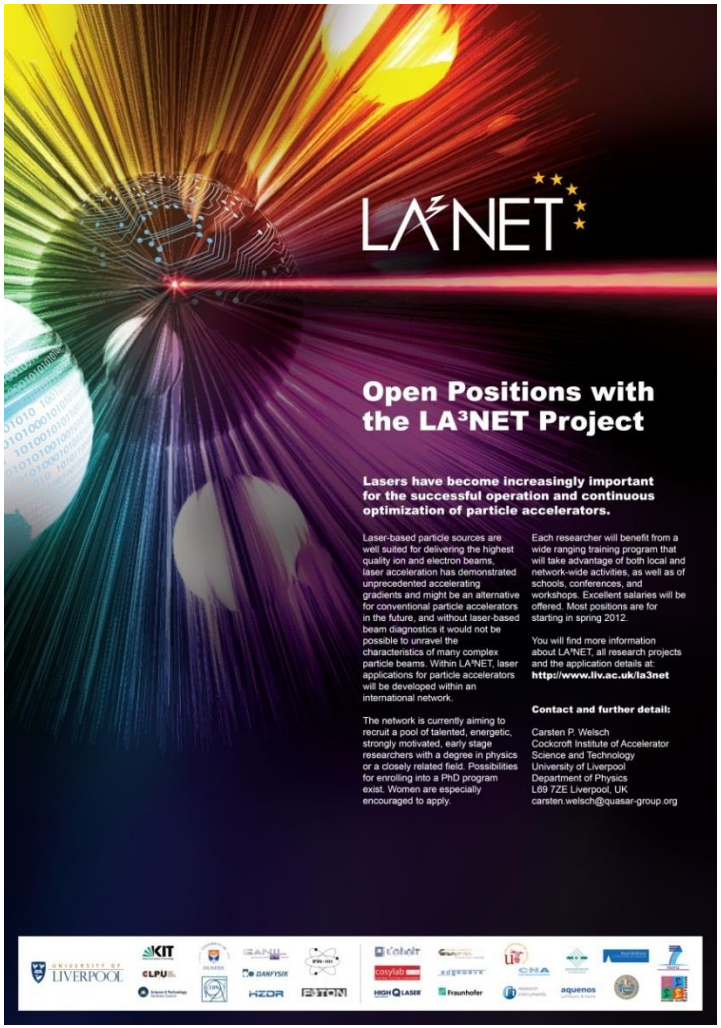
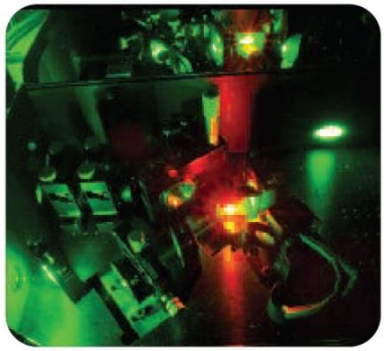

LA³NET
WELCOME !
to this LA³NET Workshop
Carsten P. Welsch



- Laser Applications for Accelerators – A Marie Curie Network
  - 19 ESRs
  - 36 Partner Institutions
  - 4.6 M€

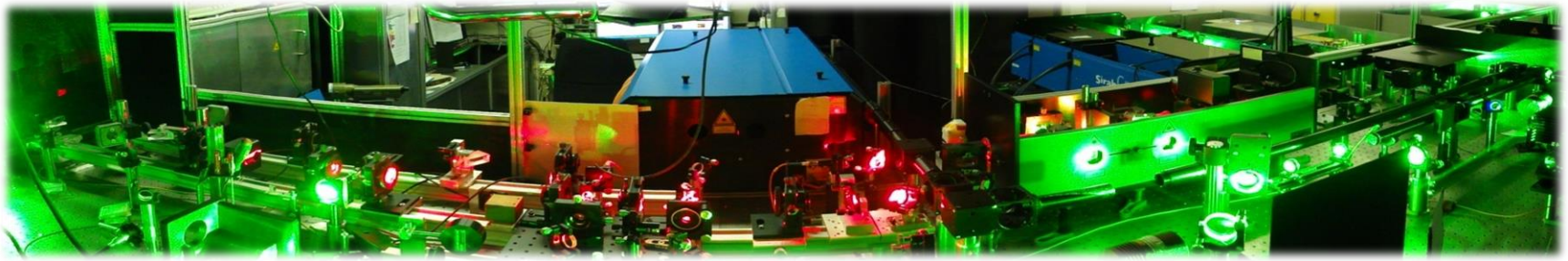
LAser Applications at Accelerators a european NETwork

- More than 30,000 accelerators in the world;
- Lasers are becoming increasingly important
  - Beam generation;
  - Acceleration;
  - Characterization, etc.
- Few experts trained in both fields;
- Large scale facilities: International collaboration is key !



