



Erasmus+

“伊拉斯谟 +”： 留学欧洲良机

OPPORTUNITIES
TO STUDY IN EUROPE

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Portugal 葡萄牙



East China Normal University
Shanghai, March 24, 2015

CONTENTS

- ★ What is the “Erasmus +” Programme
- ★ What are the Erasmus Mundus Masters Joint Degrees
- ★ How does it work
- ★ Studentships
- ★ ChIR: MSc in Chemical Innovation and Regulation
- ★ EMQAL: MSc in Quality in Analytical Laboratories

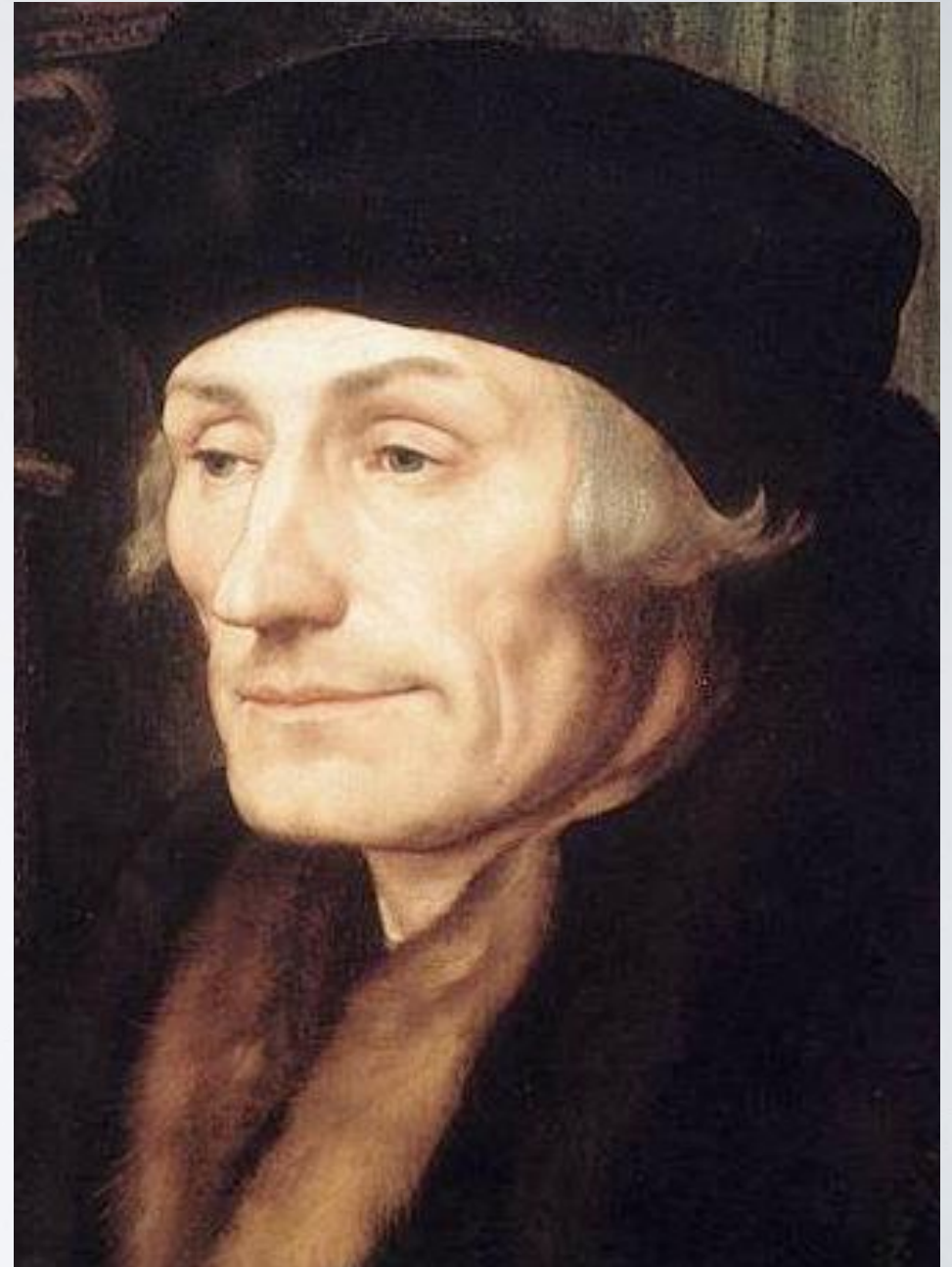
Questions

何谓伊拉斯谟 计划 ?



德西德里乌斯 伊拉斯谟 1466-1536

- ★出生于鹿特丹(荷兰)
- ★曾求学并执教遍布欧洲而富盛名
- ★巴黎大學(法国)
- ★牛津, 剑桥大学(英国)
- ★帕多瓦大学, 罗马大学(意大利)
- ★巴塞爾大學 (瑞士)
- ★鲁汶大学(比利时)



伊拉斯谟计划

始于1987 执行至今



- ★ 提升高等教育
- ★ 促进学生和学者在欧洲范围内的交流
- ★ 成效显著！

“ERASMUS MUNDUS” PROGRAMME

★ 伊拉斯谟计划着有成效

★ 从2004年起， 本计划向欧洲以外推广



+



=



“Mundus”

拉丁语意 “全世界”

