

WORKPACKAGE

WP5: Outreach & dissemination

Coordinators: MUST-EYESTvzw

Period: Start Month 3 – End Month 48

The main objectives of the outreach and dissemination WP is to ensure a high visibility of the Actions and of the network's activities.

The activities will include dissemination through publications in scientific journals and an international workshop at the end of the network. The outreach activities aim at increasing the interest of the general public on the network's activities through the implementation of a website and thanks to the MUST webpage.

Finally we aim at raising the curiosity of secondary school students in the field of Photonics through the Photonics Explorer Kit.

DETAILS AND SUB WORKPACKAGES

WP5 consist of four sub-workpackages:

WP 5.1: Web presence and MUST communication tools

Website MEDEA by a professional webmaster.
Training on communication skills during Winter School by MUST.
MUST dissemination articles.

WP 5.2: Photonics Explorer kit

Training for ESRs on outreach activities with the PE kit during winter and summer school by EYEST.
ESRs give workshops for teachers and students.

WP 5.3: Impact and evaluation of the outreach activities

Analysing the impact based on the filled in feedback forms by EYEST.

WP 5.4: Dissemination of the research results

Dissemination of scientific content on the website.

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.1: Web presence and MUST communication tools

Webpage MEDEA: <http://www.medeia-horizon2020.eu/>

Webpage on the MUST website:
<http://www.museoscienza.org/museo/progetti/>

MUST booklet for Teachers – Il museo per scuola:
<http://www.museoscienza.org/scuole/download/guida2015primaria-secondaria.pdf>

Spoke magazine, September 2016 #22, *The researcher as communicator: Competitor or ally?* By S. Calcagnini & M. Xanthoudaky:
<http://www.ecsite.eu/activities-and-services/news-and-publications/digital-spokes/issue-22>

Meet me Tonight 2016, European Researchers Night 2016, Milan MUST, 30/09/2016, session *La scienza si racconta*

Conference Responsible research and Innovation, *opportunity or challenge for the scientific community? Session Opportunities and challenges for Researches*, 26/05/2016, CNR Milan

RRI tools Workshop, Session Public Engagement and Science Education, MUST 10/11/2016



Cover of the MUST booklet for Teachers.



Meet me tonight 2016, European Researchers Night

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.2: Photonics Explorer kit

Training ESRs how to train teachers and students with the PE kit.

Winter School Milan January 2016

Summer School Crete October 2016

66 Photonics Explorer kits distributed to ESRs within the MEDEA project.

Training teachers by ESRs:

So far there were about 20 teachers and 516 students trained by an ESR.



Johny Melby training the teacher.



Mikayel Mushegyan with teachers.

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.2: Photonics Explorer kit

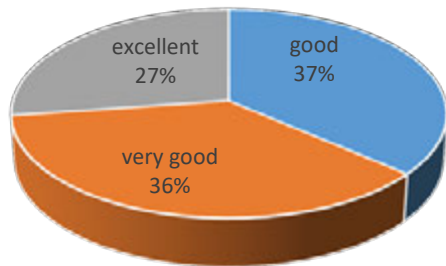
ESR	Host Institut	Secondary School		Students					
		School	City /State	Age	Num. of Students	Female	Male	Number of days	Number of events
Melby Johny	DESY	Carl Von Ossietzky Gymnasium	Hamburg		17	-	-	2	2
		Internartional School of Hamburg	Hamburg Germany		51	-	-	2	2
James Pickering	AU	Aarhus Statsgymnasium	Aarhus Denmark		24	-	-	2	2
Qingli Jing	AU								
Anna Golinelli	AMPL	Lycée Kléber	Strasbourg France	16/17	34	8	26	2	3
Michele Natile	AMPL			14/15	35	10	25		
Christina Alexandridi	CEA			17/18	32	6	26		
Michele Natile	AMPL	Liceo GB Vico	Laterza (TA) Italy	14-18	200	-	-	2	10
Mikayel Musheghyan	FEMTO	De La Salle School	Vienna Austria	14/15	25	8	17	1	1
		Europäische Mittelschule	Vienna Austria	13/14	22	10	12	2	2
		Science Pool Vienna	Vienna Austria	13/14	22	13	9	1	1
Matteo Moioli	FREIB	Istituto Ernesto Breda	Sesto San Giovanni (Milan) Italy		22	2	24	2	2
Aditya Pusala	POLIMI			J.Monnet	Mariano Comense (Como) Italy	18/19	32	8	24
TOTAL STUDENTS REACHED					516	65	171	19	28

