

# Does ranking make the world go round?

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**<http://www.cwts.nl/>**



# ‘Science of ranking’ deficient

- Rankings have become indispensable
- Method problems are political problems
- Key deficiencies:
  - Reduction multi-dimensional to 1-dimensional list
  - Lack of transparency of most global rankings
  - Data quality insufficient
  - Bad fit between ranking and diversity university missions



# CWTS Leiden Ranking

phys rev b

thin sol fi

j magn magn

ind eng res

geophys r l

env sci tec

atmos envir

nature

omaterial

p nas us

plos biol

bioc biop r

j clin micr

j immunol

blood

phys rev l

nucl inst a

appl optics

health phys

phi t roy b

faseb j

j nutr

j infec

diabetes

gastroenty

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Universiteit Leiden

## Leiden Ranking 2011

Select universities

Region:

World

Country:

All countries

Number of universities:

All universities

?

Select indicators

Dimension of scientific performance:

Impact

?

Rank universities based on:

MNCS

?

☒ Show stability intervals ?

Select method of calculation

☒ Calculate average performance per publication ?

☐ Assign collaborative publications fractionally to universities ?

☐ Leave out non-English publications ?

Rank	University	Country	P	MNCS	MNCS stability interval		
1	MIT		19307	2.34			
2	Princeton Univ		10855	2.17			
3	Stanford Univ		26968	2.06			

# Leiden ranking steps

- Selection of the region:
  - Global
  - Regional
  - Countries
- Selection of indicator:
  - Impact (P, MCS, MNCS, ppTop10%)
  - Collaboration (P, ppCollab, ppIntCollab, ppLongDistCollab, MGCD)
- Selection of calculation method:
  - Average or total performance
  - Fractional counting of co-publications
  - Include or exclude non-English publications





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Universiteit Leiden

## Leiden Ranking 2011

Select universities

Region: Europe

Country: All countries

Number of universities: 100 largest ?

Select indicators

Dimension of scientific performance: Impact ?

Rank universities based on: MNCS ? ☒ Show stability intervals ?

