



# MOOC (Massive Open Online Course)

Una **moda** o una **proposta de futur**?



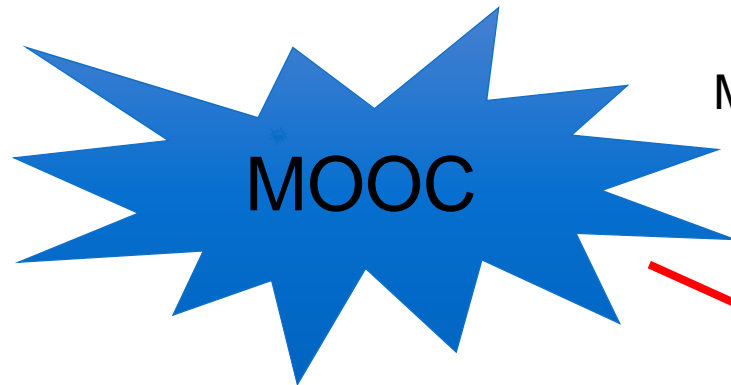
J. Camarasa



# MOOC

## Principles of Pharmacology and Therapeutics

**MODA ?**



Massive Open Online Course (2012)



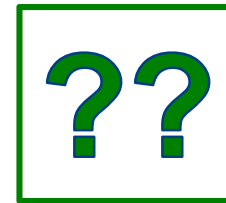
Small Private Online Course (2014)



# MOOC

## Principles of Pharmacology and Therapeutics

### PROPOSTA DE FUTUR ?



J Camarasa

# MOOC

Principles of Pharmacology and Therapeutics

# MOOC

(**Massive** Open Online Course)

- Públic potencial (10000 – 20000?)
- Idioma i plataforma
- Perfil
- Feina a fer
- Seguiment, dinamització (Fòrum)



# MOOC

## Principles of Pharmacology and Therapeutics

### (Massive Open Online Course)

- Vesant traslacional (des de conceptes bàsics de farmacometria a cóm saber llegir i interpretar correctament un prospecte)
- Interacció amb els alumnes les 24 h
- Disseny àgil de les activitats
- Avaluació
  - Adequada, factible, còmode, etc..
- Grau de Certificació



