



SGROUP
EUROPEAN
UNIVERSITIES'
NETWORK

GENERAL ASSEMBLY
AND LIAISON OFFICERS MEETING
7-8 NOVEMBER 2014
UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Developing Entrepreneurial Universities for a Sustainable Future

BUILDING TRANSATLANTIC COLLABORATION FOR EXCELLENCE IN DOCTORAL EDUCATION:

TEE Consortium



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Education and Culture DG

UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

ERASMUS MUNDUS

Erasmus Mundus TEE



■ Program Name

- ✓ Transatlantic Excellence in Engineering (TEE)
- ✓ Funded by EU (1m €, over 48 months)

■ Program Goals

- ✓ Develop collaborative doctoral education between EU and N America
- ✓ Create a network between European, US and Canadian HEIs
- ✓ Promote global research culture
- ✓ Enable researchers to gain global experience (post-docs, faculty)
- ✓ Provide doctoral students transatlantic research experiences
- ✓ Establish ongoing linkages

■ Program Modality

- ✓ Six EU (Cambridge, UPSUD, Ghent, Rome "la Sapienza", TUBerlin, UPV), five US/Canada universities (UPenn, UC Davis, NCSU, UBC, McGill)
- ✓ Mobility periods 6 months (PhD, 10 months (PhD and post-doc), 1 month (faculty)
- ✓ Funded for full period of mobility
- ✓ Application based; awardees selected by committee
- ✓ Applicants propose research topic/project, with support from home and host institutions

Participation

■ # of Participants

Type of mobility	From US	From CANADA	From EU	TOTAL
Doctorate (6 months)	6	6	27	39
Doctorate (10 months)	0	1	5	6
Doctorate (25 months)	0	0	2	2
Post-doctorate	0	0	9	9
Faculty	6	3	13	22
TOTAL	12	10	56	78

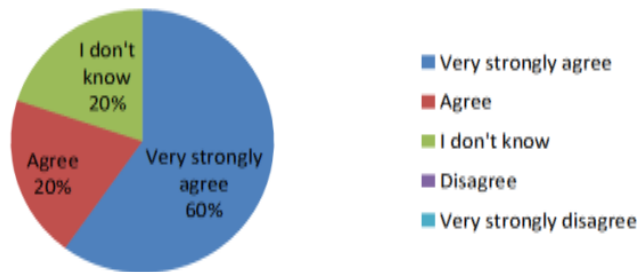
■ By Gender

	Female	%	Male	%	Total
US applicants	4	14%	25	86%	29
US awardees	4	18%	18	82%	22
% awarded	100%		72%		
EU applicants	39	31%	85	69%	124
EU awardees	15	27%	41	73%	56
% awarded	38%		48%		



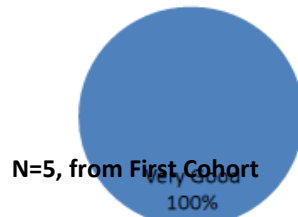
Participant feedback

Future career prospects enhancement (Q.19)



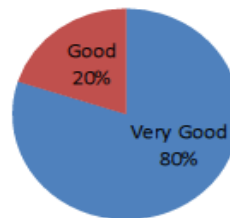
General satisfaction regarding personal experience (Q.22)