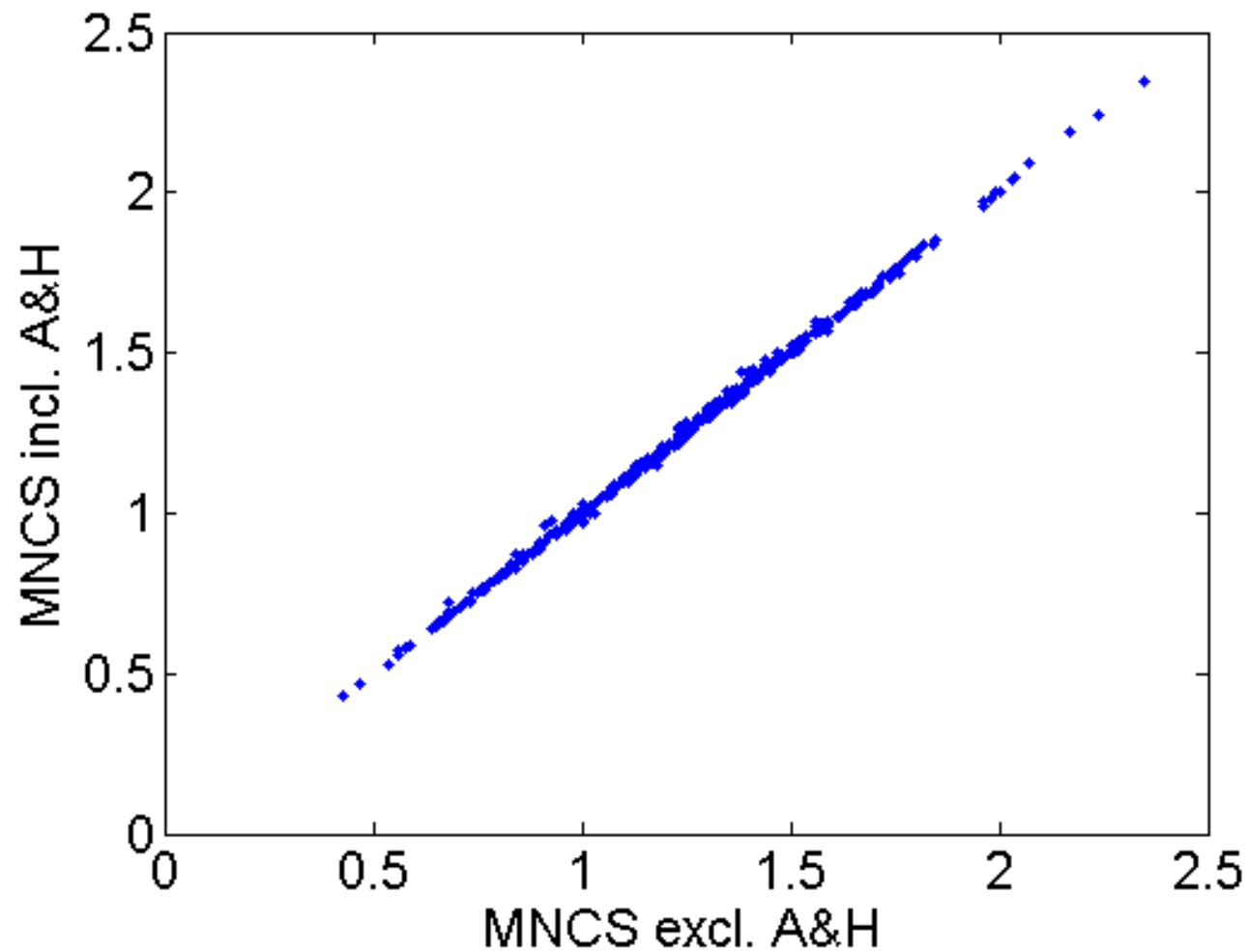
Select method of calculation

- ☒ Calculate average performance per publication ?
- ☐ Assign collaborative publications fractionally to universities ?
- ☐ Leave out non-English publications ?

Rank	University	Country	P	MNCS	MNCS stability interval
1	Ecole Polytechnique Federale Lausanne		8868	1.84	
2	Univ Cambridge		25073	1.75	
3	Univ Oxford		26161	1.70	
4	GA Univ Gottingen		9616	1.64	
5	ETH Zurich		15890	1.62	
6	Imperial Coll London		22280	1.58	

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The influence of Arts & Humanities on bibliometric university rankings is practically non-existent....



# EC-funded project (2009-2011)

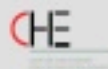
On the design and testing the feasibility  
of a new, multidimensional, global  
transparency instrument

