



Norwegian University of Science and Technology


Erfaringer med virkemidler for mobilitet på institusjonsnivå:
Erfaringer med MSCA-DN og påvirkningen på kvalitet i
doktorgradsutdanningen

My experiences coordinating 3 MSCA ITN projects

Professor Jon Yngve Hardeberg
Department of Computer Science
NTNU, Gjøvik





1



Outline

- About the MSCA ITN/DN programme and its core principles
- About my 3 projects: CP7.0, CHANGE, and ApPEARS
- Experiences with internationalization and mobility for the PhD education
- Some advice
- Q&A


2

Marie Skłodowska-Curie Actions

- Pillar 1 in Horizon Europe
- EU's reference programme for doctoral education and postdoctoral training
- <https://marie-skłodowska-curie-actions.ec.europa.eu/>
- Doctoral Networks (DN)
 - Previously called Innovative Training Networks (ITN)
 - Funds 10-15 Doctoral Candidates and associated costs for management, training, networking
 - Variants: Industrial Doctorates and Joint Doctorates


3



MSCA-DN Core principles

- Excellence in research and researcher training
- Inter-disciplinary, inter-national, inter-sectorial collaboration and co-supervision
- Mobility
 - Incoming mobility
 - Secondments
- Bottom-up definition of research area
- Predictability of recurring calls
 - Next deadline: 15 November 2022
- Very low acceptance rate...


4



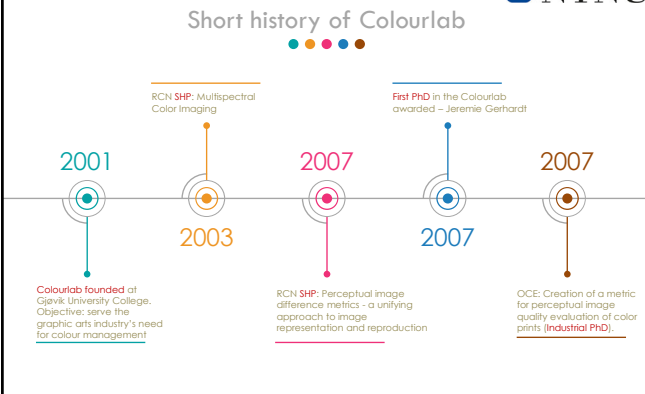
Outline

- About the MSCA ITN/DN programme and its core principles
- **About my 3 projects: CP7.0, CHANGE, and ApPEARS**
- Experiences with internationalization and mobility for the PhD education
- Some advice
- Q&A

5



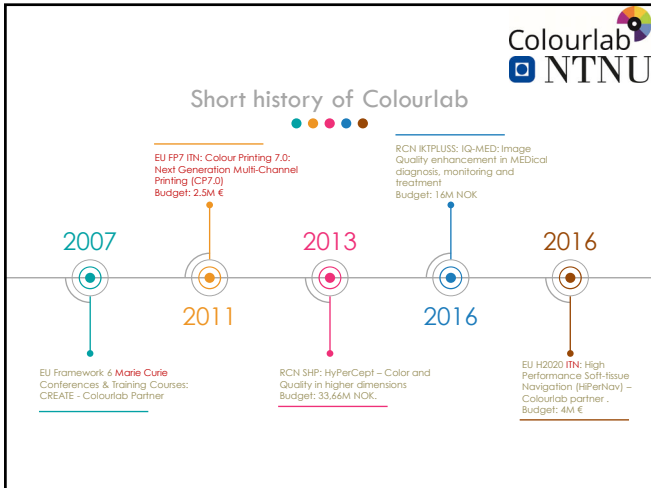
Short history of Colourlab



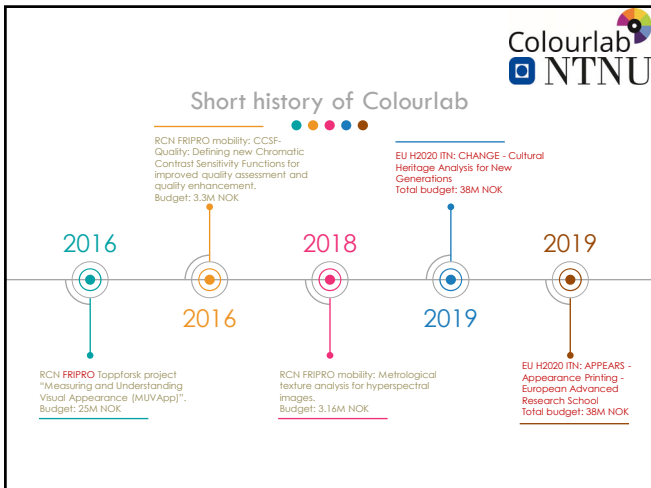
The timeline shows five key milestones:

- 2001:** Colourlab founded at Gjøvik University College. Objective: serve the graphic arts industry's need for colour management.
- 2003:** RCN SHP: Multispectral Color Imaging.
- 2007:** RCN SHP: Perceptual image difference metrics - a unifying approach to image representation and reproduction.
- 2007:** First PhD in the Colourlab awarded - Jeremie Gethardt.
- 2007:** OCE: Creation of a metric for perceptual image quality evaluation of color prints (Industrial PhD).

