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Research Master in Cognitive and Clinical Neuroscience

Drug Development and Neurohealth

Rudy Schreiber

Specialisation

Coordinator

KEUZEGIDS TOP RATED PROGRAMME Masters 2019

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Drug Development and Neurohealth (DN)

Class of 2018

- Started in 2016
- DN teaches how to find and make new treatments for mental & neurologic disorders

Class of 2019

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The Medical Need is HUGE

#1: Lower Back Pain

#2: Major Depression

#4: Neck Pain

#9: Anxiety Disorders

#6: Migraine

#11: Schizophrenia

#17: Bipolar Disorder

#19: Other Mental and Substance disorders

#21: Alzheimer's Disease

#22: Alcohol Abuse Disorder

#23: Epilepsy

Global Burden of Disease Study, Lancet 2013

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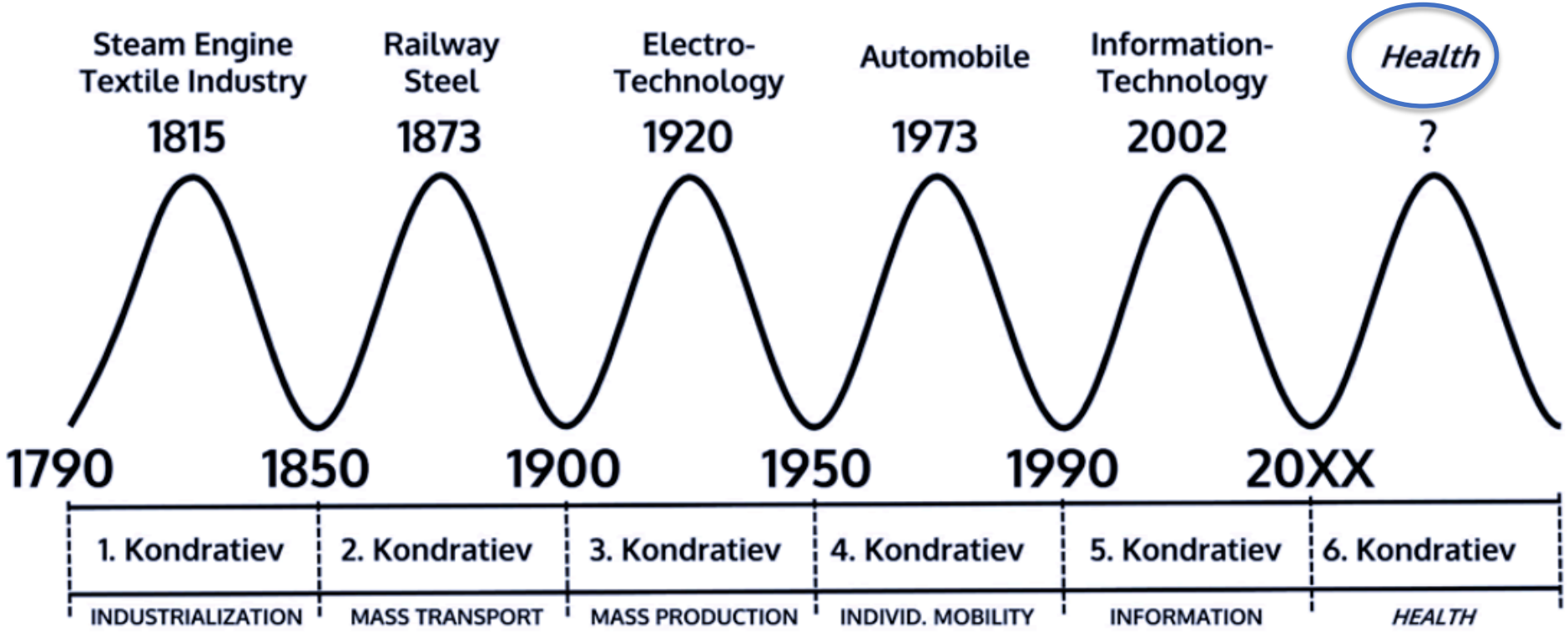
The Timing is Perfect



