

Research Master in Cognitive and Clinical Neuroscience

Drug Development and Neurohealth

Rudy Schreiber

Specialisation

Coordinator



Drug Development and Neurohealth (DN)

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



Class of 2018



Class of 2019

The Medical Need is HUGE

Go
the **extra**
mile

#1: Lower Back Pain

#2: Major Depression

#4: Neck Pain

#9: Anxiety Disorders

#6: Migraine

#11: Schizophrenia

#19: Other Mental and Substance disorders

#17: Bipolar Disorder

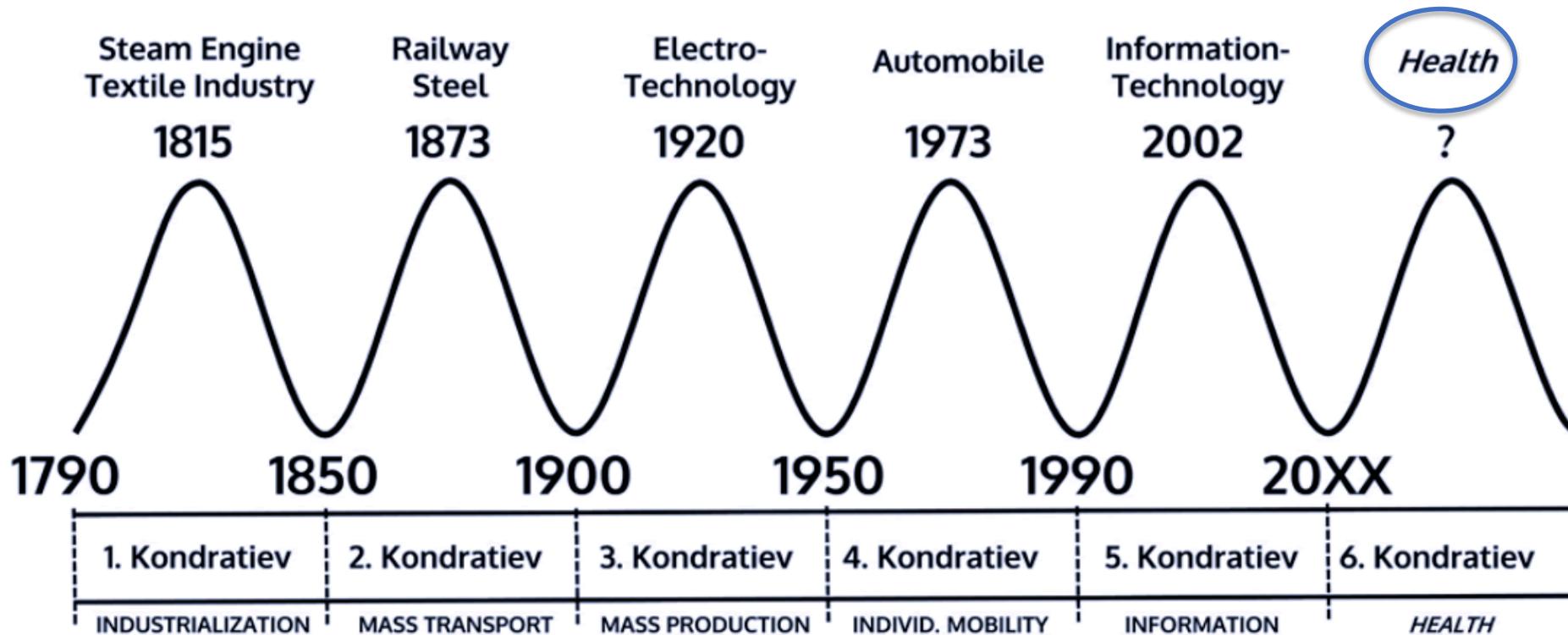
#22: Alcohol Abuse Disorder

