



Swedish Teachers Programme Improvements

19 June 2013 – L.Jirdén

Summary

- Information & Registration
- Funding
- Programme content
- Support & Follow-up
- Organization and run of Programmes



Information and Registration

- How do teachers know about the CERN Teachers programme?
 - In general, they don't !!!
 - Via satisfied participant
 - Via CERN Education site
 - -> Teachers Programme -> National Programmes for Teachers -> Sweden -> National contact -> L.Jiriden ...
- Needed: “National Information and Registration service”
 - Various levels
 - “Gymnasie” teachers
 - “Högstadiet” teachers
 - Teacher students
 - Students
 - Registration criteria
 - Qualification, priorities, etc.
 - Payment



Funding

- Costs
 - Travel, accommodation, meals ~ 800 CHF/person
 - Normally paid by schools/teachers – varies from school to school
- Limitations
 - limited school budgets to be shared by all
 - Late decisions → complicates planning
 - teachers not replaced during a course
 - → course periods restricted to end June and end October
- Other possible funding
 - “Stipendier”, fonds, EU-money, etc.
 - How efficient?
 - Is German trick applicable for Sweden/Scandinavia?
 - Courses for “interested people” – not specifically for teachers & students
 - → Federal Funds
 - EX. Germany: 1 M€ for 3 years



Programme content

Lectures

- Introduction to CERN
- Introduction to Accelerators
- Introduction to Particle Physics
- Why do we do PP research?
- Cosmology
- Antimatter
- Higgs + new Physics
- Medical applications, spin offs
- Data Challenge
- Introduction to Master Classes

Visits

- Accelerator
 - Magnet test facility
 - Proton source, linac...
 - LHC control centre
- Experiments
 - ATLAS, CMS, ALICE
 - AD experiments
- Other
 - AMS control centre
 - IT computer centre
 - Globe

Exercises

- Build Cloud Chamber
- Cosmic Ray detection
- Exploring particles



Programme content

■ Reviews

- Review of the day
- Q & A sessions
- Course evaluation

■ Social events

- Discover Geneva Treasure Hunt
- Programme dinner
- Aperitif with Swedish scientists
- Improvised evening activities

■ Lecturers & guides



- Richard Jacobsson
- Hans Danielsson
- Tord Ekelöf
- Thomas Pettersson
- David Milstead
- Peter Sollander
- Roderic Bruce
- Roger Ruber
- Christian Hansen
- Olov Barring
- Kerstin Jon-And
- Elena Wildner
- Tommy Ericsson
- Olof Ahlen
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- Michael Doser
- Dave Watts
- Maria Pradillo
- Giacinto De Cataldo
- Despina Hatzifotiado
- Mick Storr
- Antonino Sergi
- Markus Joos
- Hartmut Hillemanns
- ALICE DCS members
- CERN guides
- ...





Programme content

■ Course evaluation

- In three words: Interesting – Inspiring – well organized 
- Liked best: Cosmology/Antimatter – medical applications – cloud chamber
- What to improve: More breaks – time to think – understand
- Follow-up: Contact for questions & support – help setting up experiments for students
- Usefulness: Questionable; how to apply at school
- Conclusion: Course is excellent (4.8/5) but support and follow-up is needed 



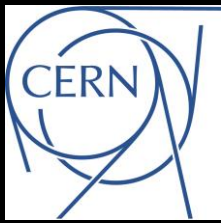
Support & follow-up

- **Course slides**
 - Excellent and available online...
 - ...but it is not enough

- **Teaching Materials**
 - Some exist on EDU site;
<http://education.web.cern.ch/education/Chapter2/Intro.html>
 - In English or German Needs translation + dispatching
 - Sharing between teachers ?

- **Tools for lab experiments**
 - Cloud chamber description + support needed
 - Cosmic ray detection scintillator tool to be developed
 - Data analysis ATLAS, CMS, ALICE tools to be supported
at schools

- **Feedback**
 - Evaluation of results 2 – 5 years later



Organization and run of Programmes

- Availability of Swedish (Scandinavian) lecturers sometimes difficult
 - Senior engineers & physicists
 - Young PhD students
 - We are all very busy...
- Better recognition and visibility in Sweden
- Svenska Fysikerförbundet to make list of people who can participate
- PhD students in Physics Education...