

# WELCOME !

## 1<sup>st</sup> Topical Workshop

*Carsten P. Welsch*

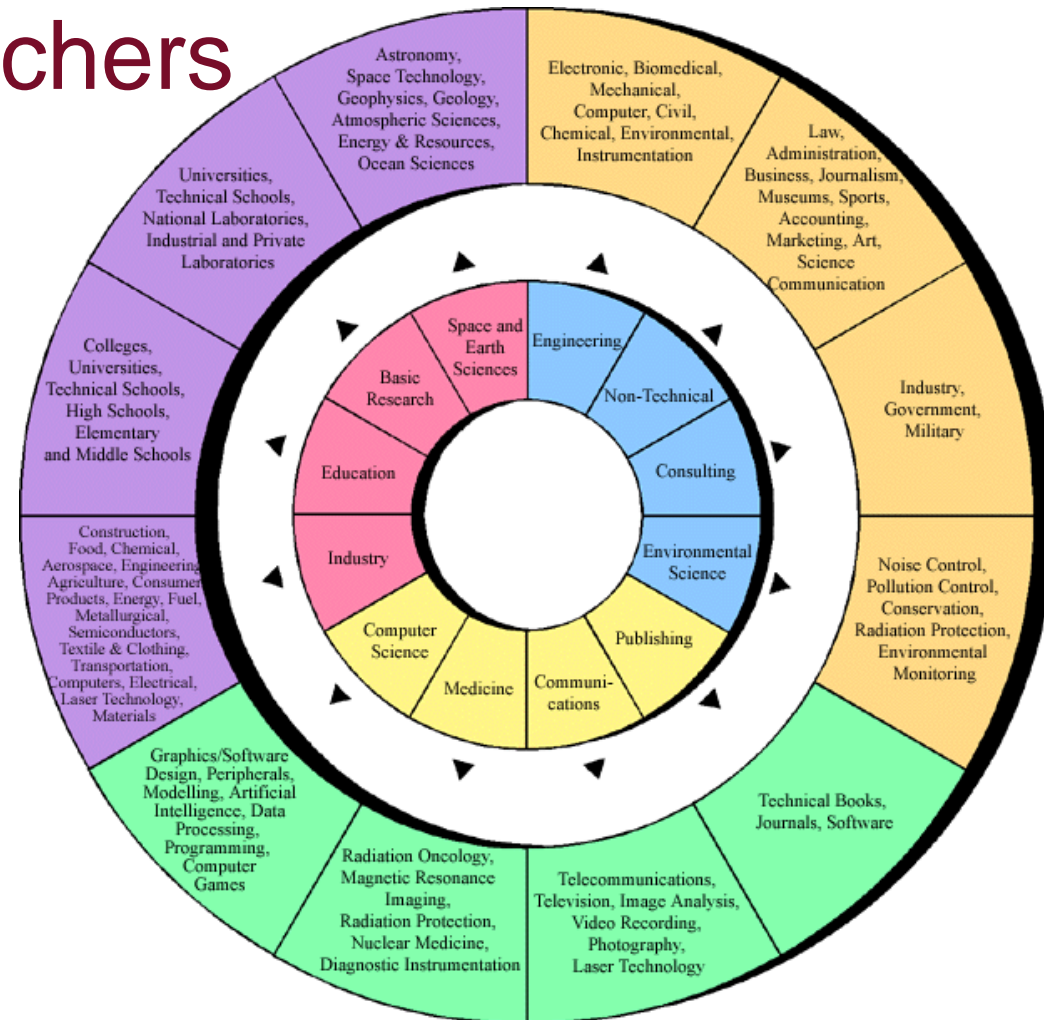


# Laser R&D and researcher training within LA<sup>3</sup>NET

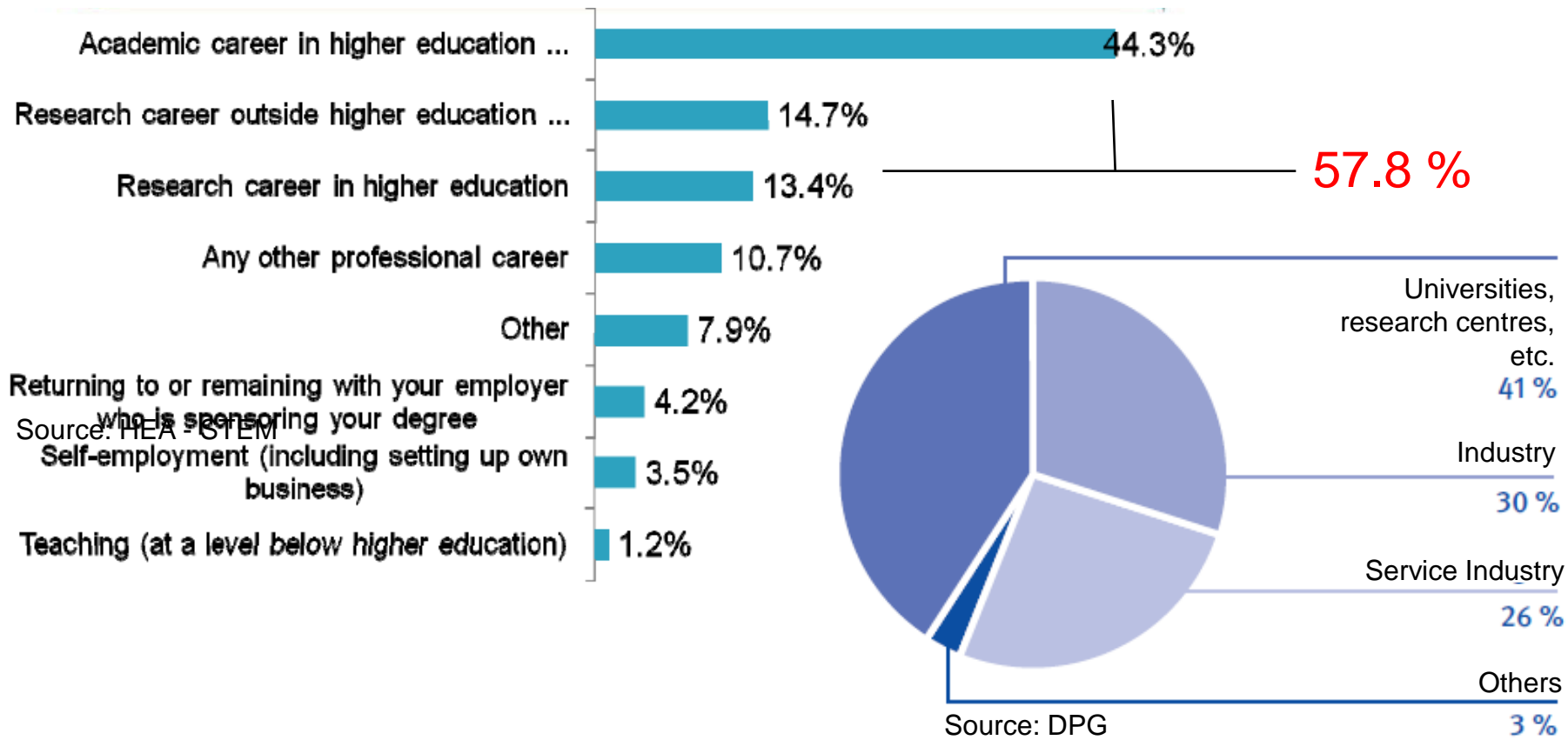
- What is LA<sup>3</sup>NET ?
  - Motivation
  - The consortium
  - The network's research and training program
  
- This Topical Workshop
  - Sessions overview
  - Laboratory visits
  - Discussion

# European Researchers

- MSc standard;
- PhD part of training in most countries;
- Broad skills;
- Blue sky research vs. applied physics.