#21: Alzheimer's Disease

#23: Epilepsy

The Timing is Perfect

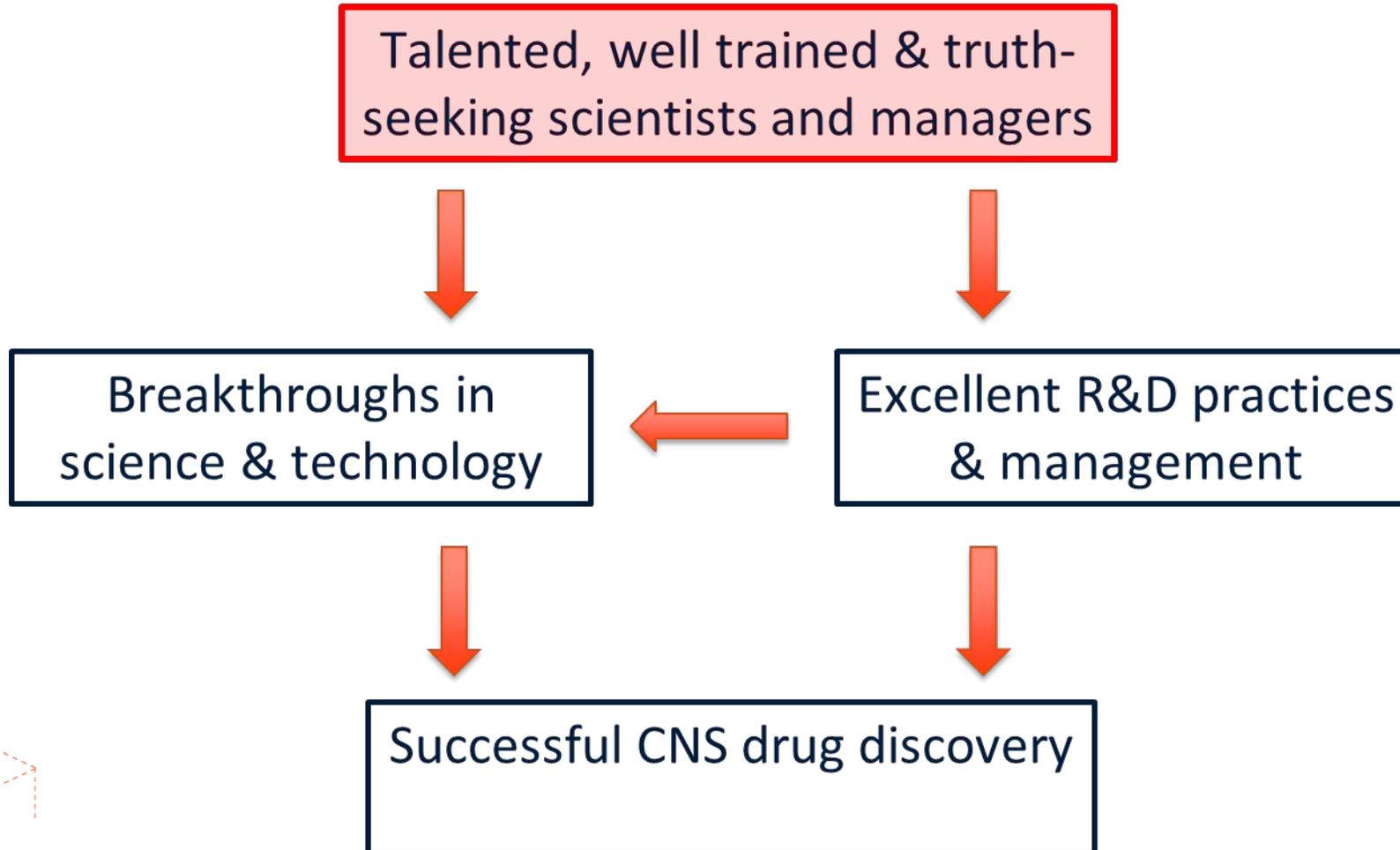
Go the **extra** mile



Kondratiev cycles for socio-economic revolutions

Our Path is Clear

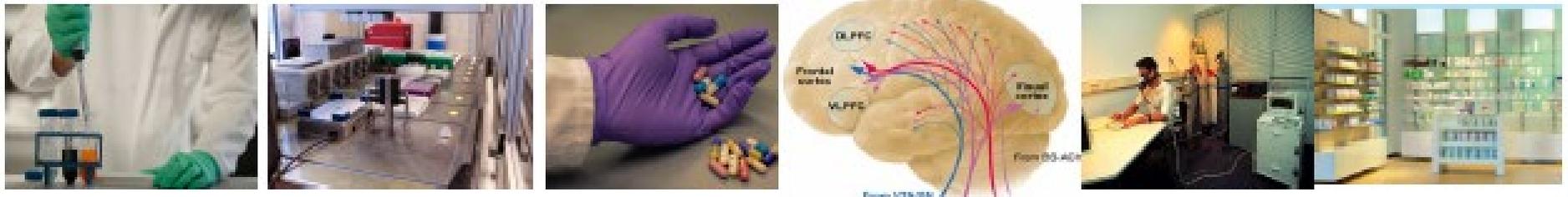
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What Drug Development and NeuroHealth is about

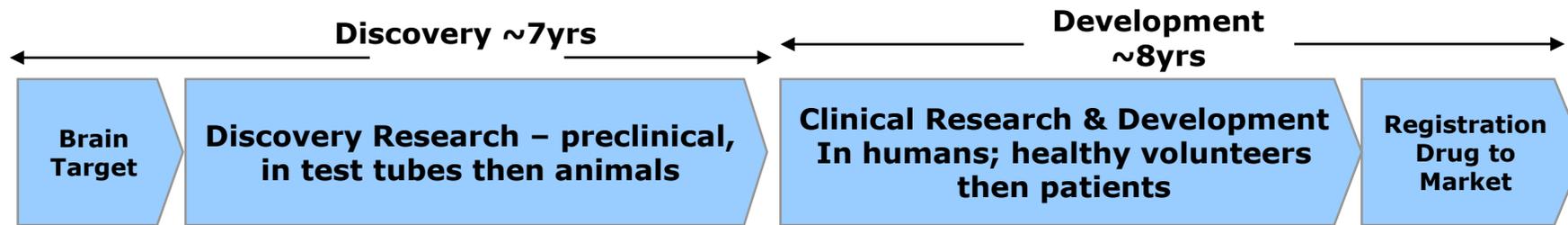
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- Research on new treatments for CNS disorders
 - Including neurochemical brain targets
- **Multidisciplinary:** neuroscience, toxicogenomics, (psycho-)pharmacology, biological psychiatry, entrepreneurship