■ Very Good ■ Good ■ Average ■ Bad ■ Very E

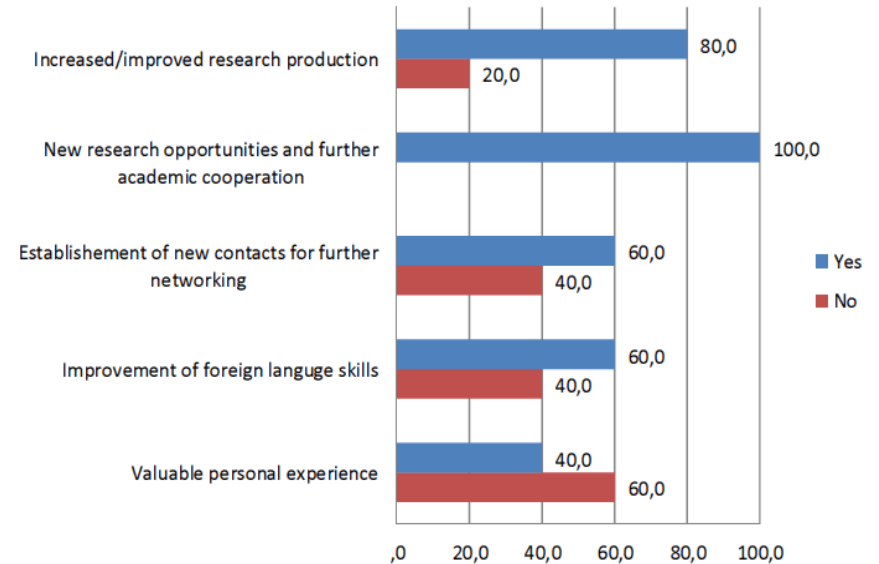


General satisfaction regarding academic/research activity (Q.21)

■ Very Good ■ Good ■ Average ■ Bad ■ Very Bad



Contribution to professional or personal development (Q.20)



Suggestions by awardees

- Research stay most enriching for thesis
- Lack of coordination on research plan
- Need for co-supervision
- Fees and grants not evenly treated
- Chance for joint R+D projects
- Should include summer courses
- Very different administrative procedures
- Opportunity for industrial involvement



Specific outputs

- 7 Q1 indexed papers, 18 conference presentations
- 3 co-tutelled thesis
- 2 joint R+D project proposals
- White paper on doctoral education
- Draft agreement for Joint Programs
- Focused R+D topics/groups
- Transatlantic R+D workshop
- PoliMUNDUS network
- Industrial involvement on R+D
- Geoset initiative
- Presentations on: NAFSA, ASEE, EAIE and now SG



Joint Doctoral programmes

- Common to most programs:
 - High level, original R+D work demonstrating proficiency for autonomous research
 - Requirements: Course credits + JCR papers + conference presentations + Thesis
 - Independent expert pre-evaluation of thesis
 - 3 to 5 years maximum
- Differences:
 - Requirements for acceptance
 - Course load during PhD
 - Funding/status of candidates in the doctoral program
 - Previous exam before thesis (research sufficiency)
 - Dissertation evaluation Committees (and procedure)
 - Accreditation of programs
 - Fees
- Opportunity for industrial/joint PhD programs:
 - Attractive to candidates for future labour market success
 - Connecting Doctoral programs to society needs
 - Better academic results with fewer resources
- Important role for Doctoral Schools
- Attractive to developing regions



Transatlantic R+D Workshop

- Coming in November for transatlantic R+D collaboration
- Opportunity for enhancing EU-US-Canada funding efficiency
- Co-funding of doctoral programs facing societal challenges



National Science Foundation
WHERE DISCOVERIES BEGIN

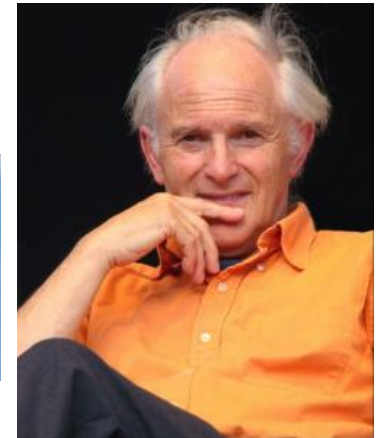
Mitacs

*Inspiring innovation
Inspirer l'innovation*



Geoset initiative

- Open, collaborative, on line science communication
- Basic agreement for web sharing of:
 - Creative communication for making science popular
 - Academic sharing of concepts (nuggets) for reuse (course build up?)
 - Personal promotion (mmCV)
 - Scientific papers
- Working on indexing and evaluation ...



Lessons learnt

- Larger pool of US/Canadian candidates was limited by nationality (per eligibility requirement fixed by the EU), due to high number of foreign nationals at US/Canadian universities
- US/Canadian doctoral student participation was limited to 6 months maximum stays
 - Longer mobilities met with high resistance from supervisors
 - Existence of joint research projects may facilitate longer mobilities
- “Academic fees” sometimes problematic in US/Canada
 - “Visiting researcher” fees
 - Exchange agreements needed at some universities
- Structured cooperation highly desired to better coordinate mobility research plans
- Recruitment relied on personal links and cooperation of researchers
- Project helped create an effective, standardized approach for this sort of mobility initiative



Looking to the future of doctoral education...