伊拉斯谟世界计划



Erasmus
Mundus

何谓伊拉斯谟世界计划？

促进学生和学者跨越欧洲范围的交流



国家之间共同发展



同非欧洲国家合作

ERASMUS MUNDUS BUDGET

2004 - 2008

Erasmus Mundus I

2009 - 2013

Erasmus Mundus II

2013 - 2018

“Erasmus +”

230 Million €

6 181 students
1 121 scholars

950 Million €

10 747 students
4 000+ scholars

19 Billion €

Objectives (overall):

- 2.2 million students
- 1 million lecturers

Objectives:

- (“Erasmus Mundus” grants):
- 34 000 students

ERASMUS MUNDUS MASTER JOINT DEGREES



Erasmus
Mundus

High Quality, Multinational Programmes

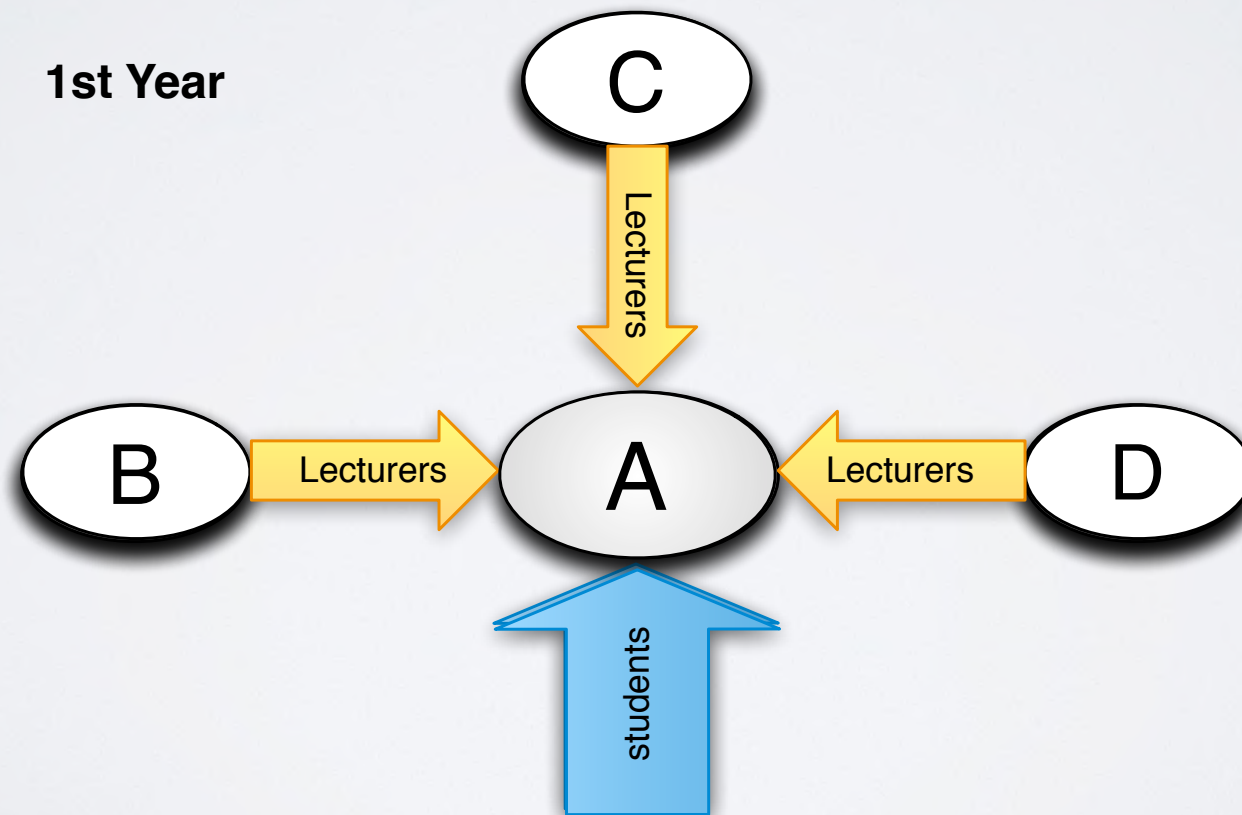
HOW DO *EMMC* WORK?