Kondratiev cycles for socio-economic revolutions

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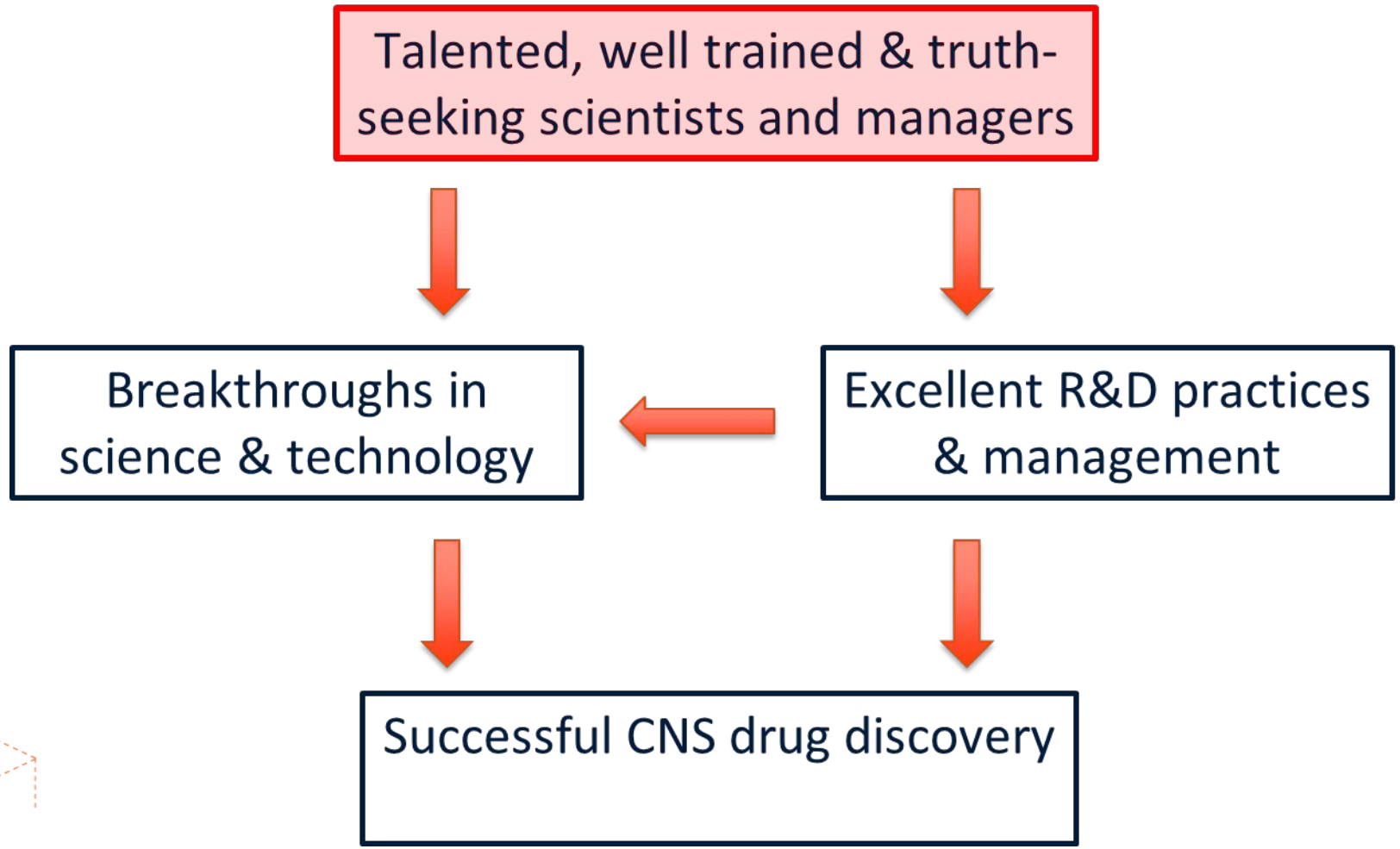
Our Path is Clear