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

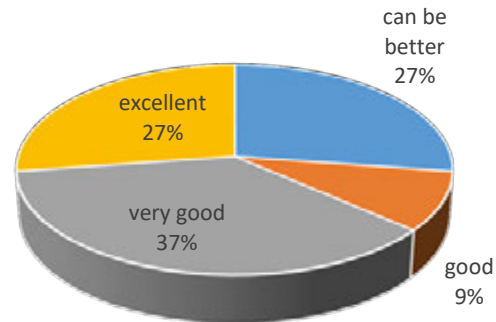
WP 5.3: Impact and evaluation of the outreach activities

Feedback teacher about teacher training by ESRs

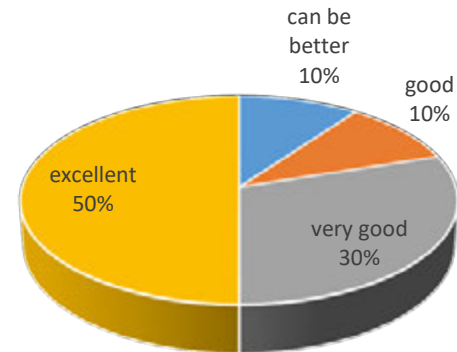
Agenda of the workshop



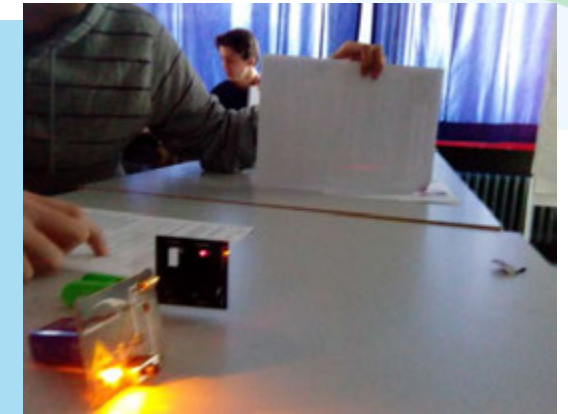
Presentation



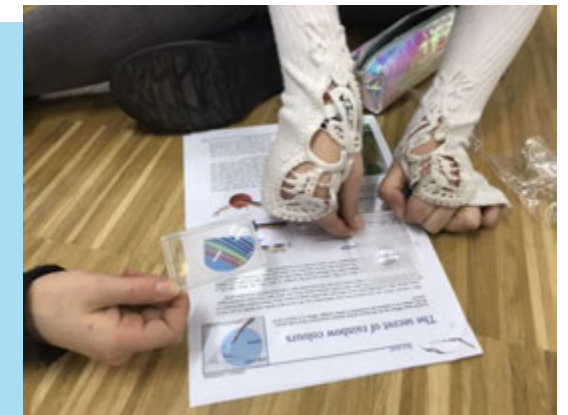
Practical exercise



«Cool idea. Offers great new ways for students to explore this field of Physics. This workshop allow students to understand a very complex matter with the help of several hands-on experiments.»



Experiment on interference.

