

How to bring Particle Physics Masterclass to Developing Country?



Lead by : IPPOG Working Group –
Masterclasses for Developing
Countries

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Problems

students don't see a future in science, no access to opportunities

developing resources to allow insights into fundamental science for other disciplines

language problem since most resources are in English

not enough emphasis on fundamental science vs math

no access to books and resources, no electricity/internet

no access to local scientists or physicists to interact with students

lack of skilled, competent teachers, and passionate/interested teachers

too many students (upto 100 in a classroom)

What teachers would like students to take away?

- a sense of wonder and curiosity about the world
- to think independently for themselves, to want to understand deeply, to learn the basic concepts of science
- to have more practical, hands-on experience

International Masterclasses

• Concept

- Students (15 -19 years old) spend 1 day at research institute,
- experience science from scientists "The Master" and
- carry out measurements based on analyses of real data from particle physics experiments,
- discuss their results with colleagues
- basic idea from UK (1996, Roger Barlow et al.)

• Objectives

- stimulate students interest in physics
- demonstrate scientific research process
- let students explore fundamental forces and building blocks of matter
- offer authentic experience



International Masterclasses



UNICEF

REGIONAL MASTERCLASS

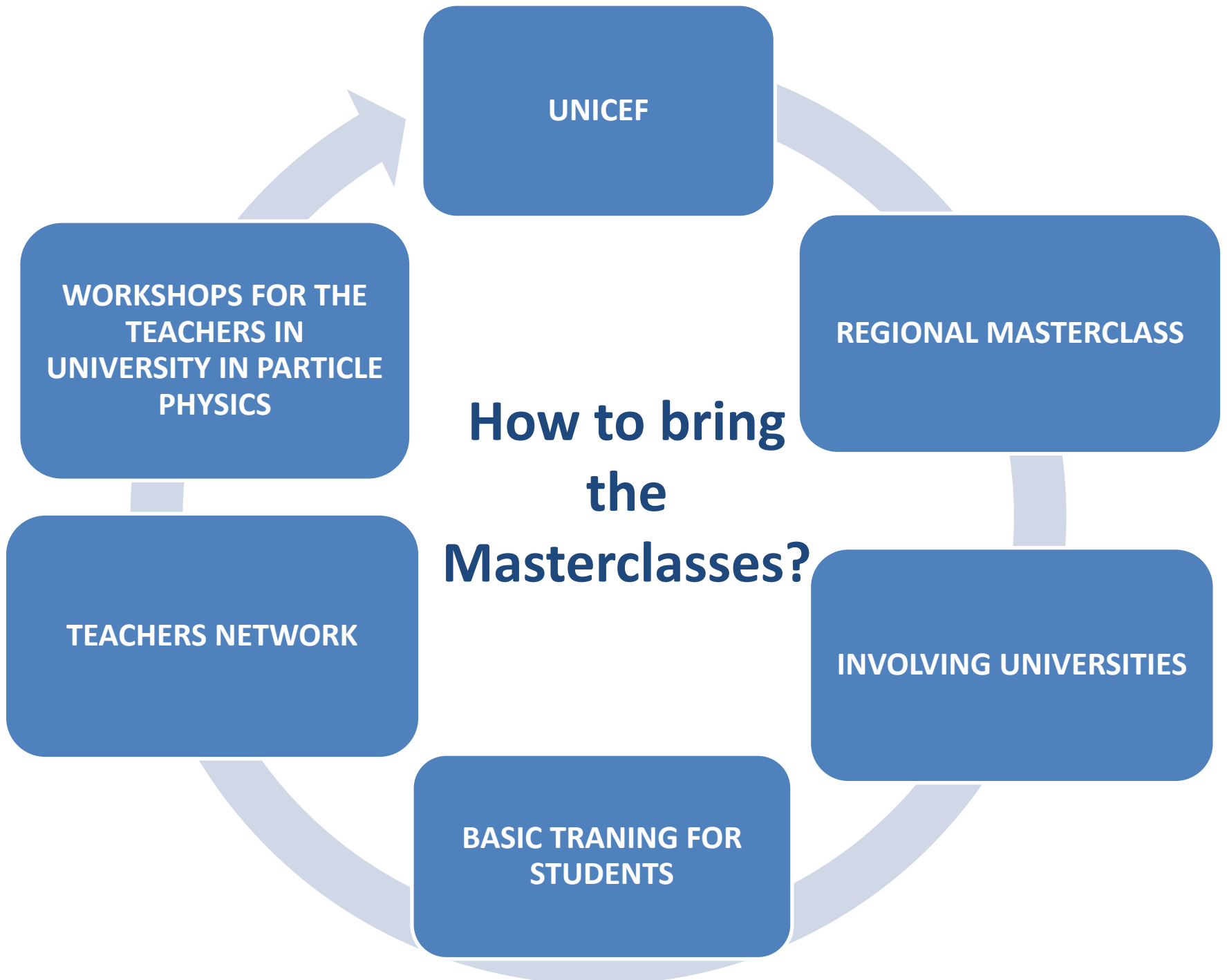
WORKSHOPS FOR THE
TEACHERS IN
UNIVERSITY IN PARTICLE
PHYSICS

How to bring
the
Masterclasses?

TEACHERS NETWORK

INVOLVING UNIVERSITIES

BASIC TRAINING FOR
STUDENTS



RESOURCES

<http://home.web.cern.ch/students-educators>

<http://ippog.web.cern.ch/>

<http://education.web.cern.ch/education/>

<http://www.cernland.net/>

<http://www.particleadventure.org/>

<http://www.teilchenwelt.de/>

<http://ed.ted.com/>

<https://cds.cern.ch/?ln=en>

<http://quarknet.fnal.gov/>

<http://atlas-minerva.web.cern.ch/atlas-minerva/>

<http://hypatia.phys.uoa.gr/>

<http://www.learningwithatlas.eu/>