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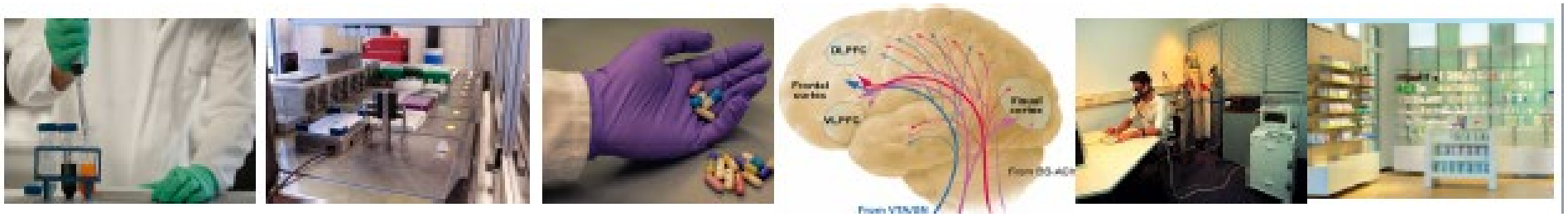
What Drug Development and NeuroHealth is about

- Research on new treatments for CNS disorders
  - Including neurochemical brain targets
- Multidisciplinary: neuroscience, toxicogenomics, (psycho-)pharmacology, biological psychiatry, entrepeneurship
- Wide range of topics: from “cells in tubes” to “new medicines in patients”
- Excellent career perspectives: academia, industry, government



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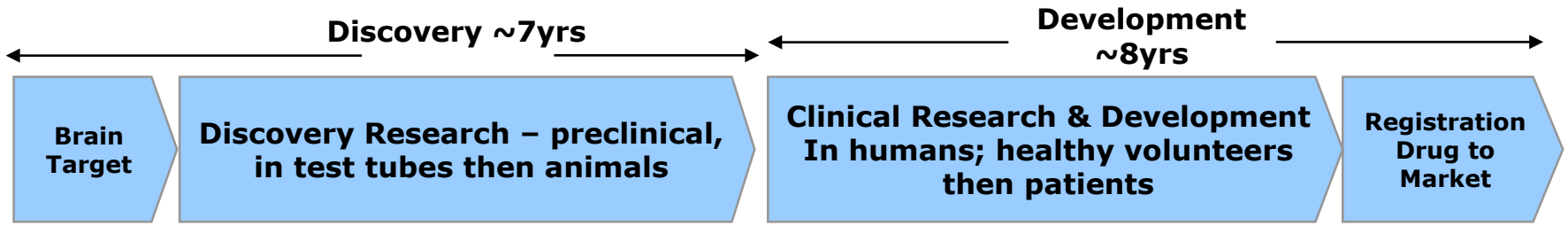
Courses aligned to drug research & development pipeline



This is about finding new medicinal drugs and making them work for dementia, depression, schizophrenia, autism, ADHD, ..., basically all neuropsychiatric diseases that can be targeted

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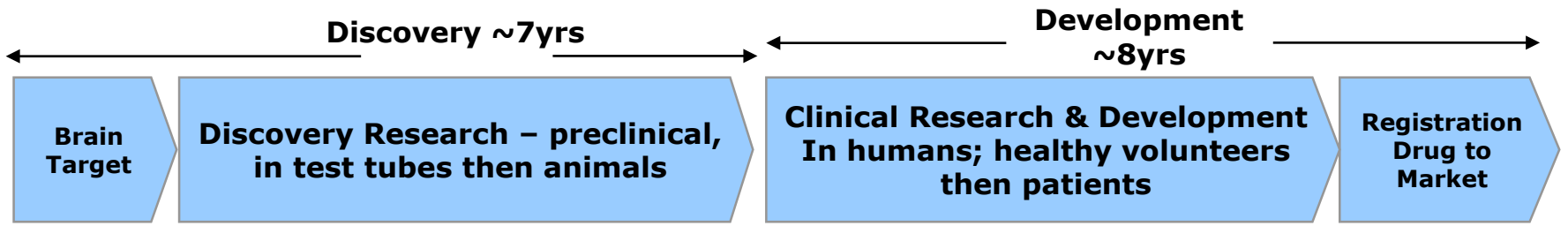
Development of essential capabilities for the future drug discovery research scientist