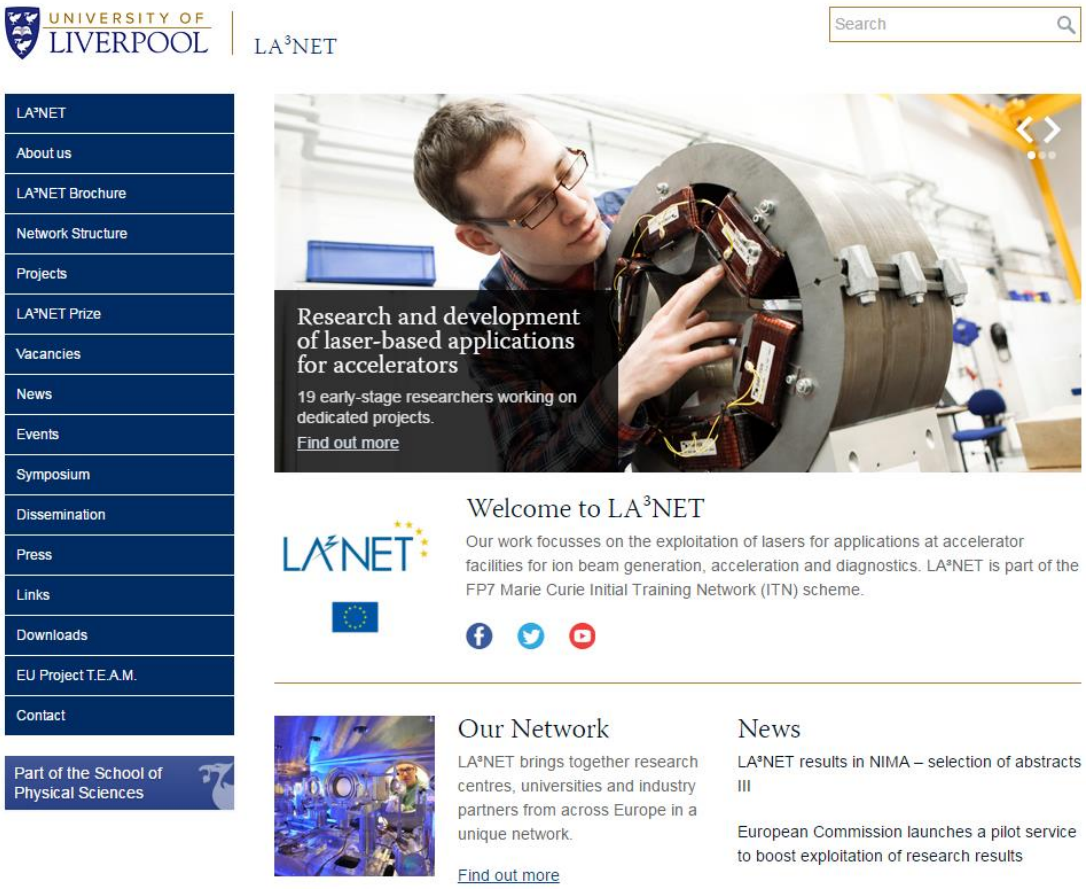
Research Program

- Main areas:
  - Particle Sources (WP2);
  - Particle Beam Acceleration Schemes (WP3);
  - Beam Diagnostics (WP4);
  - System Integration (WP5);
  - Laser and Photon Detector Technology (WP6).