# MOOC

## Principles of Pharmacology and Therapeutics

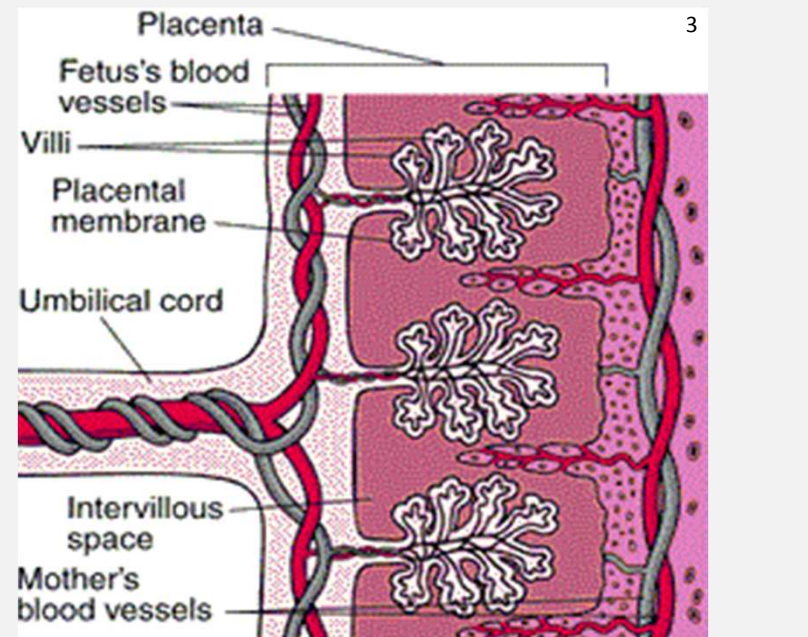
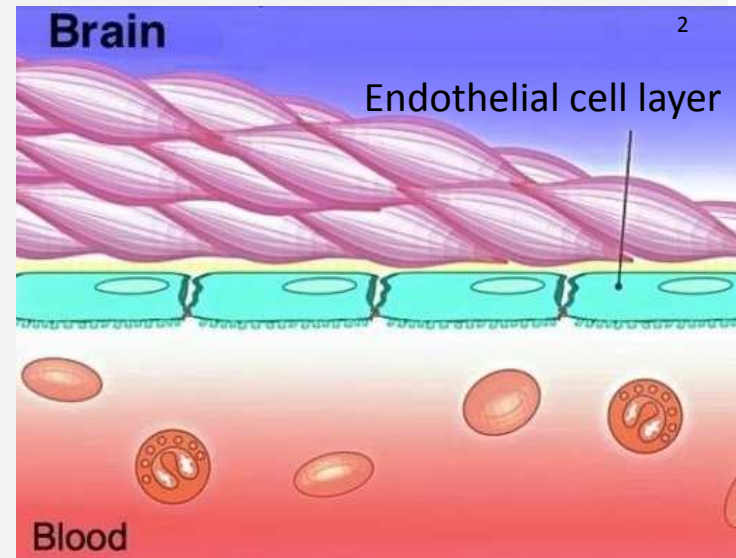
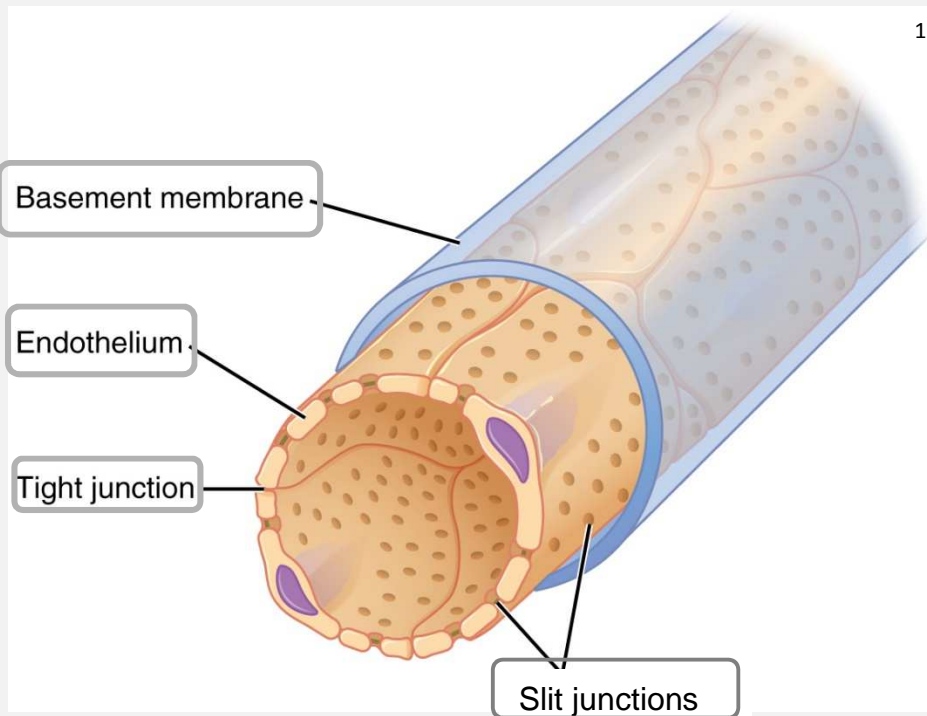
- Questions prèvies del Material:
  - Organització del Curs
    - Presentacions (Lectures)
    - Material suplementari i bibliografia
    - Propietat intel·lectual
    - Activitats i avaluació
    - Accés discapacitats





**B. Capillary structure:**

- Surface area → -↑vascular branching
- Time for exchange → -↓velocity of flow



Placenta is the membrane separating:  
Fetal blood    Maternal blood

<sup>1</sup>CC BY 3.0: [http://cnx.org/content/m46431/latest/2614\\_Fenestrated\\_Capillary.jpg](http://cnx.org/content/m46431/latest/2614_Fenestrated_Capillary.jpg)

<sup>2</sup>CC BY user: PigSauce: [http://en.wikipedia.org/wiki/File:Blood\\_vessels\\_brain\\_01.png](http://en.wikipedia.org/wiki/File:Blood_vessels_brain_01.png)

<sup>3</sup>CC BY NCSU: <http://wikis.lib.ncsu.edu/index.php>

# MOOC

## Principles of Pharmacology and Therapeutics

### Qüestions prèvies del Material:

- La Plataforma

- *Udacity* (Sebastian Thurn, Silicon Valley, USA)
- *Coursera* (Mountain View, USA)
- *Miríada X* (Telefónica/Universia, Iberoamèrica)
- *Aprendo* (UNED/Telefónica/Universia)
- *Open edx* (Stanford, Google, etc.)
- *Edx.org* (MIT; Harvard)
- *Futurelearn* (Open University, UK)
- *Canvas Network, Unimooc*





# MOOC

## Principles of Pharmacology and Therapeutics

- La creació del curs “Principles in Pharmacology and Therapeutics
- 1.- Recerca i arxiu indexat del material audiovisual. 01/01/14 - 30/04/14.
- 2.- Classificació i adequació per blocs del material audiovisual. 01/03/14 - 30/06/14.
- 3.- Elaboració del material d'avaluació (Quizzes; Match to match; Multiple choice questions; ...) 01/04/14. Final 31/07/14.
- 4.- Elaboració i revisió de presentacions (format ppt/pptx). 01/02/14 - 30/06/14.
- 5.- Elaboració de graelles de correcció del material d'avaluació. 01/04/14 - 30/06/14.