Target Discovery Drug Discovery Safety & Drug Metabolism Clinical Development Pharmacoepidemiology

Genetics Psychiatric Neuroscience Neuropsychopharmacology Applied Therapeutics

Big Data in Drug Discovery Animal Models Electrophysiology Biomedical Brain Imaging

Introduction to: Molecular & Biochemical Techniques / Psychology Project management Valorisation

Robot-based high-throughput screening In silico Drug Discovery Western Blotting Neuroanatomy

Advanced Statistics I and II, SPSS, LISREL, Colloquia, Scientific Writing, Grant Writing, Electives

Core Courses Practicals Workshops Parallel Courses

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Curriculum provides early exposure to industry

company excursions

- UCB (Brussels, Belgium)
- Johnson & Johnson (Beerse, Belgium)
- Bayer (Wuppertal, Germany)
- Grünenthal (Aachen, Germany)

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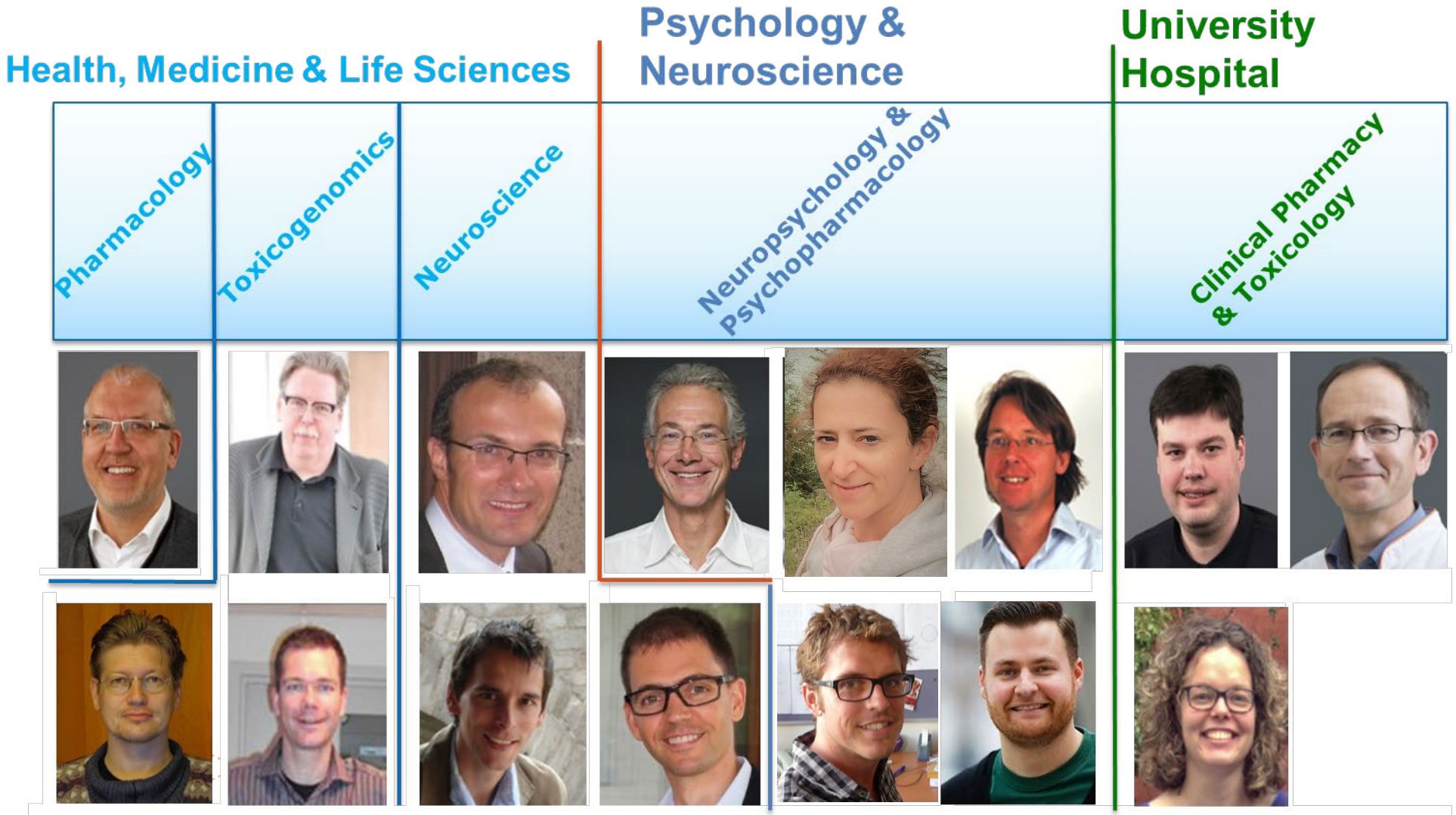
Staff from different Faculties and Departments