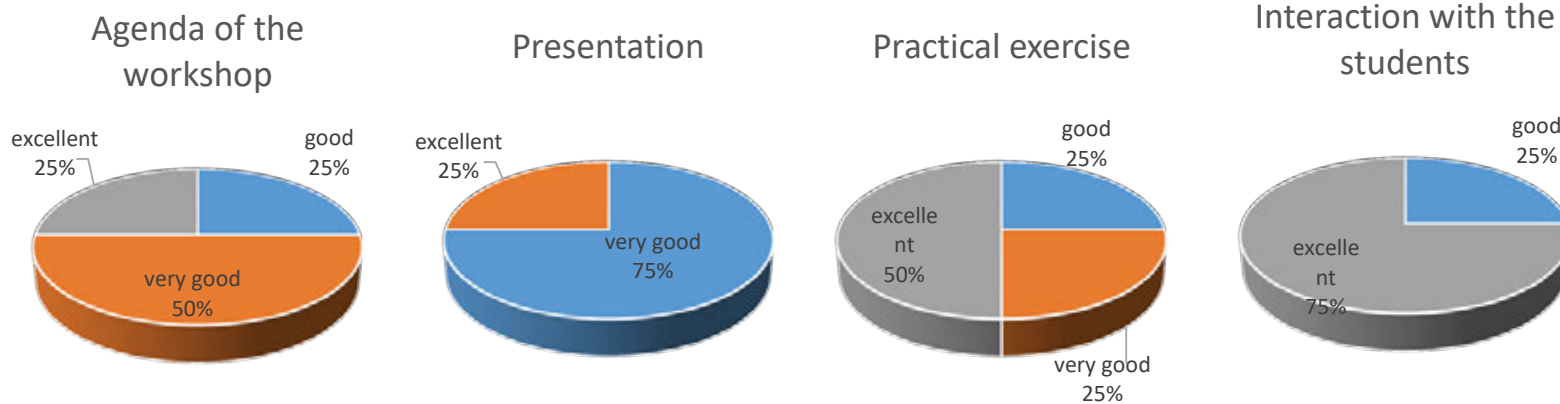


Experiment with lenses.

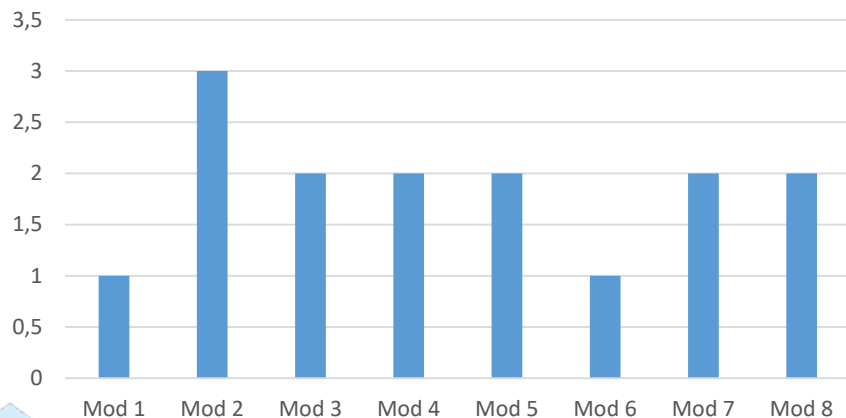
SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.3: Impact and evaluation of the outreach activities

Feedback teacher about teacher students by ESRs



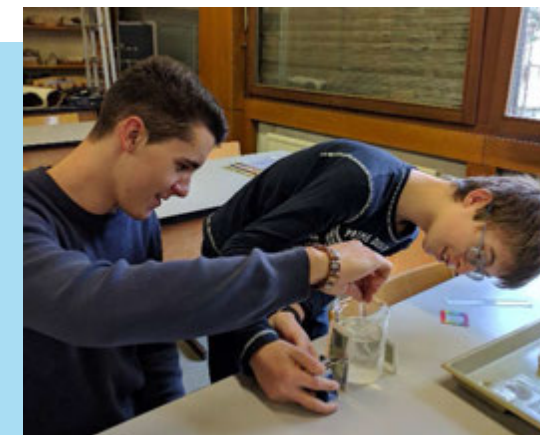
Which module did the ESR use?