- ★ 几所不同大学结为合作伙伴
- ★ 学生在一所以上大学流动学习
- ★ 教师在一所以上大学授课

典型示例

Master = 学位必修课程 + 项目和论文

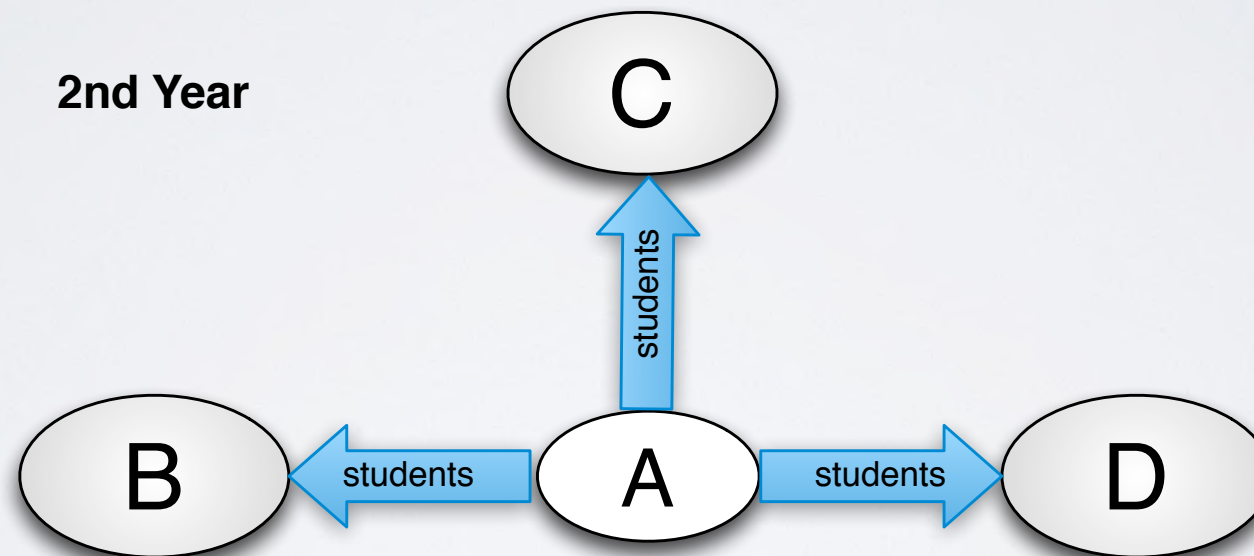
大学合作伙伴: A, B, C, D



典型示例

Master = 学位必修课程 + 项目和论文

大学合作伙伴: A, B, C, D



ERASMUS MUNDUS = MOBILITY

学生和学者的流动性

Student Mobility
Lecturer Mobility

ERASMUS MUNDUS MASTERS



非欧盟学生的奖学金

DURATION AND VALUE OF STUDENTSHIPS

Total for a 2 year course:

€ 49 000 (for Chinese students)

€ 35 000 (for European students)

★ Value of **studentship** includes:

★ tuition fees: 9000€/year

★ travel and installation costs: 7000€
(for Chinese students)

★ monthly allowance: 1000€/month

如何获得助学金？

- ★ 选择一个硕士项目
- ★ 于该硕士项目网站作在线申请
- ★ 被选中（竞争会很激烈！）
- ★ 如被选中，务必参加整个学程

共有哪些硕士项目？

138 master programmes active in different fields, for example:

- ★ **Chemical Innovation and Regulation** - 化学创新与监管
- ★ **Quality in Analytical Laboratories** - 分析实验室品质
- ★ Water and Coastal Management - 水资源和海岸管理
- ★ Ecohydrology - 生态水文学
- ★ Modelling of Physical, Chemical and Bio-molecular Systems
- ★ Astrophysics
- ★ Computer Simulation For Science and engineering
- ★ Nanoscience and Nanotechnology
- ★ Dance Knowledge, Practice and Heritage
- ★ ...

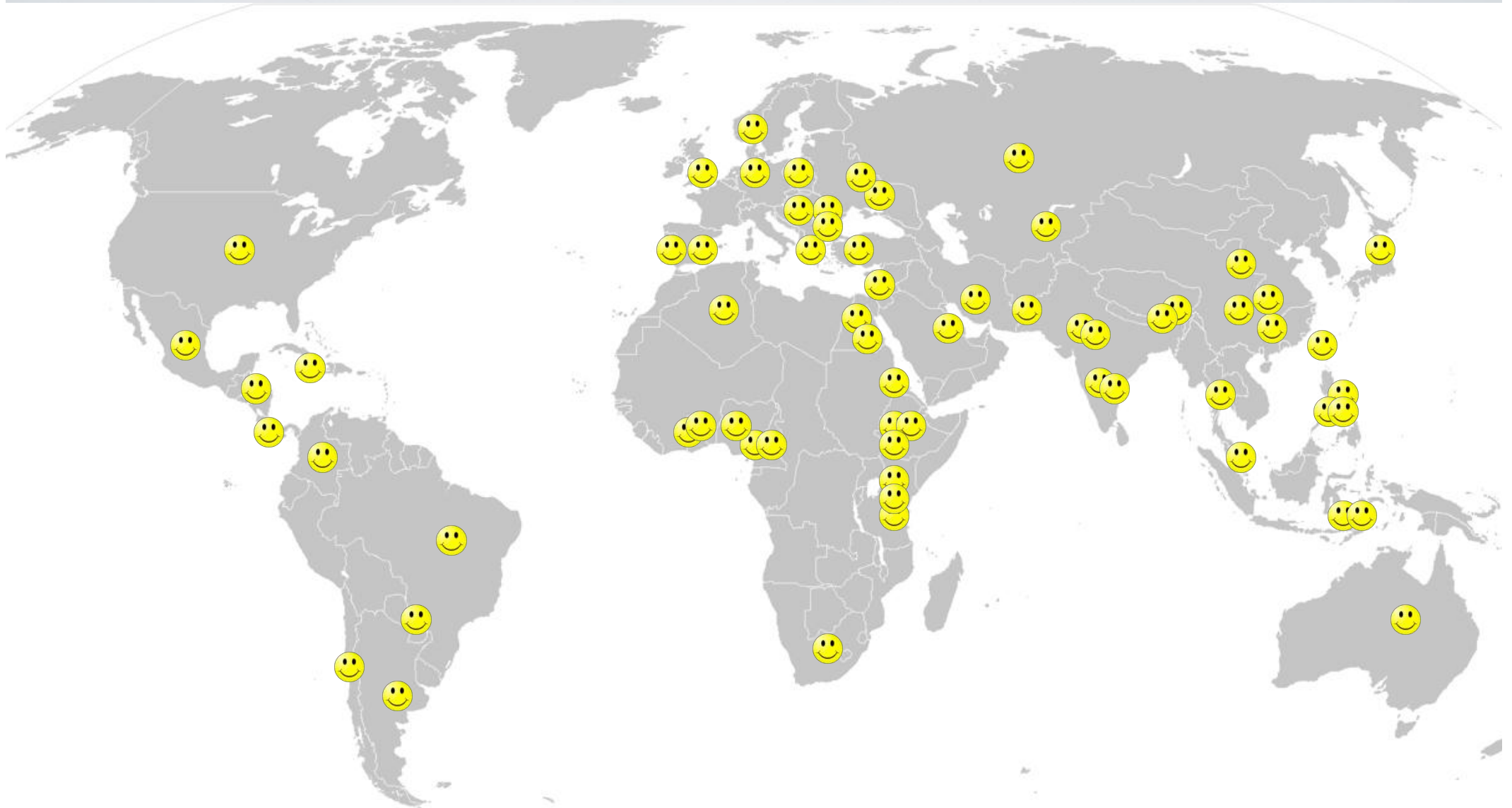
WHY STUDY IN THE ERASMUS MUNDUS?