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Flexibility to develop your own profile

- Choose your position in the pipeline
  - Preclinical
    - In Vitro, Cell lines, Cell cultures
    - Big Data Neurogenomics, In-Silico Discovery
    - Preclinical Discovery, Animal Models, Psychopharmacology
  - Clinical
    - Test drugs or nutrients in volunteers or patients
    - Experimental Clinical Human Psychopharmacology
    - Clinical effects of medicines: Pharmacoepidemiology

- Electives – 5% of curriculum you choose yourself
- **Internship – 42% of your curriculum in Academia or Industry**


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Roche


Takeda


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COLUMBIA
UNIVERSITY


GRÜNENTHAL


Lundbeck


reMYND


CHDR
Centre for Human Drug Research


VE
RI
TAS
HARVARD


Boston
Children's
Hospital
Until every child is well™


uOttawa


CS


CEDARS-SINAI


KING'S
College
LONDON


ETH zürich

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Many career paths for DN graduates

academia

nutrition industry

pharmaceutical industry

healthcare

contract research organizations

life sciences venture capitalists

governmental regulatory office

research consortia in EU or US

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Who can apply

Students with a BA in:

- Neuroscience
- Psychology
- Biomedical Science
- Pharmacy
- Medicine
- Life Sciences
- Bioengeneering
- University College
- Science College
- …