The children loved it. One statement: "What? We've worked for 4 hours? Wow... time went by so quickly." or "Can we do that again?"



Looking through a diffraction grating.



Experiment with polarisation.

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

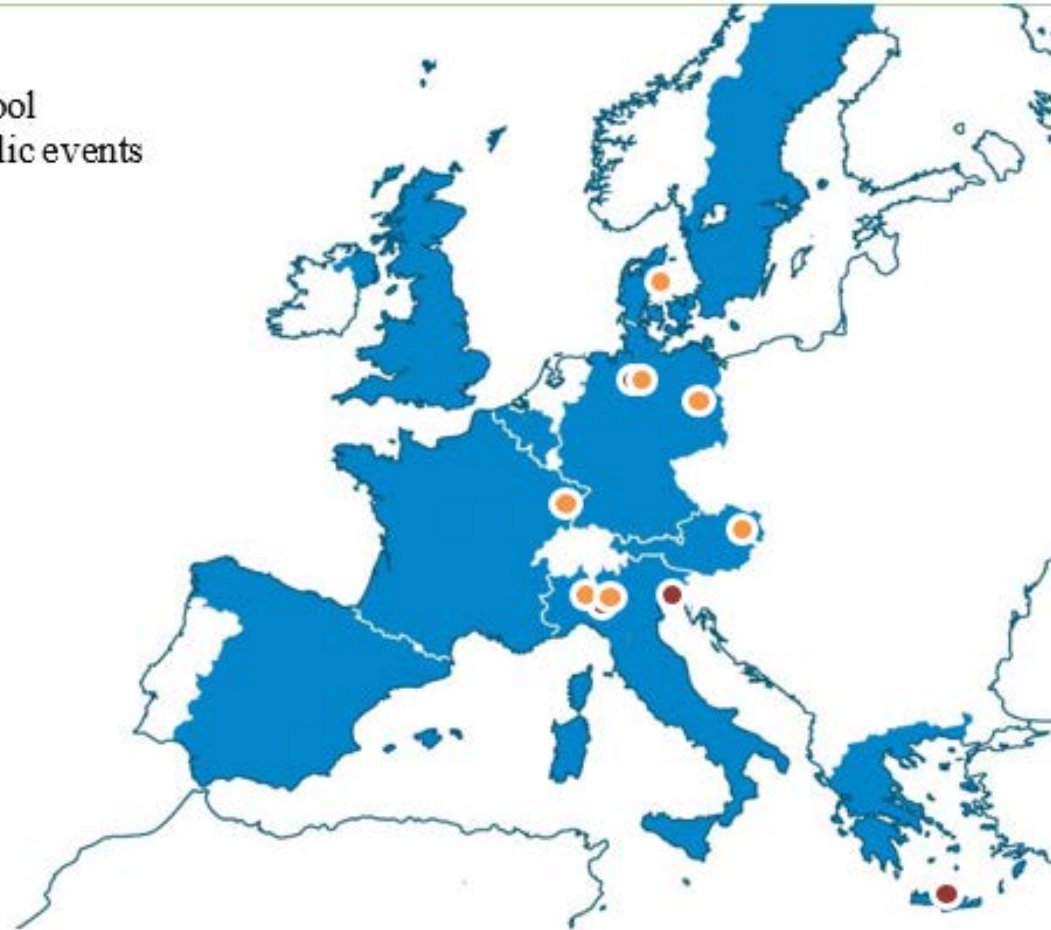
Outreach activities performed by the ESRs in public events

Name	Host	City	State	Date	Description
Aditya Pusala	POLIMI	Milan	Italy	Sep 2016	MeetMeTonight 2016 - Researcher's night
Andres Ordonez	FVB/MBI	Berlin	Germany	Sep 2016	Science Slam - Presentation at MBI-B division workshop in Rathen
Melby Johny	DESY	Hamburg	Germany	Nov 2015	Hamburg Night of Knowledge
		Hamburg	Germany		DESY Open Day
		Hamburg	Germany		DESY Science Days
Ioannis Makos	FORTH	Crete	Greece	Sep 2016	Researcher's night - CRETE
Mikayel Musheghyan	FEMTO	Venice	Italy	Mar 2016	Marie-Curie Alumni Association (MCAA) Event