- **Wide range of topics:** from “cells in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



Courses aligned to drug research & development pipeline

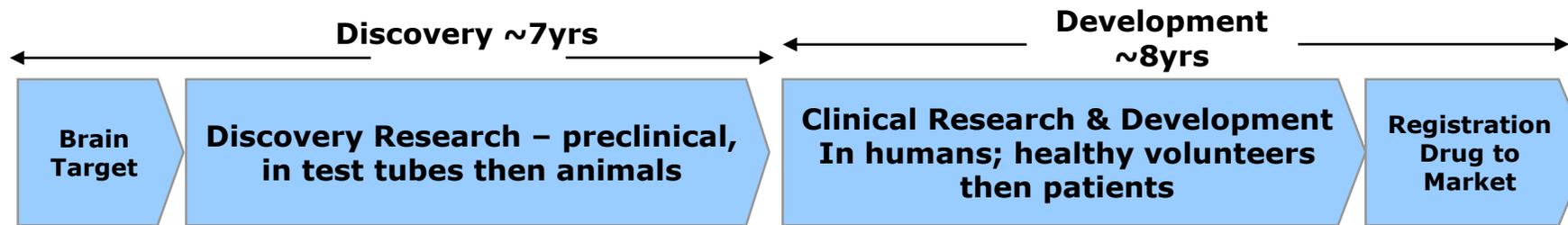
Go
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This is about finding new medicinal drugs and making them work for dementia, depression, schizophrenia, autism, ADHD,, basically all neuropsychiatric diseases that can be targeted

Development of essential capabilities for the future drug discovery research scientist