Erasmus
Mundus

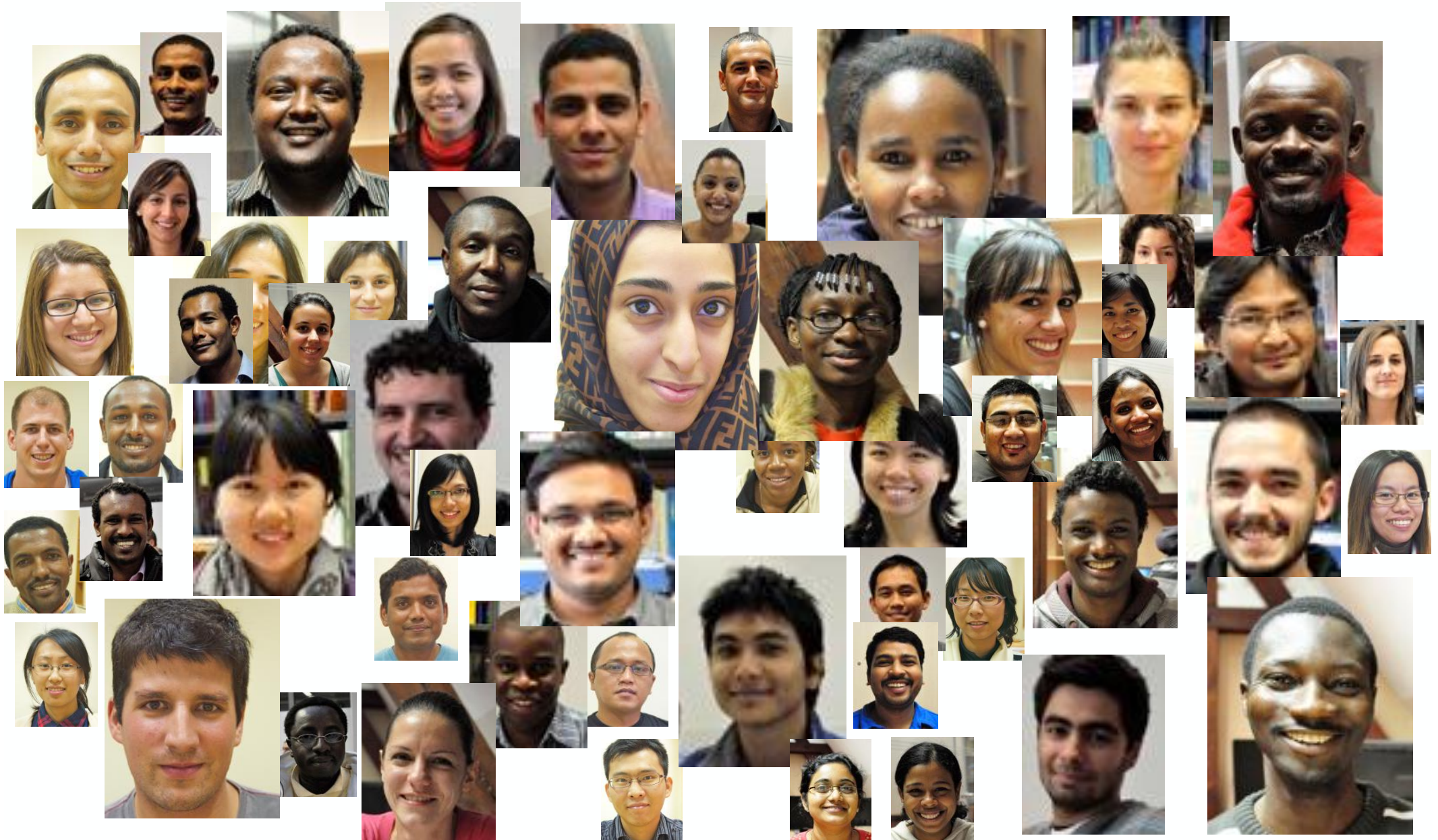
WHY STUDY IN ERASMUS MUNDUS?