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

Geographic distribution of the outreach activities

- Outreach at school
- Outreach in public events



SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.4: Dissemination of the research results

Type of scientific publication	Title of the scientific publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number, date	Place of publication	Year of publication	Beneficiary
Article in Journal	Multidimensional high harmonic spectroscopy of polyatomic molecules: detecting sub-cycle laser-driven hole dynamics upon ionization in strong mid-IR laser fields	10.1039/C6FD00130K	ISSN 1359-6640	Barry D. Bruner, Zdeněk Mašín, Matteo Negro, Felipe Morales, Danilo Brambilla, Ichele Devetta, Davide Faccialà, Alex G. Harvey, Misha Ivanov, Yann Mairesse, Serguei Patchkovskii, Valeria Serbinenko, Hadas Soifer, Salvatore Stagira, Caterina Vozzi, Nirit Dudovich and Olga Smirnova	Faraday Discuss., Gold open access	First published online 26 Sep 2016, 20 pages	UK	2016	MBI
Article in Journal	Close to transform-limited, few-cycle 12 μ J pulses at 400 kHz for applications in ultrafast spectroscopy	10.1364/OE.24.019293	ISSN: 1094-4087	Federico J. Furch, Achut Giree, Felipe Morales, Alexandria Anderson, Yicheng Wang, Claus Peter Schulz, and Marc J. Vrakking	Optics Express Gold Open Access	Vol. 24, Issue 17, pp. 19293-19310 (2016)	OSA, USA	2016	MBI
Article in Journal	Spectral phase measurement of a Fano resonance using tunable attosecond pulses	10.1038/ncomms10566		M. Kotur, D. Guénot, Á Jiménez-Galán, D. Kroon, E. W. Larsen, M. Louisy, S. Bengtsson, M. Miranda, J. Mauritsson, C. L. Arnold, S. E. Canton, M. Gisselbrecht, T. Carette, J. M. Dahlström, E. Lindroth, A. Maquet, L. Argenti, F. Martín & A. L'Huillier	Nature Communications, Green Open Access	7, 10566 pages		2016	LUND

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.4: Dissemination of the research results

Type of scientific publication	Title of the scientific publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number, date	Place of publication	Year of publication	Beneficiary
Article in Journal	Scale-invariant nonlinear optics in gases	10.1364/OPTICA.3.000075		C. M. Heyl, H. Coudert-Alteirac, M. Miranda, M. Louisy, K. Kovacs, V. Tosa, E. Balogh, K. Varjú, A. L'Huillier, A. Couairon, and C. L. Arnold	Optica, Green Open Access	3, 3 pages		2016	LUND
Article in Journal	Design and test of a broadband split-and-delay unit for attosecond XUV-XUV pump-probe experiments	10.1063/1.4941722		F. Campi, H. Coudert-Alteirac, M. Miranda, L. Rading, B. Manschwetus, P. Rudawski, A. L'Huillier, and P. Johnsson	Review of Scientific Instruments, Green Open Acces	87, 023106 pages		2016	LUND
Article in Journal	Two-photon double ionization of neon using an intense attosecond pulse train	10.1103/PhysRevA.93.061402		B. Manschwetus, L. Rading, F. Campi, S. Maclot, H. Coudert-Alteirac, J. Lahl, H. Wikmark, P. Rudawski, C. M. Heyl, B. Farkas, T. Mohamed, A. L'Huillier, and P. Johnsson	Physical Review A, Green Open Access	93, 061402(R) pages		2016	LUND
Article in Journal	Attosecond dynamics through a Fano resonance: monitoring the birth of a photoelectron	10.1126/science.aah5188		V. Gruson, L. Barreau, À. Jiménez-Galan, F. Risoud, J. Caillat, A. Maquet, B. Carré, F. Lepetit, J-F. Hergott, T. Ruchon, L. Argenti, R. Taïeb, F. Martin and P. Salières	Science, Green Open Access	VOL 354 ISSUE 6313, 11 november 2016, pages 734-738	USA	2016	CEA