- Fight for best students...
- Funding, funding, funding ... leads to alignment
- Academic + Scientific + Social relevance
- Prestige



What are they for?

- Central coordination for unified:
 - Admissions / candidate services
 - Administrative procedures / reporting
 - Certification and diploma issuing
 - Post-graduates
 - Joint degrees / cotutelles
- Branding and marketing
 - Visibility for rankings
 - Providing services for prospective candidates
- Industrial research connection: for funding and job placement
- Funding: based on programs, projects or grants
- Academic (summer) programs
- Internationalisation
- Quality assurance (accreditation)



TEE proves that Doctoral Schools could...

- Provide candidate profiling
- Develop basic agreements:
 - Within the University
 - Doctoral programs support...
 - ... and promotion
- Promote University doctoral programs
- Implement accreditation policy
- Support Job placement



Candidates profiling

- Excellent academic background
- Language (english) proficiency
- Funding plan
- Mandatory work contract
- Research profile
- Career design
- Research-plan with milestone checking



Basic agreements

- Integration with R+D activities within the University
- Per country admission requirements:
 - Selecting target areas
 - Evaluating candidates profiles
- With Granting programs (home or abroad)
 - Attracting high quality candidates
 - And providing funding for them
- For doctoral candidates exchange
 - Research stays
 - Developing research networks
- ... and cotutelles



Doctoral programs promotion



- Country based:
 - with Ministries on target countries (LA, India, China)
 - with Banks and associations
- Within agencies (EC, NSF, MITACS...):
 - Information gathering
 - Institutional awareness
 - Lobbying
 - Coordination
- Industry cooperation
- Internationalisation policy:
 - Joint programs
 - Networking

Accreditation policy

- Prestige based (University rankings)
- National accreditations
- International bodies ?



Job placement

- Industry coordinated research
- Support for “in company” research
- University/Company joint labs
- International mobility
- Entrepreneurship programs



Collaboration strategy

- Initiative to research groups
- Seek interdisciplinary collaboration
- R+D projects aligned with PhD thesis
- Transatlantic networking





facts

- R+D focus areas
based on national/institutional priorities
- Industrial involvement
- Institutional funding
- Poli-MUNDUS network
- Dissemination strategy



R+D focus areas



- Advanced materials & nanotechnology
(3 teams: 2 US/EU, 1 Canada/EU)
- Aerospace engineering
(2 teams Canada/EU)
- Information and Communication technologies
(5 teams: 2 US/EU, 3 Canada/EU)
- Sustainability
(2 teams: 1 US/EU, 1 Canada/EU)
- Bioengineering
(2 teams: 1 US/EU, 1 Canada/EU)

Sustainability track: UBC/Cambridge



- H. Cruickshank visits UBC as staff
- Results: 2 Joint papers at EESD13
- EESD15 arranged to be held at UBC
- UBC-Cambridge sister program at UBC
- UBC PhD student in Cambridge 4 months
- UBC student (winner of the prestigious UBC Applied Science 2014 Outstanding Alumni Award) moves to Cambridge to start Ph.D

Industrial involvement

- As partners in R+D projects
- Strength of existing international network
- Built on existing connections
- Need for complementarity



Institutional funding

To be developed after the TEE R+D workshop in Valencia
Should facilitate access to joint programs with coordinated funding

- Europe: Horizon 2020
(<http://ec.europa.eu/programmes/horizon2020/h2020-sections>)
- US: National Science Foundation
(http://www.nsf.gov/funding/pgm_list.jsp?ord=rcnt&org=NSF)
- Canada: MITACS, NSERC
(<https://www.mitacs.ca/globalink>)
(http://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/index_eng.asp)



Poli-MUNDUS network

- Web tool for seeking research placements
- Summer Doctoral Workshops
- R+D groups institutional support
- Collaboration agreements
- Institutional lobbying
- Information for proposal preparation
- Strategy for regional development



Dissemination strategy



- ASEE conference
- NAFSA San Diego
- EAIE Prague





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