*by:*

**CHERPA:** the Consortium for Higher Education  
and Research Performance Assessment



**CHEPS:** Center for Higher education policy Studies (*lead partner*)



**CHE:** Centre for Higher Education (*lead partner*)



**CWTS:** Center for Science and Technology Studies



**Incentim:** International Centre for Research on Entrepreneurship,  
Technology and Innovation Management



**OST:** Observatoire des Sciences et des Techniques



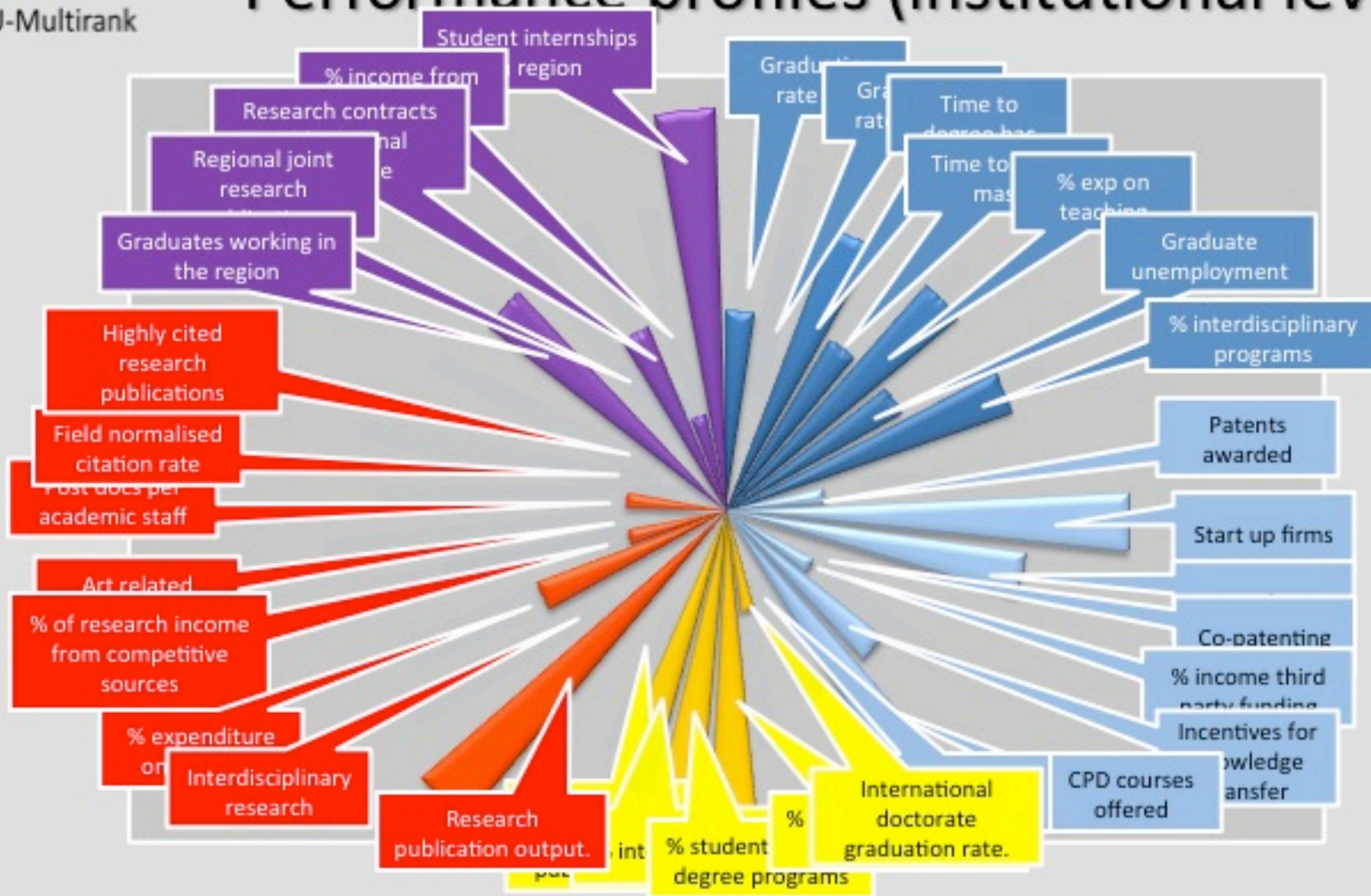


# U-Multirank design principles

- Basic ***epistemological argument***: all observations of reality are conceptually driven, there is no objective ranking
- Rankings should be based on interests and priorities of its users: ***the principle of user-drivenness***
- Higher education and research institutions are predominantly multi-purpose: ***the principle of multi-dimensionality***
- Higher education and research institutions are generally combinations of different faculties, departments, and programs and show internal diversity: ***the principle of multi-levelness***
- Rankings are only useful if institutions/ programs are compared that are sufficiently similar: ***the principle of comparability***
- The instrument should refrain from methodological mistakes: ***the principle of methodological soundness***



# Performance profiles (institutional level)



# Ranking (field specific )

	Teaching & Learning			Research			Knowledge transfer		international orientation			Regional engagement			
code of institution	student staff ratio	graduation rate	qualification of academic staff	research publication output	external research income	citation index	% income third party funding	CPD courses offered	startup firms	international academic staff	% international students	joint international publ.	graduates working in the region	student internships in local enterprise	regional co-publication
4		.	.												
98							.								
111														.	
148															
152					.										
196															.
222					.			.		.					
293												.			