Students and lecturers from all over the world...





Students



WHY CHOOSE ERASMUS MUNDUS?



INTERNATIONAL AND MULTICULTURAL GROUP OF
STUDENTS - A UNIQUE EXPERIENCE!

WHY CHOOSE ERASMUS MUNDUS?



INTERNATIONAL GROUP OF LECTURERS
BEST EXPERTS SELECTED

CHINESE STUDENTS

2008



映旭 曾

Yingxu Zeng

(yingxu.zeng@gmail.com)

2010



Li Liu

(jasmine9958@live.cn)

2012



杨扬

Yang Yang

(yangyang5062929@126.com)

2013

龙旭霞

Xuxia Long

(longxuxia@gmail.com)



2014



Yu Zhang

(peterzhang1218@qq.com)

Hui Ping Yuan

(r94449002@ntu.edu.tw)

2011



Han Zhu

(zhuhanchien@gmail.com)



Fuchao Xu

(shingoxmu@gmail.com)



2010

丽平 肖

Liping Xiao

(liping_xiao@hotmail.com)



Two Erasmus Mundus projects:



ChIR:

Erasmus Mundus Master in

**Chemical Innovation
and Regulation**

化学创新与监管



Erasmus Mundus Master in

**Quality in Analytical
Laboratories**

分析实验室品质



ChIR:

Erasmus Mundus Master in

Chemical Innovation and Regulation

化学创新与监管



Erasmus
Mundus

Contents:

1. What is ChIR?
2. What will you study?
3. Where will you study?
4. How to apply?

I. WHAT IS...

“CHEMICAL INNOVATION”

AND

“REGULATION” ?



Pesticides

Colorants

PCBs

200 nm nanomaterials

Asbestos



CHEMICAL SAFETY MANAGEMENT



- 2006 - United Nations:

*Strategic **A**pproach to **I**nternational **C**hemicals **M**anagement
(SAICM)*

Objective:

*to have a sound management of chemicals so that by **2020**
chemicals are produced and used in ways that minimize significant
adverse impacts on human health and the environment*

CHEMICAL SAFETY MANAGEMENT

Countries have implemented SAICM as different regulations:

- **USA:** Toxic Substances Control Act (TSCA)
- **Japan:** Chemical Substances Control Law (CSCL)
- **European Union (2007):**

*Registration, **E**valuation, **A**uthorization and Restriction of **C**hemical Substances
(**REACH**)*

- **China (2010):**

*“China **REACH**” regulations*

CHEMICAL SAFETY MANAGEMENT

REACH regulations:

“no data, no market”

No chemical substance can be sold in the European market unless it has been proven safe.

It is the *companies* who must assure the safety of the chemical substances



ChIR:

Erasmus Mundus Master in

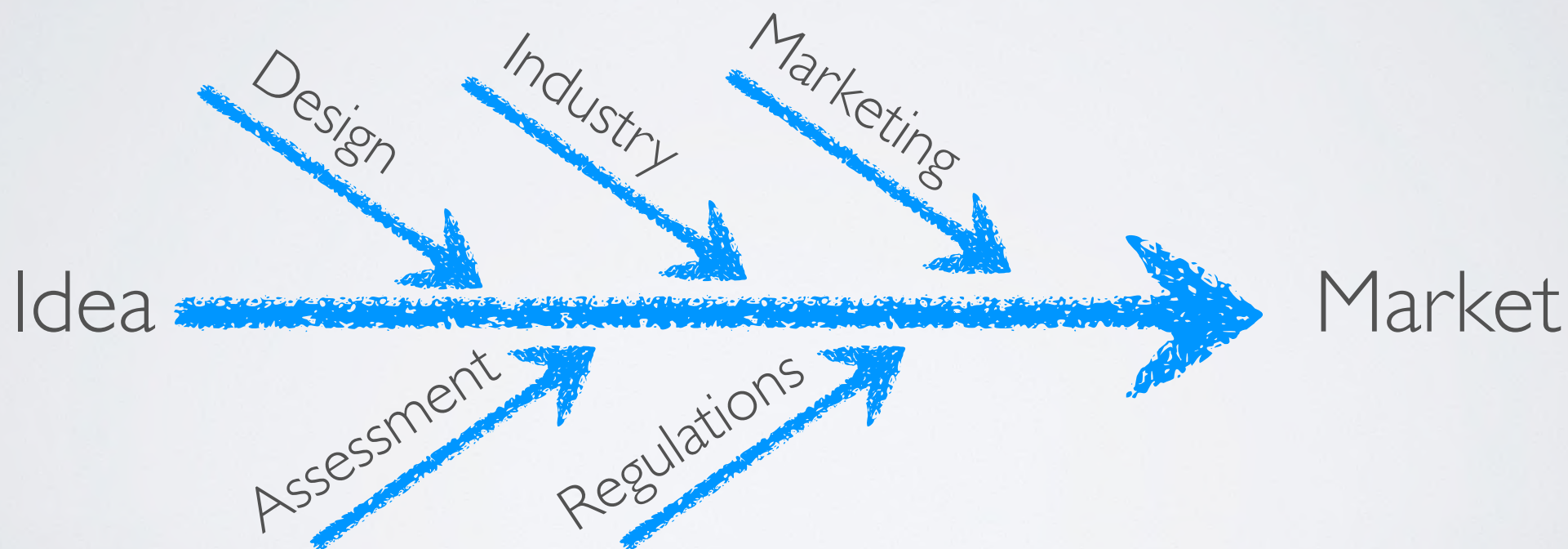
Chemical Innovation and Regulation

Prepares students to manage

CHEMICAL SAFETY

from the idea to the market

Erasmus Mundus Master in **Chemical Innovation and Regulation**



2.