Go the **extra** mile



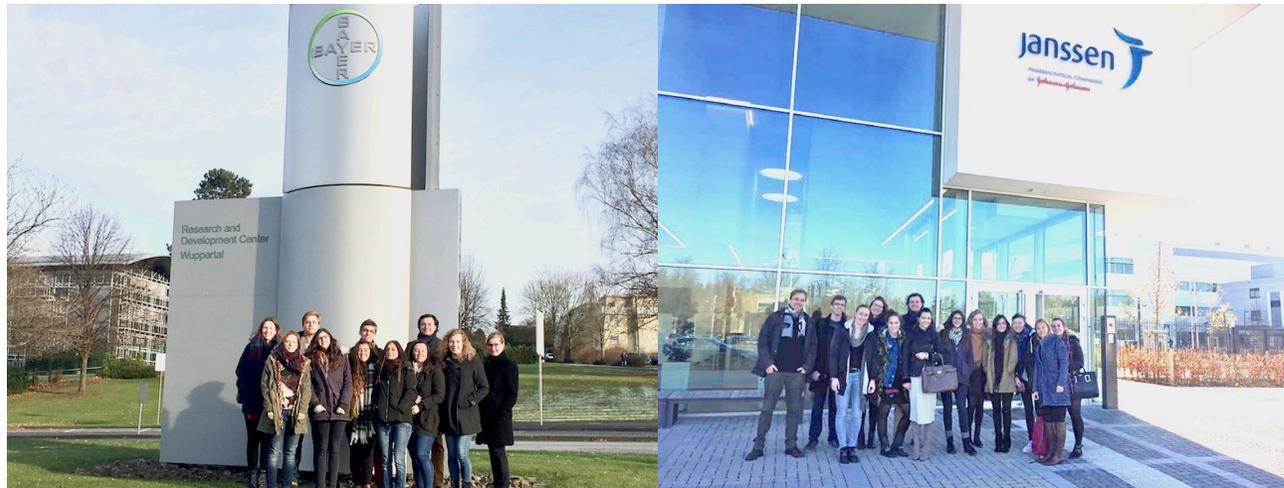
Target Discovery Drug Discovery Safety & Drug Metabolism Clinical Development Pharmacoepidemiology
Genetics Psychiatric Neuroscience Neuropsychopharmacology Applied Therapeutics
 Big Data in Drug Discovery **Animal Models** Electrophysiology **Biomedical Brain Imaging**
 Introduction to: Molecular & 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

Curriculum provides early exposure to industry *company excursions*

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

 Go the **extra** mile



Staff from different Faculties and Departments

Health, Medicine & Life Sciences

Pharmacology
Toxicogenomics
Neuroscience



Psychology & Neuroscience

Neuropsychology & Psychopharmacology



University Hospital

Clinical Pharmacy & Toxicology



Flexibility to develop your own profile

 Go
the
mile **extra**

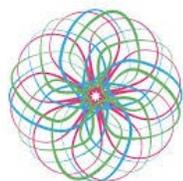
- Choose your position in the pipeline
 - Preclinical
 - In Vitro, Cell lines, Cell cultures
 - Big Data Neurogenomics, In-Silico Discovery
 - Preclinical Discovery, Animal Models, Psychopharmacology
 - Clinical
 - Test drugs or nutrients in volunteers or patients
 - Experimental Clinical Human Psychopharmacology
 - Clinical effects of medicines: Pharmacoepidemiology
- Electives – 5% of curriculum you choose yourself
- **Internship – 42% of your curriculum in Academia or Industry**



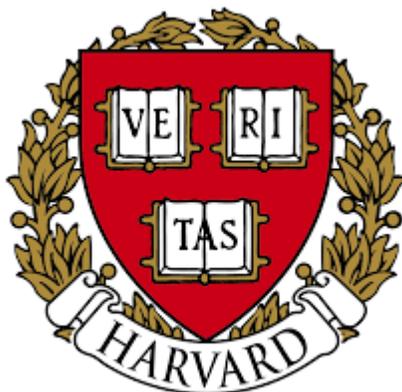
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COLUMBIA
UNIVERSITY