# MOOC

## Principles of Pharmacology and Therapeutics

- **Module one**

- **Session 1**

- What is Pharmacology? What is Therapeutics?. History of drugs. General concepts in Pharmacology.

- **Session 2**

- General pharmacokinetics: movement of drugs across cell membranes. Routes of administration and drug absorption. Bioavailability.

- **Session 3**

- Distribution of drugs in the body. Binding of drugs to plasma proteins.

- **Session 4**

- Drug metabolism. Phase I and II. Induction and inhibition of drug metabolism. Half-life

- **Session 5**

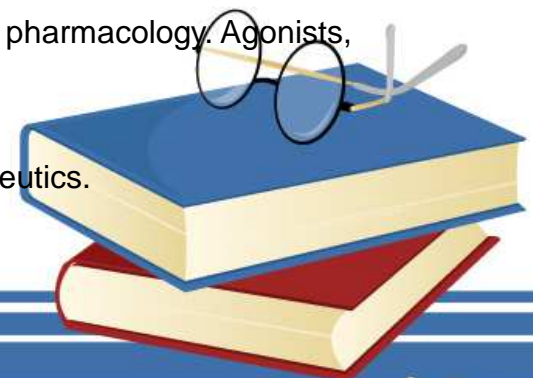
- Drug excretion. Renal and biliary drug excretion. Drug clearance

- **Session 6**

- General pharmacodynamics: drug targets and mechanisms of drug action. Receptor pharmacology. Agonists, partial agonists and antagonists. Dose-response curve

- **Session 7**

- Pharmacogenetics and pharmacogenomics. Clinical cases and importance in therapeutics.



# MOOC

## Principles of Pharmacology and Therapeutics

- **Module two**
- **Session 8**
  - General drug toxicity: Adverse drug reactions (ADR). Classification: Dose-related and non dose-related reactions. Drug- interactions.
- **Session 9**
  - Cardiovascular drug toxicity. QT-interval and drugs.
- **Session 10.**
  - Tolerance. Drug withdrawal. Drug dependence. Addiction and drugs of abuse.



# MOOC

## Principles of Pharmacology and Therapeutics

- **Module three**
- **Session 11**
  - Drug development. Preclinical testing. Safety pharmacology.
- **Session 12**
  - Clinical phases in drug development. The clinical trial. Pros and cons. Randomization. Design and ethics in clinical investigation. Metanalysis. Pharmacovigilance.
- **Session 13**
  - Principles in pharmacoeconomics. The risk-benefit ratio in drug development



# MOOC

## Principles of Pharmacology and Therapeutics

- **Module four**
- **Session 14**
  - Pediatric pharmacology. Use of drugs in neonatal and pediatric patients. Pediatric dose calculation. Pharmacokinetics in pediatrics.
- **Session 15**
  - Geriatric pharmacology. Pharmacokinetics/pharmacodynamics in older patients. Polypharmacy. Drug adverse reactions in geriatric population.
- **Session 16**
  - Pharmacological approach to analgesic and anti-inflammatory drugs



# MOOC

## Principles of Pharmacology and Therapeutics

### Personal participant

#### De forma directa:

- 2 Professors
- 2 Becaris
- Servei d'Audiovisuals UB
- 1 Locutor

#### De forma indirecta:

- CRAI (I. Labastida)
- Grup Adaptabit UB







Massive Open Online Course

# Principles of Pharmacology and Therapeutics

J. Camarasa • E. Escubedo



Universitat  
de Barcelona

## Learning Objectives:

- Relate the route of administration to the actions of a drug, and define some of them.
- Identify at least four dosages forms.
- Define absorption and bioavailability and their relevance in drug action.
- Explain the main transport systems involved in absorption.

# MOOC

## Principles of Pharmacology and Therapeutics

- Exemple d'una part del video de la Sessió 3 del mòdul 1

[http://youtu.be/UZ\\_IRGvwGs0](http://youtu.be/UZ_IRGvwGs0)



# MOOC

Principles of Pharmacology and Therapeutics

Moltes gràcies





Universitat  
de Barcelona

# MOOC

Una moda o una proposta de futur?

