANKA
TUNISIA
URUGUAY
VENEZUELA
VIETNAM
ZIMBABWE

Winter School, Nepal

Earth system physics roadshow, Zimbabwe
Physics Without Frontiers

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VENEZUELA
VIETNAM
ZIMBABWE
Physics Without Frontiers

How we communicate to scientists - since our target are generally isolated? Use social media, email ICTP networks, website, brochures, posters!
Physicists Without Frontiers

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URUGUAY
VENEZUELA
VIETNAM
Zimbabwe
We have run two special programmes this year to support more deeply countries that need it most:

**Venezuela**

Due to the urgent political situation, it is likely many academics will forced leave

- we are providing 4 fellowships to provide funds to teach and do research
- 2 fellows will also be awarded travel budget to support visits to other institutions in the region
- These will start autumn term
We have run two special programmes this year to support more deeply countries that need it most:

**Afghanistan**

We are working towards building masters programmes in physics, however in the mean time students have little opportunity, and Afghanistan is lacking in MSc/PhD

- We have partnered with the Institute for Advanced Studies in Basic Sciences (IASBS), Iran, to provide 5 scholarships for top students to study a 2-year MSc in Physics

- We will follow graduates, and in time we hope this fills some of the lacking capacity in Afghanistan at the MSc and ultimately PhD level
Physics Without Frontiers

Summary

Over 5000 students have taken part to date
Over 30 students onto further study that we have mentored and followed, some of whom are now volunteers

Many projects maturing: Infrastructure, training and lobbying paving the way for new research areas. Helping to support scientists worldwide to conduct research and training!

2019: We have had 54 applications for the next academic year

Afghanistan
Algeria
Bangladesh
Bhutan
Cameroon
Chile
Colombia
Ethiopia

Ghana
Guatemala
Honduras
India
Iraq
Kenya
Palestine
Pakistan

Iran
Malaysia
Mauritius
Neal
Nigeria
Philippines
Peru
Senegal

Sierra Leone
Sri Lanka
Togo
Tunisia
Tanzania
Venezuela
Zambia
Zimbabwe