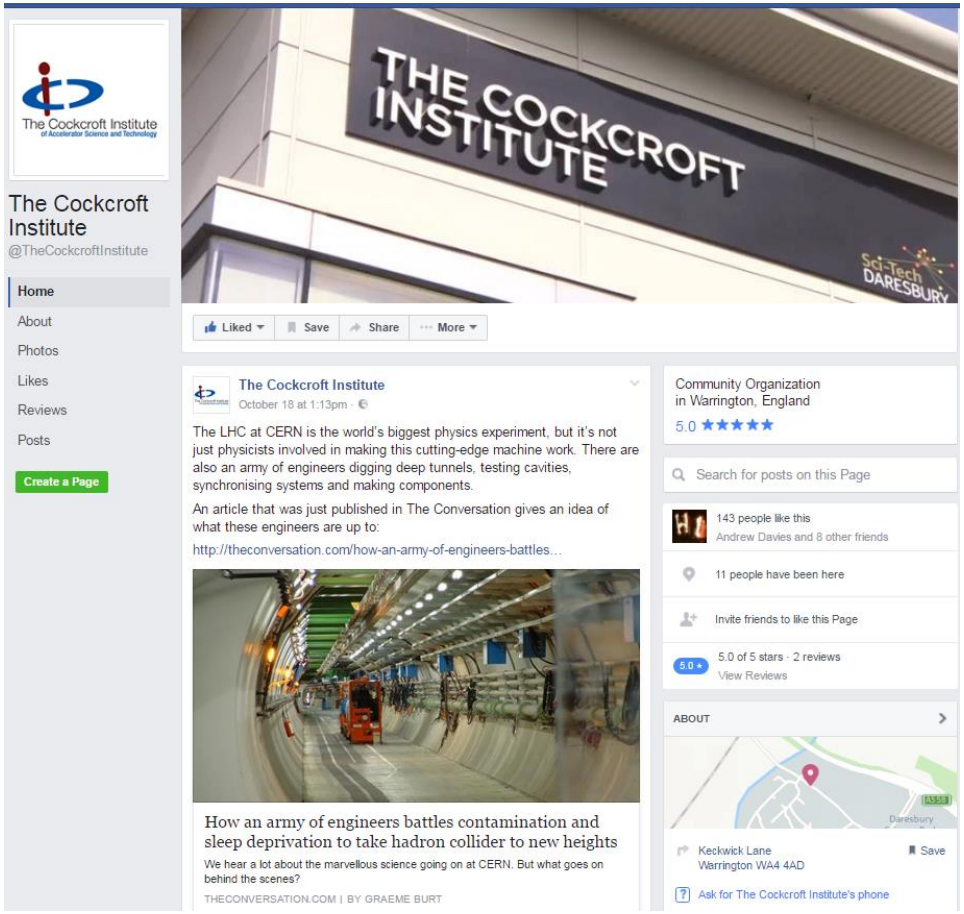


A unique training program

LA³NET Web Site



(http://www.)la3net.eu



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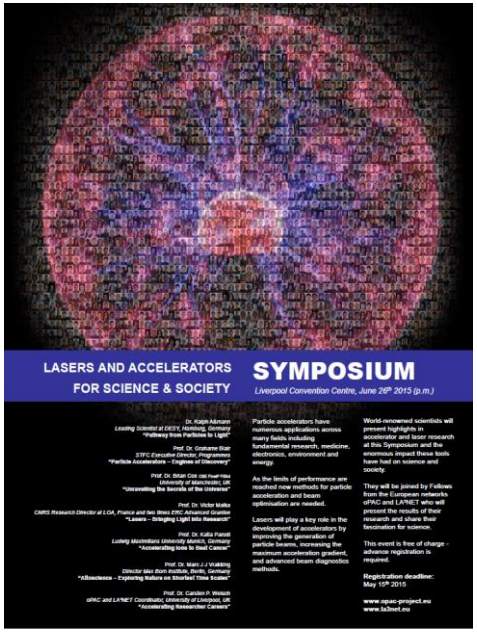
Outreach & sharing best practice

ESOF 2014 COPENHAGEN EUROSCIENCE OPEN FORUM

- **Complementary skills training**
  - Communication, project management, IPR
- **Administrator training**
- **HEA seminar, Teaching & Learning**

Public engagement

- Fairs & conferences
- Project videos
- Symposium on Accelerators & Lasers for Science and Society, Liverpool Convention Centre, 26 June 2015



International Partnership



Accelerators & Lasers

Drivers of Innovation

Prof. Carsten P. Welsch

Where do we want/need to go ?

TIARA
ACCELERATING KNOWLEDGE AND INNOVATION

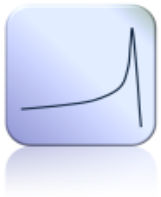
- EU capacity: infrastructure and human ‚capital‘

Grand Challenges

- oPAC Workshop @ CERN
- IndicoID: 243 336

Medical Accelerators

- (online) beam monitors
- Improved calorimeters and Si detectors



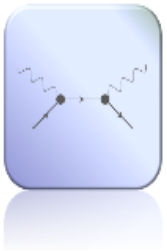
- Enhanced Monte Carlo codes (FLUKA)
- Systematic studies into e.g. ion effects

- Common software bus
- Improved beam delivery schemes

Antimatter Facilities

- Better facility design
- New beam handling techniques

- Online diagnostics
- Improved detectors



- Experiments: Novel cooling schemes
- Spectroscopy on antihydrogen.

Way to go: Novel Accelerators

- Dielectric Laser Accelerators
- Particle-driven laser plasma acceleration
- Laser plasma acceleration

...all require improved simulation studies, better understanding of beam/field/plasma interaction and a coordinated R&D effort. We will plan this tomorrow !

Summary

- LA³NET was a world-wide unique training that has produced excellent R&D results and many publications
- 19 Fellows successfully trained
- Role model: Enhanced training program to improve career perspectives
- A number of large-scale accelerator and laser projects are in the planning – but where are the experts !?

Many more initiatives are urgently required !