Online  
learning

**Dr. JM Nicolás**

Facultat de Medicina



Universitat de Barcelona

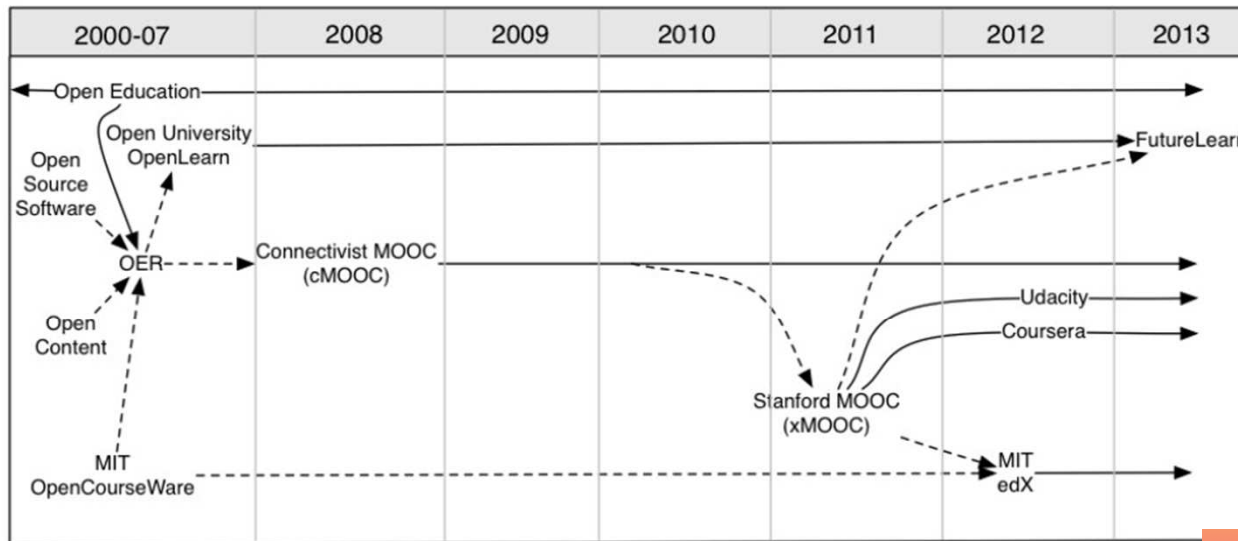
Facultat de Medicina

# MOOC



**INICIS AL 200-2012 COM A BLENDED COURSES UNIVERSITARIS**

**INCREMENT I GLOBALITZACIÓ EN PLATAFORMES GLOBALS**

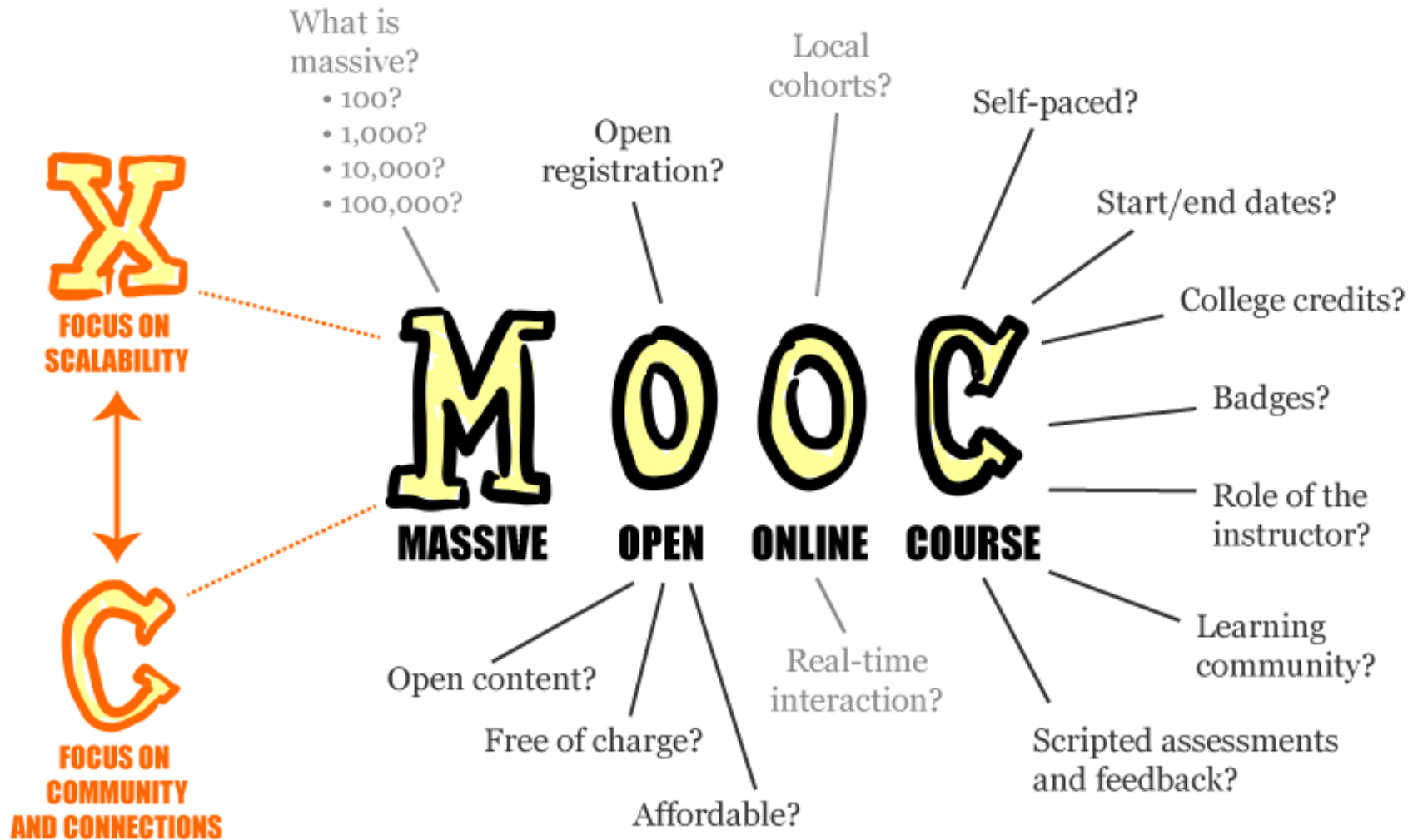


- - - - -> An influence  
 —————> Directly related





# MOOCs: ANYONE, ANYTIME, ANYWHERE





Fàcil accés a recursos globals

Classes de les més prestigioses universitats, sense ser alumne

Col·laboració internacional

Fomenta l'aprenentatge actiu

Discussions en forums

No exam fever

Peer evaluation

Menor aprofundiment de conceptes

Manca de resolució de dubtes en temps real

Limitat en cursos amb part pràctica

Mètodes d'avaluació

Qualitat molt dispar



# Prestigioses Universitats en múltiples plataformes

m. Learn more

Global Australia Brazil Canada China Denmark France Germany Hong Kong India Israel Italy Japan Mexico Singapore South Korea Spain Sweden Switzerland Taiwan Turkey US State Institutions Non-University Partners

Berkeley UNIVERSITY OF CALIFORNIA  
Sorbonne UNIVERSITÉS  
HARVARD UNIVERSITY  
MIT Massachusetts Institute of Technology  
TU Delft  
Berkeley UNIVERSITY OF CALIFORNIA  
BOSTON UNIVERSITY  
Dartmouth COLLEGE  
SORBONNE UNIVERSITÉS  
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY



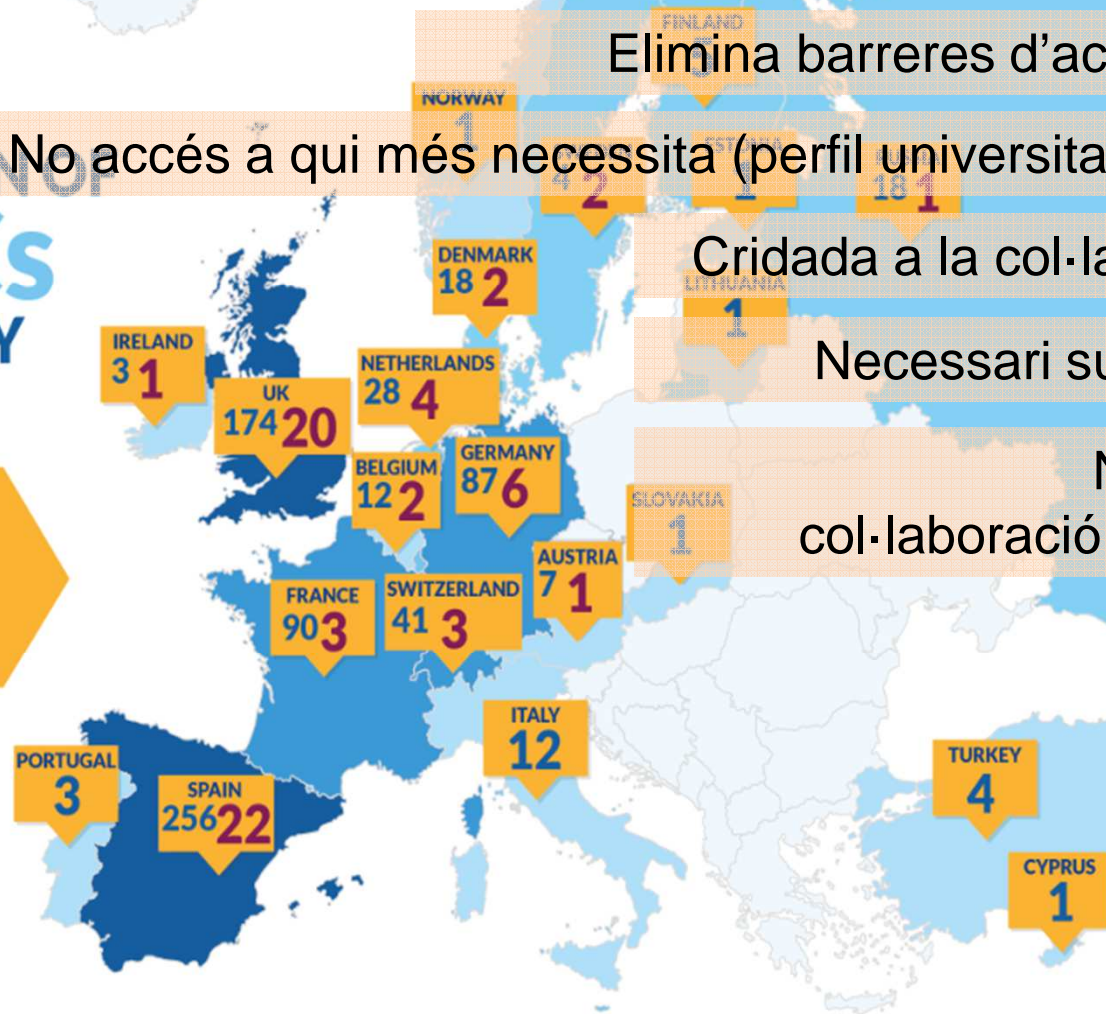


NOVEMBER 27th, 2014

## PORTO DECLARATION ON EUROPEAN MOOCs

### DISTRIBUTION OF MOOCs PER COUNTRY

EUROPEAN MOOCs  
**770** **68**



Elimina barreres d'accés (lloc i temps)

No accés a qui més necessita (perfil universitari classe mitjana)

Cridada a la col·laboració europea

Necessari suport institucional

Necessària major col·laboració interuniversitària

# REPTES DELS MOOC's

## SOSTENIBILITAT

Repte: generar ingressos

Reconeixement de crèdits?

Qualitat suficient?

Actualment, més bé...

Branding & Marketing

## PEDAGOGIA

Transmissió del coneixement

*Tecnology-enriched tradicional  
teacher-centred instruction*

Los xMOOC

Menor interacció col·lectiva

Disseny pedagògic lliure


## TAXES D'ABANDONAMENT

80-95% en MOOCs oferts per Stanford,  
MIT i UC Berkley

## Specializations

Master a skill with a **targeted sequence of courses**  
 Apply it in a **capstone project**

### Opció a l'alça: Cursos d'especialització (de pagament)



**Data Science**  
 Johns Hopkins University




**Entrepreneurship:  
 Launching an Innovative  
 Business**  
 University of Maryland, College  
 Park



**Digital Marketing**  
 University of Illinois at Urbana-  
 Champaign

## Courses

This specialization covers the concepts and tools you'll need throughout the entire data science pipeline, from asking the right kinds of questions to making inferences and publishing results. The Specialization concludes with a Capstone project that allows you to apply the skills you've learned throughout the courses.

- 1 The Data Scientist's Toolbox
- 2 R Programming
- 3 Getting and Cleaning Data
- 4 Exploratory Data Analysis
- 5 Reproducible Research
- 6 Statistical Inference
- 7 Regression Models
- 8 Practical Machine Learning
- 9 Developing Data Products
-  Data Science Capstone

Course 1  
**The Data Scientist's Toolbox** Start Now - 20 €

Upcoming Session: Feb 2nd 2015   
 Duration: 4 weeks  
 Estimated Workload: 1-4 hours/week

Upon completion of this course you will be able to identify and classify data science problems. You will also have created your Github account, created your first repository, and pushed your first markdown file to your account.