CHDR
Centre for Human Drug Research



Boston
Children's
Hospital

Until every child is well™



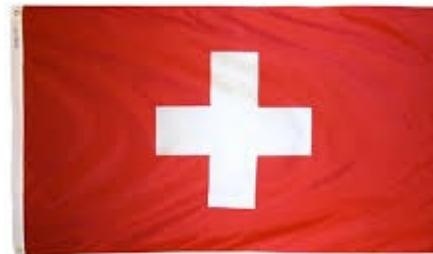
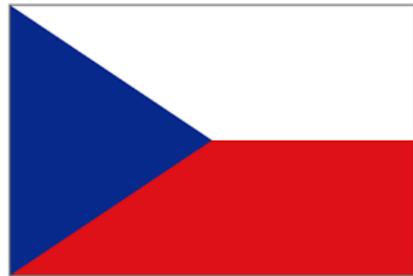
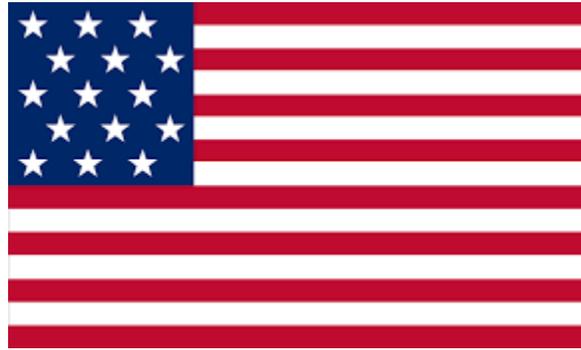
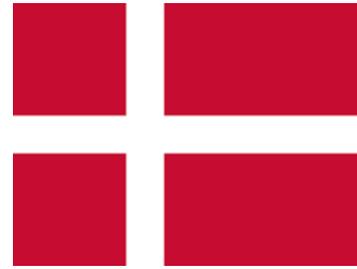
uOttawa



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Go
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mile



Many career paths for DN graduates

Go
the
mile
extra

academia

nutrition industry

pharmaceutical industry

consultancy

healthcare

contract research organizations

life sciences venture capitalists

governmental regulatory office

research consortia in EU or US

Who can apply

Students with a BA in:

- Neuroscience
- Psychology
- Biomedical Science
- Pharmacy
- Medicine
- Life Sciences
- Bioengineering
- University College
- Science College
- ...