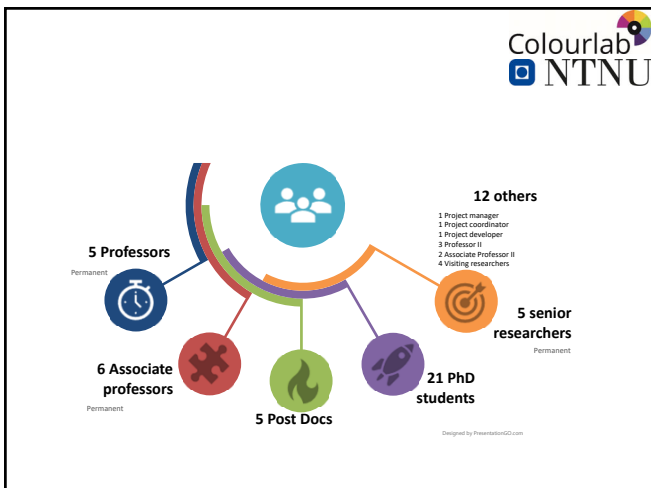
6




7



8

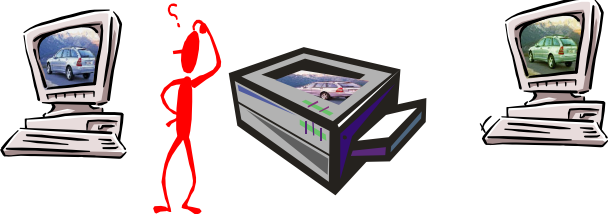


9



The Colourlab's core research question:

- How to achieve **consistent** and **high quality** colour image reproduction in different media?



10







Colour imaging

Research Areas


11





Project: Colour Printing 7.0: Next Generation Multi-Channel Printing

- 4 year training and research project (2011-2015)
 - ITN - Initial Training Network, EU FP7, Marie Curie Actions
 - Network of European universities, research institutes, and companies
 - Coordinated by Gjøvik University College, Prof. J. Y. Hardeberg
 - <http://www.cp70.org>
- Funding of
 - 7 PhD students and 2 postdocs
 - Research and training activities
 - Appx 2.16 MEUR, 17 MNOK from the EU
- A breakthrough for the Colourlab (and GUC)
 - «Høgskoleforskning i verdensklasse» (Forskerforum 10.4.12)
 - «Ikke hverdagskost» (OA, 11.12.12)



12

CHANGE
CULTURAL HERITAGE ANALYSIS
FOR NEW GENERATIONS
<http://www.change-itn.eu>

Before and after cleaning of a tapestry, Source: Pieter van
Before and after cleaning of an alabaster, courtesy of University of Oslo.

16

CHANGE - Overview

- EU Funded Marie Skłodowska-Curie Action
 - Initial Training Network (ITN)
- 4 year project started in May 2019
 - 4 MEUR funding
- Co-ordinated by NTNU
 - Co-ordinator: Jon Yngve Hardeberg (jon.hardeberg@ntnu.no)
 - Deputy co-ordinator: Sony George (sony.george@ntnu.no)
- 20 partner institutions throughout Europe
- 15 PhD students/Early Stage Researchers
- Main scientific objective
 - To develop and apply imaging based methodologies to assess and monitor any change to which cultural heritage artifacts are faced during their exposure to the atmosphere and their conservation treatments
- Interdisciplinary approach
 - Conservation science
 - Imaging science
 - Visual computing

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement 832789

17

CHANGE – Beneficiaries

NTNU
Kunnskap for en bedre verdter

Hes·SO
Haute Ecole Spécialisée de Suisse occidentale
Fachhochschule Westschweiz
University of Applied Sciences and Arts
Western Switzerland

Cyprus University of Technology

CENTRE DE RECHERCHE ET DE RESTAURATION DES MUSÉES DE FRANCE

UBFC
UNIVERSITÉ BOURGOGNE-FRANCHE-COMTE

UNIVERSITEIT VAN AMSTERDAM

SCHWEIZERISCHES NATIONALMUSEUM
MUSEO NAZIONALE SVIZZERO. MU
SEU NAZIONALE SVIZZERO. MUSEU
N NAZIONALE SVIZZERO.