## Payment Options

### Pay for Full Access

Commit today and pay for the whole Specialization. Get unlimited retries for all courses in this Specialization for two years.

$$20\text{€} + 9 \times 35\text{€} =$$

first course    courses    course and Capstone

**335€**

Specialization Certificate

... o "auditar" els cursos de manera gratuïta (sense certificat)

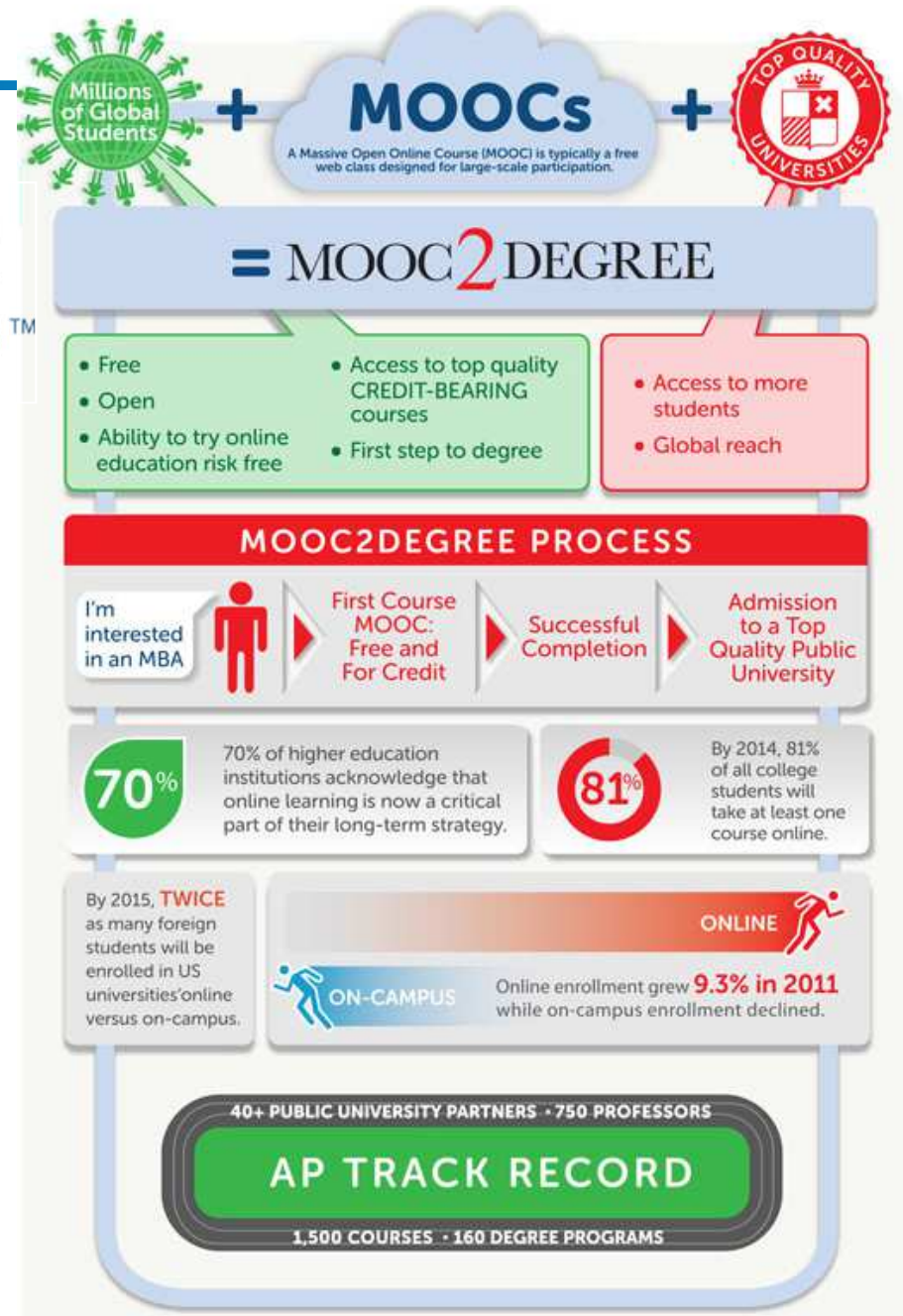


## Noves propostes de negoci



Sorgeixen noves propostes de negoci arrel dels MOOC, com a MOOC2DEGREE: reconeixement com a crèdits inicials del graus universitaris

## Now the MOOC has a Business Model



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 THIS MONTH: [Finance](#) [Statistics](#) [Social Media](#) [R Programming](#)