FN & DN Class of 2021

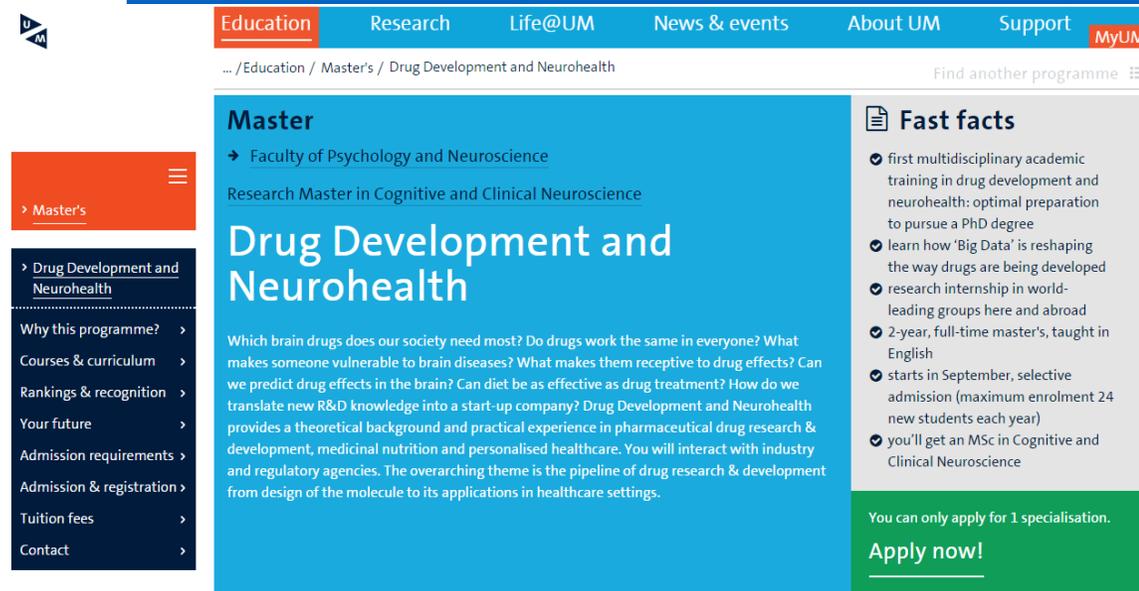
For more information

- Talk with student and coordinator after the presentation

- Contact DN coordinator: rudy.schreiber@maastrichtuniversity.nl

- Visit UM website:

Google:



The screenshot shows the Maastricht University website navigation and a specific program page. The top navigation bar includes 'Education', 'Research', 'Life@UM', 'News & events', 'About UM', and 'Support'. Below this, the breadcrumb trail reads '/Education / Master's / Drug Development and Neurohealth'. The main content area is titled 'Master' and 'Drug Development and Neurohealth', located in the Faculty of Psychology and Neuroscience. A sidebar on the left lists various program details like 'Why this programme?', 'Courses & curriculum', and 'Rankings & recognition'. On the right, a 'Fast facts' section lists key features of the program, such as being a first multidisciplinary academic training and offering a research internship. A green button at the bottom right says 'Apply now!'.

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

Newsletters

Contact DN coordinator: r.schreiber@maastrichtuniversity.nl



INSIDE THIS ISSUE

1. Welcome!
2. Experiencing the Dutch Neuroscience Meeting I
3. Experiencing the Dutch Neuroscience Meeting II
4. Life after NeuroHealth
5. Drughunter's corner
6. End of year 1 BBQ

"I like maverick approaches"
page 5



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)	72 318	57% (53 to 61)
2 Major depression	2.1 (2-4)	51 784	53% (49 to 59)
3 Iron-deficiency anaemia	3.6 (2-6)	36 663	-9% (-10 to -7)
4 Neck pain	4.3 (3-6)	34 348	54% (49 to 60)
5 Other hearing loss	5.3 (3-9)	32 580	51% (45 to 55)
6 Migraine	6.6 (3-10)	28 898	46% (41 to 50)
7 Diabetes	6.7 (5-9)	29 518	136% (127 to 144)
8 COPD	7.8 (4-10)	26 131	72% (67 to 79)
9 Anxiety disorders	8.5 (5-10)	24 356	42% (36 to 47)
10 Other musculoskeletal	9.2 (7-10)	22 644	79% (75 to 83)
11 Schizophrenia	11.5 (11-15)	15 204	52% (50 to 54)
12 Falls	12.7 (12-14)	12 818	23% (14 to 35)
13 Osteoarthritis	12.8 (11-15)	12 811	75% (73 to 78)
14 Refraction and accommodation	15.5 (11-22)	11 257	44% (40 to 47)
15 Asthma	16.1 (12-21)	10 596	32% (29 to 35)
16 Dysthymia	17.4 (14-21)	9 849	55% (52 to 57)
17 Bipolar disorder	17.5 (12-25)	9 911	49% (46 to 53)
18 Medication overuse headache	17.8 (12-27)	9 846	120% (109 to 134)
19 Other mental and substance	18.5 (14-24)	9 257	52% (50 to 54)
20 Dermatitis	18.8 (15-25)	9 278	37% (35 to 39)
21 Alzheimer's disease	22.2 (18-26)	7 774	92% (85 to 99)
22 Alcohol use disorders	23.0 (18-28)	7 654	34% (32 to 37)
23 Epilepsy	23.2 (18-30)	7 544	41% (28 to 57)
24 Edentulism	25.9 (21-31)	6 856	46% (43 to 48)
25 Diarrhoeal diseases	26.1 (23-30)	6 854	-7% (-9 to -5)

Go the extra mile

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