WHAT WILL YOU STUDY?

★ Duration: 24 months

1 year classes + 1 year research

★ Very flexible

choose 30 modules from ~80

Choose from list of modules on 5 areas:

Design

Industry

Marketing

Assessment

Regulations



ChIR: Erasmus Mundus Master in **Chemical Innovation and Regulation**

- 5 areas:

- **Design of new products**

Alternative Green Products

Properties of Materials and New Materials

Patenting New Products

Drug Design

Structure Toxicity Relationship

Chemical Databases

Modeling and Simulation

Food and Chemistry

Soft Materials

Design of Chemical formulations

Synthesis and Properties of Inorganic Nanomaterials





ChIR: Erasmus Mundus Master in **Chemical Innovation and Regulation**

- 5 areas:

- **Industry**

Sustainable Chemistry:

Renewable Sources

Green Metrics

Safe Reagents and Catalysts

Alternative Green Solvents

Green Synthetic Strategies

Zeolites for Clean Chemistry

Applied Heterogeneous Catalysis

Chemical and fine chemical industry:

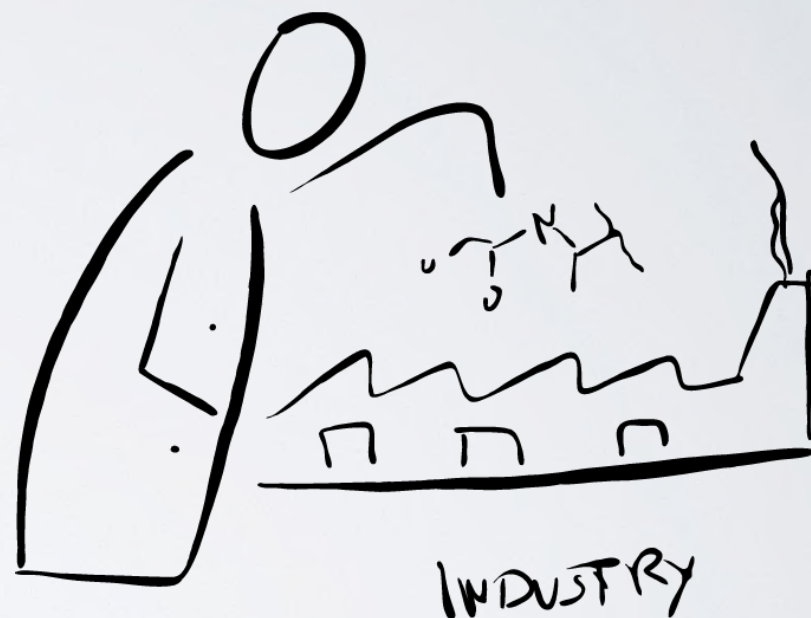
Pharmaceutical and Fine Chemicals Industry

Industrial Forgery Detection

Chemical Process Safety

Chemical Industry

Nanomanufacturing and Nanoprocessing





ChIR: Erasmus Mundus Master in **Chemical Innovation and Regulation**

- 5 areas:

- **Marketing**

Business Planning

Market Research

Social Perception of the Chemical Risk

Health and Safety in Chemistry

Life Cycle Assessment

Quality Management





ChIR: Erasmus Mundus Master in Chemical Innovation and Regulation

- 5 areas:

- Assessment

Environmental Assessment

Chemical Transformation and Degradation in the Environment
Chemical Pollutants (solvents, VOC,...)
Environmental Analysis and Detection in the Environment
Trace Metal Speciation
Environmental and Health Safety of Nanotechnology
Chemical Pollutant Remediation
Environmental Physical Chemistry
Marine Microbial Diversity and Ecology

Toxicological Assessment

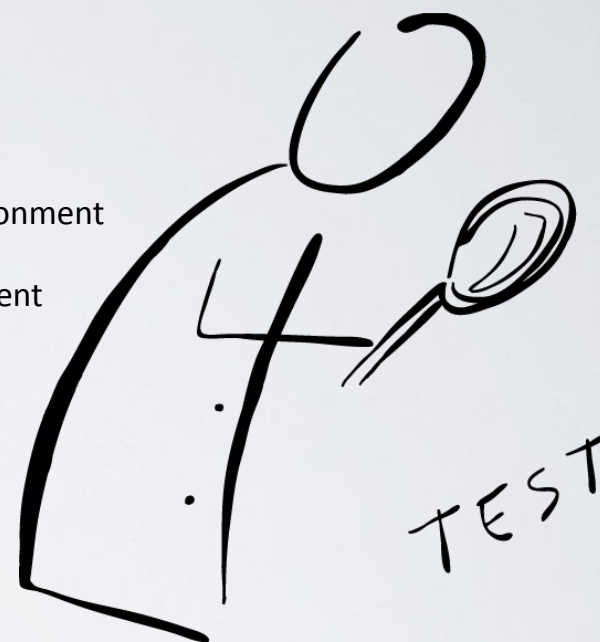
Genotoxicity Assessment
Toxicokinetics and Toxicogenetics
Trace Metal Bioavailability
Toxicology
Principles of Toxicological Assessment
Human Physiology