18



CHANCE
CULTURAL HERITAGE ANALYSIS
FOR NEW GENERATIONS




ApPEARS

APPEARANCE PRINTING
European Advanced Research School

<http://www.appears-itn.eu>




25



Outline

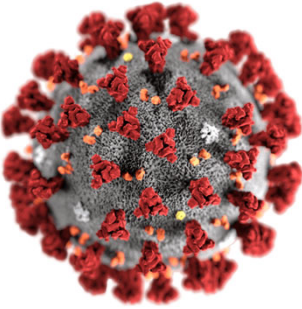
- About the MSCA ITN/DN programme and its core principles
- About my 3 projects: CP7.0, CHANGE, and ApPEARS
- Experiences with internationalization and mobility for the PhD education
- Some advice
- Q&A

26



Mobilities in CHANGE & ApPEARS

- Training Events
- Secondments
-



27

Mobilities in CHANGE & ApPEARS

- Training Events
 - 4-5 planned at different locations
 - Physical and virtual events
 - Students appreciate the social and scientific outcome
 - Strong network within and beyond the projects



28

Mobilities in CHANGE & ApPEARS

- Secondments
 - All PhD students had one or more secondments planned
 - Typically 3-10 months
 - Many changed plans, some secondments turned virtual because of COVID
 - Revisions to align with changing PhD plans, focus on usefulness for the PhD
 - Breaking up into short visit and longer stay sometimes beneficial
 - Overall very good experiences



Photo: Jan and Silvia working on the processing of the data during Jan's secondment at HE-Arc CR in Neuchâtel (Switzerland).

29



Photos above and below: The CHANGE-ITN ESRs in different moments in Neuchâtel, Zürich (Switzerland) and Dijon (France).

30




Other mobility activities

- Incoming PhD mobility is the norm
- Mobility as a natural component in any proposal
 - And ideally in every PhD project
- Ongoing Colourlab INTPART Projects
 - MANER – Material Appearance Network for Education and Research
 - CapsNetwork – International Network for Capsule Imaging in Endoscopy




31



Outline


- About the MSCA ITN/DN programme and its core principles
- About my 3 projects: CP7.0, CHANGE, and ApPEARS
- Experiences with internationalization and mobility for the PhD education
- **Some advice**
- Q&A

32




Advice

- Work internationally over time, build your network
 - Interdisciplinarity is key – don't just go after those who are copies of yourself
- ITN/DN is a great project type
 - Bottom up topic definition
 - Focus on researcher training
 - Mobility
 - But hard to get
- NTNU specific(?):
 - Use our unique possibility for PES/POS support
 - Use our Brussels facilities for networking and project preparation meetings




33




Advice

- Don't do it alone!
 - Involve yur local research group
 - Get/use administrative support for management, financial, legal parts
 - Consider hiring external consultants for review
 - Partners must contribute – but expect to bear the responsibility and do most of the work if you coordinate
- Also for running the project - take the help you can get!
 - We redefined the budgets to be able to hire a project manager: Anneli




34

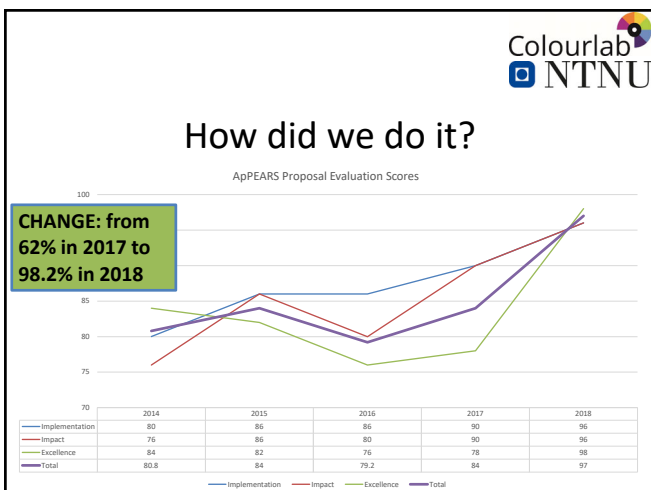


Advice


- Try, try, and try again!
- Improve next year based on feedback in evaluation
 - First ITN success story at Gjøvik University College: CP7.0:
 - 44.8% in 2010,
 - 94.2% and accepted in 2011
- Not always predictable, though; different reviewers every year



35



36



The Norwegian
Colour and Visual Computing
Laboratory

Thank you for your attention!

<http://www.change-itn.eu>
<http://www.appears-itn.eu>
Check out our newsletters!

Contact information:
Jon Y. Hardeberg
Office: A210
E-mail: jon.hardeberg@ntnu.no
Web: www.colourlab.no
Phone: (+47) 982 16 899