We found 175 courses for "Healthcare"

## Top Health & Medicine Courses



**A Journey through Medicine: How to Get into Medical School**  
Charles Hoskinson

★★★★★ 3 Reviews

START DATE..... Self-paced  
 COST..... \$9.00 USD



**An Introduction to Medicine**  
Oxford Royale Academy Prep  
Dr Evelyn Chan

★★★★★ 4 Reviews

START DATE..... Self-paced  
 COST..... \$136.35 USD



**Epidemics - the Dynamics of Infectious Diseases**  
The Pennsylvania State University  
Marcel Salathé, Andrew Read...

★★★★★ 328 Reviews

START DATE..... TBA  
 COST..... Free



Courses
Learning Pathways

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Filter By:

- ▼ Start Date
- ▲ Course Providers
  - Unselect All
  - edX
  - Stanford Online
  - Treehouse
  - Udacity
  - Udemy
  - Tuts+
  - Pluralsight
  - StraighterLine
  - Coursera
  - Canvas Network
  - The Great Courses
- See All Course Providers
- ▲ Cost
  - All
  - Free
  - Paid
- ▲ Rating
  - All
  - ★★★★★
  - ★★★★☆
  - ★★★☆☆
  - ★★☆☆☆
  - ★☆☆☆☆

Sort By: ▼

<b>coursera</b>	<b>Epidemics - the Dynamics of Infectious Diseases</b> Marcel Salathé, Andrew Read, Peter Hudson, Matthew Ferrari, Ottar Bjornstad, Rachel Smith, Mary Poss, David Hughes   The Pennsylvania State University	START DATE TBA	COST Free	★★★★★ 328 Reviews	
<b>udemy</b>	<b>The US Healthcare Industry: Changes and Opportunities</b> Jonathan Ezer	START DATE Self-paced	COST \$15.00	★★★★★ 9 Reviews	
<b>edX</b>	<b>SW47.1x: Entrepreneurship and Healthcare in Emerging Economies</b> Tarun Khanna, Sue J. Goldie   Harvard University	START DATE TBA	COST Free	★★★★★ 6 Reviews	
<b>coursera</b>	<b>Vaccines</b> Paul Offit   University of Pennsylvania	START DATE TBA	COST Free	★★★★★ 9 Reviews	
<b>coursera</b>	<b>Genes and the Human Condition (From Behavior to Biotechnology)</b> Tammatha O'Brien, Raymond Leger   University of Maryland, College Park	START DATE TBA	COST Free	★★★★★ 8 Reviews	



VS



QUIN BENEFICI OBTENEN AQUESTES PLATAFORMES?





Visibilitat

Marketing

Internacionalització

Branding

**QUÈ GUANYEN LES UNIVERSITATS COL-LABORANT EN AQUESTES PLATAFORMES?**

**Experiència a la Facultat de Medicina**

**FAKULTÄT DE MEDICINA**



**Máster  
Enfermo crítico  
y emergencias**

**IMPLANTACIÓ CURS 2013/2014**

**mediasite**<sup>®</sup>  
by sonicfoundry<sup>®</sup>

***BLENDED COURSE 2014/2015 (PART TEÒRICA)***  
**DOBLE D'ALUMNES MATRICULADOS**

**NOMÉS 20-30% ACUDEIXEN PRESENCIALMENT A LA PART TEÒRICA**  
**BON SEGUIMENT AMB ADEQUAT SUPORT AL CAMPUS VIRTUAL**



# MIJTANS ACTUALS A LA FACULTAT DE MEDICINA

DES DE 09/2014 DISPOSEM DE



Servei de  
**Gravació de classes**  
FACULTAT DE MEDICINA UB



GRABACIÓ DE CLASSES EN ESTUDI

Máster Enfermo crítico y emergencias

CLÍNIC HOSPITAL UNIVERSITARI

Facultat de Medicina

## Hipoperfusió

Nivel de consciència alterado

Hipertactèmia >2 mEq/l

Hipotensió arterial

Piel fría y moteada

Oligúria

5

Universitat de Barcelona

## Autoimmune hepatitis

Epidemiology, etiopathogenesis, histology, presentation and natural history, differential diagnosis, prognosis and specific treatment. Overlap syndromes

Albert Parés  
Liver Unit, Hospital Clinic, IDIBAPS, CIBERehd,  
University of Barcelona, Barcelona

Máster Universitario Investigación Clínica ENFERMEDADES HEPÁTICAS

Facultat de Medicina





**CAP A ON VOLEM CAMINAR?**