General Assessment

Good Laboratory Practice
Measuring Variability and Statistical Decision
Sampling Strategies
Experimental Design
Guidelines for the Testing of Chemicals: Toxicology Approaches

Physical Hazard Assessment

Physical Risk Assessment of Chemicals
Chemical Reactivity Hazards





ChIR: Erasmus Mundus Master in **Chemical Innovation and Regulation**

- 5 areas:

- **Regulation**

REACH and CLP Regulations

Non-EU Regulations: Japan, Brazil and China

Comparative Analysis of Chemical Regulations – US and EU

Biocides and pesticides regulations

Pharmaceuticals Regulations

Nanomaterials and Nanotechnologies Regulations

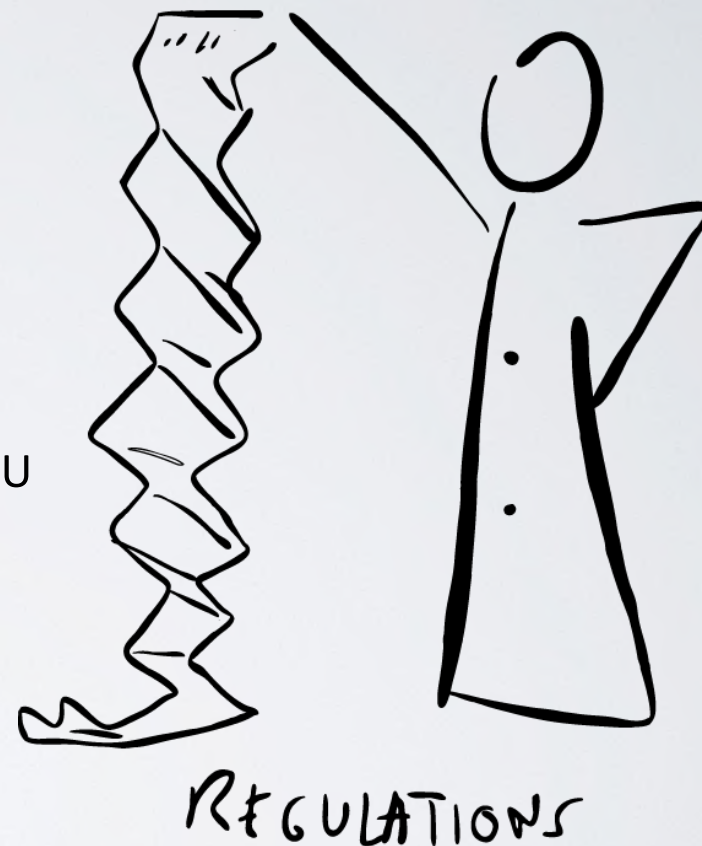
Chemical Waste Materials Regulations

Priority Substances in EU Environmental Legislation

Good Manufacturing Practice

Risk Management

Safety and Environmental Regulations in Chemical Plants





ChIR: Erasmus Mundus Master in **Chemical Innovation and Regulation**

More information at:
www.emmcchir.org

Erasmus
Mundus
Master
Course in
Chemical
Innovation and
Regulation





3.

WHERE WILL YOU STUDY?



European Partners:



University of
Algarve,
Portugal



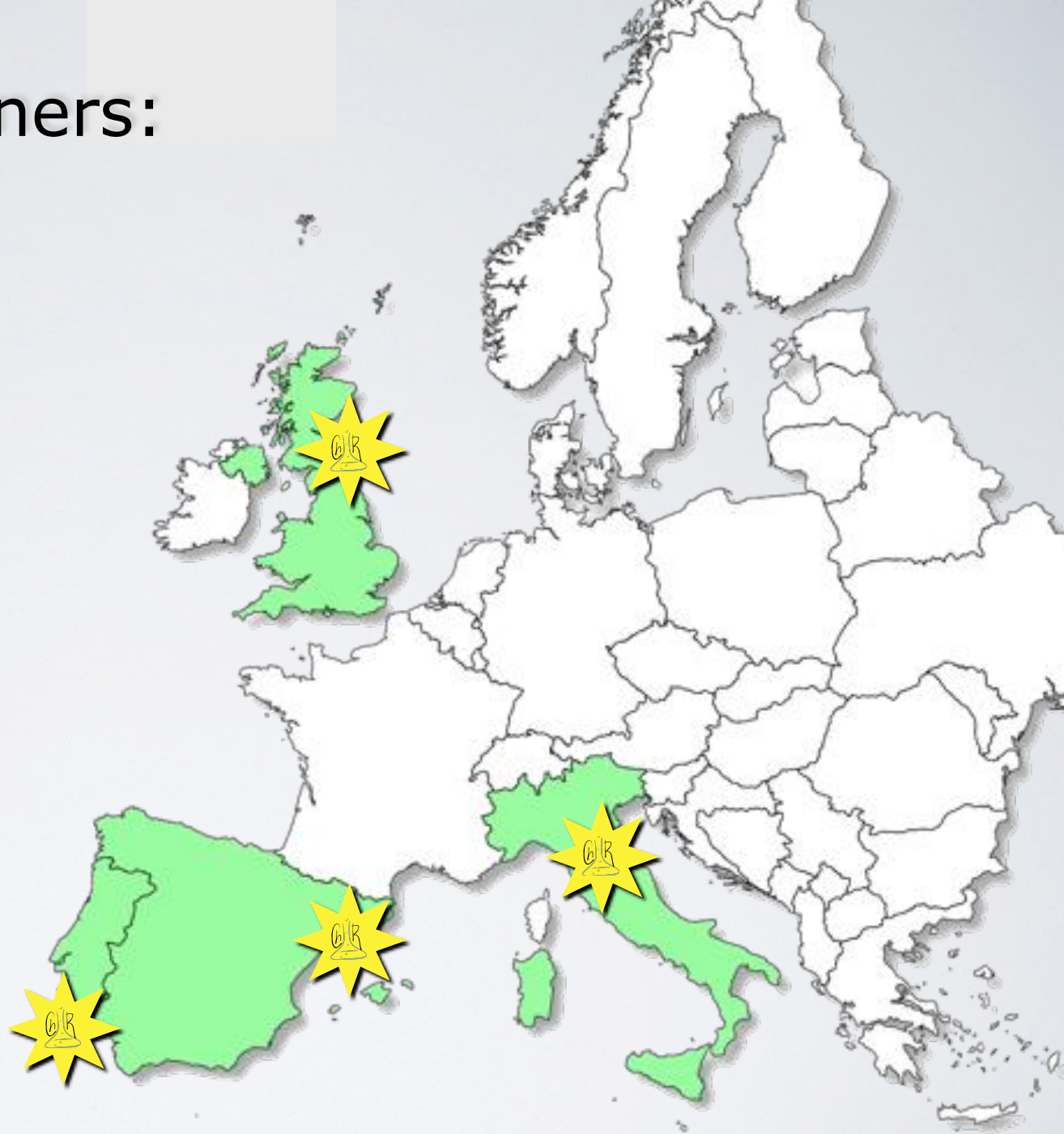
University of
Barcelona,
Spain



University of
Bologna,
Italy



Heriot-Watt
University,
UK





Annual Host University:

2014

University of Barcelona,
Spain

2015

University of Bologna,
Italy

2016

**University of Algarve,
Portugal**



non-European Associated Partners:



**Holy Names
University, USA**

**University of São Paulo
Brazil**



Pune University, India



**Central South University
China**

Hokkaido University, Japan





non-academic associated Partners:

Research Centers:

- NILU - Norsk Institutt for Luftforskning (Norway)
- CQE - Centro de Química Estrutural (Portugal)
- CIQA - Centro de Investigação em Química do Algarve (Portugal)
- CBME - Centro de Biomedicina Molecular e Estrutural (Portugal)
- Lab*S - Red Espanola de Laboratorios Sostenibles (Spain)
- GRISC - Governance Risk Research Center (Spain)

Professional associations:

- SPQ - Sociedade Portuguesa de Química (Portugal)
- SEQUI - Sociedade Espanola de Química Industrial e Ingenieria Quimica (Spain)

Industrial Associations and Companies:

- FEIQUE - Federación Espanola de Industrias Quimicas (Spain)
- APEQ - Associação Portuguesa de Indústrias Químicas
- CEFIC - European Chemical Industry Association (Belgium)

Regulatory bodies:

- ECHA - European Chemicals Agency (Finland)





Erasmus Mundus Master in
**Quality in Analytical
Laboratories**

分析实验室品质



Erasmus Mundus Master in Quality in Analytical Laboratories

University of Bergen
(Norway)

Gdansk University of
Technology
(Poland)

University of Barcelona
(Spain)

2016:
University of Algarve
(Portugal)

University of Cadiz
(Spain)



QUALITY IN ANALYTICAL LABORATORIES

- Analytical Laboratories are essential in modern society:
- **Public Health** depends on **water and food analysis**
- **Medical diagnosis** and treatment depends on the results of **clinical analysis**
- **National and international trade** depend on analytical results - chemical composition is the basis for the value of many goods



QUALITY IN ANALYTICAL LABORATORIES

- The quality of water and air depends on the results from analytical laboratories





**EMQAL: European Joint Masters in
Quality in Analytical Laboratories**

OBJECTIVES OF EMQAL

Training laboratory scientists and administrators
to implement and manage **Quality Systems** in
Analytical Laboratories, focusing on:

Accreditation

Worldwide comparability



ChIR:

Erasmus Mundus Master in

Chemical Innovation and Regulation



Erasmus Mundus Master in

Quality in Analytical Laboratories

4.

HOW TO APPLY?

HOW TO APPLY?

Applications:
open **October - December 2015**

Classes:
start **October 2016**

Online applications:
for ChIR: www.emmcchir.org
for EMQAL: www.emqal.org

emmcchir@ualg.pt



Erasmus
Mundus

伊拉斯谟世界计划硕士化学创新与监管; 伊拉斯谟世界计划硕士分析实验室品质

- ★ 硕士学期为24个月：一学年的课程+一年的科研及论文
- ★ 由来自欧洲四所大学的该领域专家授课
- ★ 在至少两个欧洲国家的大学完成全部学习
- ★ 英语授课
- ★ 学生有机会学习另一种欧洲国家的语言
- ★ 可获得世界认可的学位
- ★ 可获得ERASMUS-MUNDUS奖学金
- ★ 更多信息请访问 www.emmcchir.org, www.emqal.org

谢谢！