# Career – Aspirations and Reality



# ‘Classic’ PhD training in Europe

- Focus on academic career path;
- Scientific papers as key quality indicator;
- Training through (often blue sky) research;
- Very little training in complementary skills – researchers often need to be (re)trained on the job;
- Students or researchers ?

Evolution: Initial training networks (ITNs)

# Marie Curie ITNs

- Introduced in EU Framework Program 7 – 4.8 B€ !
- 1996 – 2010: 50,000 Marie Curie researchers;
- Provides support for early career and experienced researchers (young Postdocs);

## Goals

- Improve employability of researchers;
- Better training through demonstrated international mobility;
- Maintain Europe's leadership position in R&D.

## LA<sup>3</sup>NET: Background

# DITANET

« novel **D**iagnostics **T**echniques for future particle **A**ccelerators:  
A Marie Curie Initial Training **N**ETwork »



## Background: DITANET

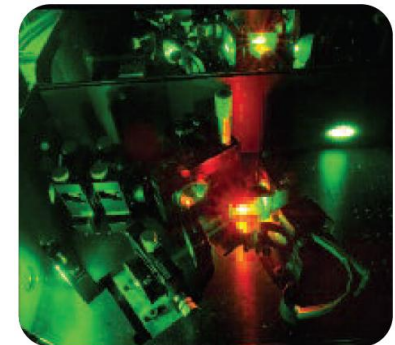
- Largest-ever EU funded training network in beam instrumentation and diagnostics (4.2 M€);
- Training of researchers (18 ESRs, 3 ERs)
- Gives industry an important role;
- Presently 32 partners (*and still growing...*)
- Recognized importance of beam diagnostics at European level !  
(only 68 from 905 selected - with 11 in physics)

C.P. Welsch, Proc. BIW, IPAC 2011



## LAser Applications at Accelerators a european NETwork

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



 Multi-disciplinary field !

# The 2011 MC ITN Call

- One of the most competitive (EU) funding schemes.
- A total of 1022 ‘Outline’ Proposals were received
- Proposals were evaluated within 8 “Panels”
  - CHE: 108 proposals
  - LIFE: 285 proposals
  - ENV: 121 proposals
  - ECO: 15 proposals
  - SSH: 72 proposals
  - ENG: 204 proposals
  - MAT: 15 proposals
  - PHY: 99 proposals

Only 84 selected;

➔ ~8 %

## What does this mean ?

- Funding for **17 fellows** (*15 recruited*)
- One of the **very large Marie Curie networks** with a budget of 4.6 M€
- Gives **industry an important role** in training the next generation of scientists !
- Allows for organizing a (large) number of **events**.
- Many opportunities to **become part !**

# International Partnership

## Beneficiary Partners



## Associated Partners

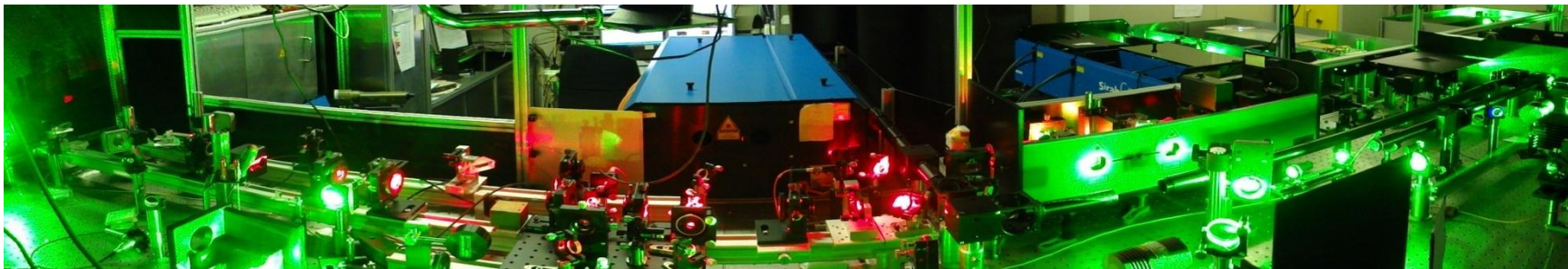


+ many new partners are joining us...!!!