FN & DN Class of 2021

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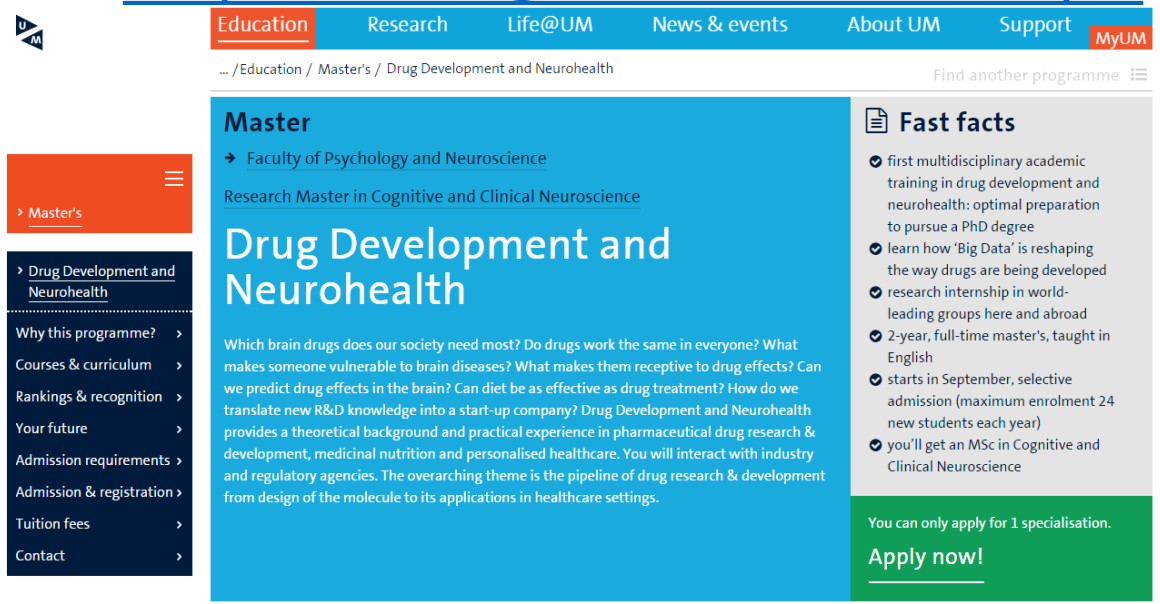
For more information

- Talk with student and coordinator after the presentation
- Contact DN coordinator: rudy.schreiber@maastrichtuniversity.nl
- Visit UM website:

  Google:

  Drug Development Maastricht



- Facebook site: https://www.facebook.com/MaastrichtRMDN/

Newsletters

Contact DN coordinator: r.schreiber@maastrichtuniversity.nl

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"I like maverick approaches"
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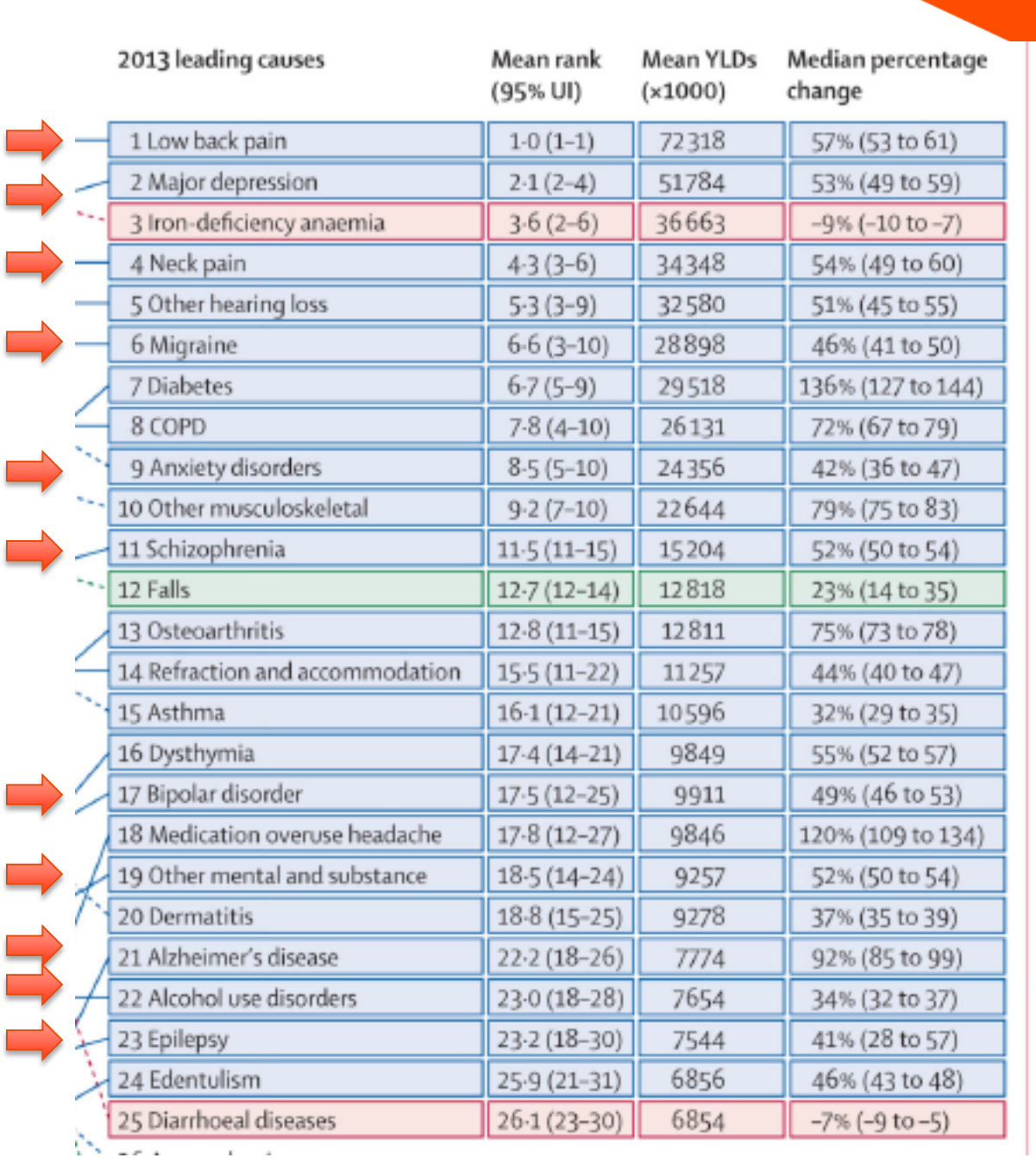
The Medical Need is Huge