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.4: Dissemination of the research results

Type of scientific publication	Title of the scientific publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number, date	Place of publication	Year of publication	Beneficiary
Article in Journal	Complete characterization of the polarization state of the harmonic emission from bicircular counter-rotating ω and 2ω fields			V. Gruson, K. Veyrinas, L. Barreau, S. J. Weber, T. Ruchon, J.-F. Hergott, B. Carré, J.-C. Houver, D. Dowek, and P. Salières	Submitted, Green Open Access			Submitted in 2016	CEA
Article in Journal	Laser-induced distortion of structural interferences in high harmonic generation			Francois Risoud, Camille Leveque, Marie Labeye, Jeremie Caillat, Alfred Maquet, Pascal Salieres, Richard Taieb, and Tahir Shaaran	Submitted, Green Open Access			Submitted in 2016	CEA
Article in Journal	Coherent control with a short-wavelength free-electron laser	10.1038/nphoton.2016.13	17494885	K. C. Prince, E. Allaria, C. Callegari, R. Cucini, G. De Ninno, S. Di Mitri, B. Diviacco, E. Ferrari, P. Finetti, D. Gauthier, L. Giannessi, N. Mahne, G. Penco, O. Plekan, L. Raimondi, P. Rebernik, E. Roussel, C. Svetina, M. Trovò, M. Zangrando, M. Negro, P. Carpeggiani, M. Reduzzi, G. Sansone, A. N. Grum-Grzhimailo, E. V. Gryzlova, S. I. Strakhova, K. Bartschat, N. Douguet, J. Venzke, D. Iablonskyi, Y. Kumagai, T. Takanashi, K. Ueda, A. Fischer, M. Coreno, F. Stienkemeier, Y. Ovcharenko, T. Mazza, M. Meyer	Nature Photonics*	10/3	United Kingdom	2016	POLIMI

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

WP 5.4: Dissemination of the research results

Type of scientific publication	Title of the scientific publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number, date	Place of publication	Year of publication	Beneficiary
Article in Journal	Observation of autoionization dynamics and sub-cycle quantum beating in electronic molecular wave packets	10.1088/0953-4075/49/6/065102	09534075	M Reduzzi, W-C Chu, C Feng, A Dubrouil, J Hummert, F Calegari, F Frassetto, L Poletto, O Kornilov, M Nisoli, C-D Lin, G Sansone	Journal of Physics B: Atomic, Molecular and Optical Physics*	49/6	United Kingdom	2016	POLIMI
Article in Journal	Ionization delays in few-cycle-pulse multiphoton quantum-beat spectroscopy in helium	10.1103/PhysRevA.93.023420	24699926	Renate Pazourek, Maurizio Reduzzi, Paolo A. Carpeggiani, Giuseppe Sansone, Mette Gaarde, Kenneth Schafer	Physical Review A*	93/2	USA	2016	POLIMI
Article in Journal	Polarization control of absorption of virtual dressed states in helium	10.1103/PhysRevA.92.033408	10941622	Maurizio Reduzzi, Johan Hummert, Antoine Dubrouil, Francesca Calegari, Mauro Nisoli, Fabio Frassetto, Luca Poletto, Shaohao Chen, Mengxi Wu, Mette B. Gaarde, Kenneth Schafer, Giuseppe Sansone	Physical Review A*	92/3	USA	2016	POLIMI

SCIENTIFIC ACTIVITIES AND GOALS IN PROGRESS

This first year, the outreach activities had an impact lower than expected due to the delay in the completion of the recruitment process.

Eventually the ESRs managed to do outreach to about 516 students. That number is only 184 less than expected.

We will take special actions in the year 2017 and 2018 to reach more than 2000 students.