# Research Program

## ■ Main areas:

- Particle Sources;
- Particle Beam Acceleration Schemes;
- Beam Diagnostics;
- System Integration;
- Laser and Photon Detector Technology.



# Training

- Local training by host:
- Network-wide events on diagnostic techniques;
- Intra-network exchange of researchers;
- Secondments to partners from industry;
- Training in complementary skills




Motivation: *Ideal* Training.

# Workshop overview

- Very intense program;
- State-of-the-art covered;
- Laboratory visit today;
- Collaboration/Grant application discussion tomorrow
- Network, discuss, meet friends !

Laser R&D and Researcher Training within LA <sup>3</sup> NET		Prof. Corrado WELSCH
20-7-2016, CERN		09:00 - 09:30
Normal-conducting RF photoinjectors for Free Electron Lasers		Dr. Frank STEPHAN
20-7-2016, CERN		09:30 - 10:00
Laser systems for the low emittance injector of the future Swiss FEL X-ray source		Dr. Maria DIVALL
20-7-2016, CERN		10:00 - 10:30
Coffee Break		
CERN		10:30 - 10:40
Laser ion source of the ISAC/TRIUMF on-line radioactive ion beam facility		Dr. Jens LASSEN
20-7-2016, CERN		10:40 - 11:20
The Alto laser ion source		Dr. Ruchang LI et al.
20-7-2016, CERN		11:20 - 11:40
Development status of GANIL ion source GISELE		José Luis MORALES
20-7-2016, CERN		11:40 - 12:10
Lunch		
CERN		12:10 - 12:40
Photocathodes for high brightness electron beams		Dr. Daniele BERTORE
20-7-2016, CERN		14:00 - 14:40
Photoinjector activities at CERN		Dr. Christoph HESSLER
20-7-2016, CERN		14:40 - 15:00
Photocathodes for Rossendorf SRF gun		Dr. Rang XIANG
20-7-2016, CERN		15:00 - 15:30
Coffee Break		
CERN		15:30 - 15:50
InnoLab Lasers and their Applications in Science and Industry		Dr. Ximing DU
20-7-2016, CERN		15:50 - 16:30
Burst mode pulse generation from fiber lasers for accelerator facilities		Prof. A. Omar LODAY
20-7-2016, CERN		16:30 - 16:50
Recent operation and outlook for the ISOLDE Resonance Ionization Laser Ion Source (RILIS)		Dr. Bruce MARSH
20-7-2016, CERN		16:50 - 17:10
A development platform for Ti:Sa lasers		Dr. Sebastian ROTHÉ
20-7-2016, CERN		17:10 - 17:30
Laboratory Visits		

URL: (http://www.)**la3net.eu**



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Vacancies

APPLICATION DEADLINE:  
February 28<sup>th</sup> 2013


News  
16/02/2013

LA<sup>3</sup>NET



HZDR

The exploitation of **LA**sers for **A**pplications at **A**ccelerator facilities for ion beam generation, acceleration and diagnostics is the goal of the new **NET**work (**LA<sup>3</sup>NET**) within the FP7 Marie Curie Initial Training Network (ITN) scheme.




Upcoming Events

February 20<sup>th</sup>-22<sup>nd</sup> 2013  
1st LA<sup>3</sup>NET Topical Workshop on Laser Based Particle Sources ([1TW](#))

March 4<sup>th</sup> - 8<sup>th</sup> 2013  
EU Science: Global Challenges, Global Collaboration ([ES:GC2](#))

March 14<sup>th</sup>-15<sup>th</sup> 2013  
'Pushing the ELBE CW RF-system to high average beam current' [workshop](#)



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## LA<sup>3</sup>NET Prize

- A lump sum of 1 k€ to a scientist in the first five years of his/her career.
- Awarded annually.

**Deadline** for nominations: **30.6.2013**



# Final Remarks

Collaboration and knowledge exchange key to  
research success !

Network. Discuss with other participants !

# Enjoy this event !