2013 leading causes	Mean rank (95% UI)	Mean YLDs (×1000)	Median percentage change
1 Low back pain	1·0 (1–1)	72318	57% (53 to 61)
2 Major depression	2·1 (2–4)	51784	53% (49 to 59)
3 Iron-deficiency anaemia	3·6 (2–6)	36663	−9% (−10 to −7)
4 Neck pain	4·3 (3–6)	34348	54% (49 to 60)
5 Other hearing loss	5·3 (3–9)	32580	51% (45 to 55)
6 Migraine	6·6 (3–10)	28898	46% (41 to 50)
7 Diabetes	6·7 (5–9)	29518	136% (127 to 144)
8 COPD	7·8 (4–10)	26131	72% (67 to 79)
9 Anxiety disorders	8·5 (5–10)	24356	42% (36 to 47)
10 Other musculoskeletal	9·2 (7–10)	22644	79% (75 to 83)
11 Schizophrenia	11·5 (11–15)	15204	52% (50 to 54)
12 Falls	12·7 (12–14)	12818	23% (14 to 35)
13 Osteoarthritis	12·8 (11–15)	12811	75% (73 to 78)
14 Refraction and accommodation	15·5 (11–22)	11257	44% (40 to 47)
15 Asthma	16·1 (12–21)	10596	32% (29 to 35)
16 Dysthymia	17·4 (14–21)	9849	55% (52 to 57)
17 Bipolar disorder	17·5 (12–25)	9911	49% (46 to 53)
18 Medication overuse headache	17·8 (12–27)	9846	120% (109 to 134)
19 Other mental and substance	18·5 (14–24)	9257	52% (50 to 54)
20 Dermatitis	18·8 (15–25)	9278	37% (35 to 39)
21 Alzheimer's disease	22·2 (18–26)	7774	92% (85 to 99)
22 Alcohol use disorders	23·0 (18–28)	7654	34% (32 to 37)
23 Epilepsy	23·2 (18–30)	7544	41% (28 to 57)
24 Edentulism	25·9 (21–31)	6856	46% (43 to 48)
25 Diarrhoeal diseases	26·1 (23–30)	6854	−7% (−9 to −5)

Pain, psychiatric and neurologic disorders make up for 11 of the top 25 causes of global years lived with disability in 2013

Global Burden of Disease Study, Lancet 2013