### Teaching & learning

- ☐ student staff ratio
- ☐ graduation rate
- ☐ investments in laboratories
- ☐ qualification of academic staff
- ☒ rel. graduate unemployment rate
- ☐ interdisciplinarity of programs
- ☐ inclusion of employability issues
- ☒ inclusion of work experience in program
- ☐ computer facilities: internet access
- ☐ student gender balance

### Teaching & learning; student satisfaction

- ☐ overall judgement of program
- ☐ evaluation of teaching
- ☒ facilities (libraries)
- ☒ facilities (IT)
- ☐ organisation of program
- ☐ research orientation of ed. program
- ☒ inclusion of work experience
- ☐ quality of courses
- ☐ social climate
- ☐ support by teachers
- ☐ opportunities to stay abroad

### Research

- ☐ external research income
- ☐ research publication output
- ☐ doctorate productivity
- ☐ field normalised citation rate
- ☐ highly cited research publications

### Knowledge transfer

- ☐ ac. staff with non-HE experience
- ☐ joint research contracts priv sector
- ☐ university-industry joint publications

### International orientation

- ☒ incoming and outgoing exch students
- ☒ international orientation of programs
- ☐ international academic staff
- ☐ international research grants
- ☐ international joint research publ.
- ☐ % international students
- ☐ internat doctorate graduation rate

### Regional engagement

- ☐ graduates working in the region
- ☐ degree theses with req. enterprise
- ☐ regional participation in continuing ed.
- ☐ summer schools sec.ed.students
- ☒ student internships in region



# Selection of benchmark institutions (1)

## Teaching & learning

Subjects covered

- ☐ *specialised*  
☐ *comprehensive/broad*

Degree level focus

- ☐ *doctorate/master*  
☒ *bachelor*

Orientation of degrees

- ☐ *general formative*  
☐ *professional*

% Expenditure on teaching

- ☐ *major/substantial*  
☐ *some/none*

## Student profile

Mature students

- ☐ *major/substantial*  
☐ *some/none*

Part time students

- ☒ *major/substantial*  
☐ *some/none*

Distance education

- ☐ *major/substantial*  
☐ *some/none*

Total enrolment

- ☐ *very large/ large*  
☐ *medium sized/ small*

## Research involvement

Academic publications

- ☐ *major/ substantial*  
☐ *some/ none*

Professional publications

- ☒ *major/ substantial*  
☐ *some/ none*

Other research products

- ☐ *major/ substantial*  
☒ *some/ none*

Doctorate production

- ☐ *major/ substantial*  
☐ *some/ none*

% Expenditure on research

- ☒ *major/ substantial*  
☐ *some/ none*

## Knowledge transfer

Start-up firms

- ☐ *major/ substantial*  
☐ *some/ none*

Patent applications

- ☐ *major/ substantial*  
☐ *some/ none*

Cultural activities

- ☒ *major/ substantial*  
☐ *some/ none*

Income knowledge transfer

- ☒ *major/ substantial*  
☐ *some/ none*



## Selection of benchmark institutions (2)

### International orientation

Exchange stud; incoming

- ☐ *major/substantial*  
☒ *some/none*

Exchange stud; sent out

- ☐ *major/substantial*  
☐ *some/none*

Foreign degree seeking stud

- ☐ *major/substantial*  
☐ *some/none*

Non-national academic staff

- ☐ *major/ substantial*  
☐ *some/ none*

Income from internat sources

- ☐ *major/ substantial*  
☐ *some/ none*

### Regional engagement

Graduates in the region

- ☐ *major/substantial*  
☐ *some/none*

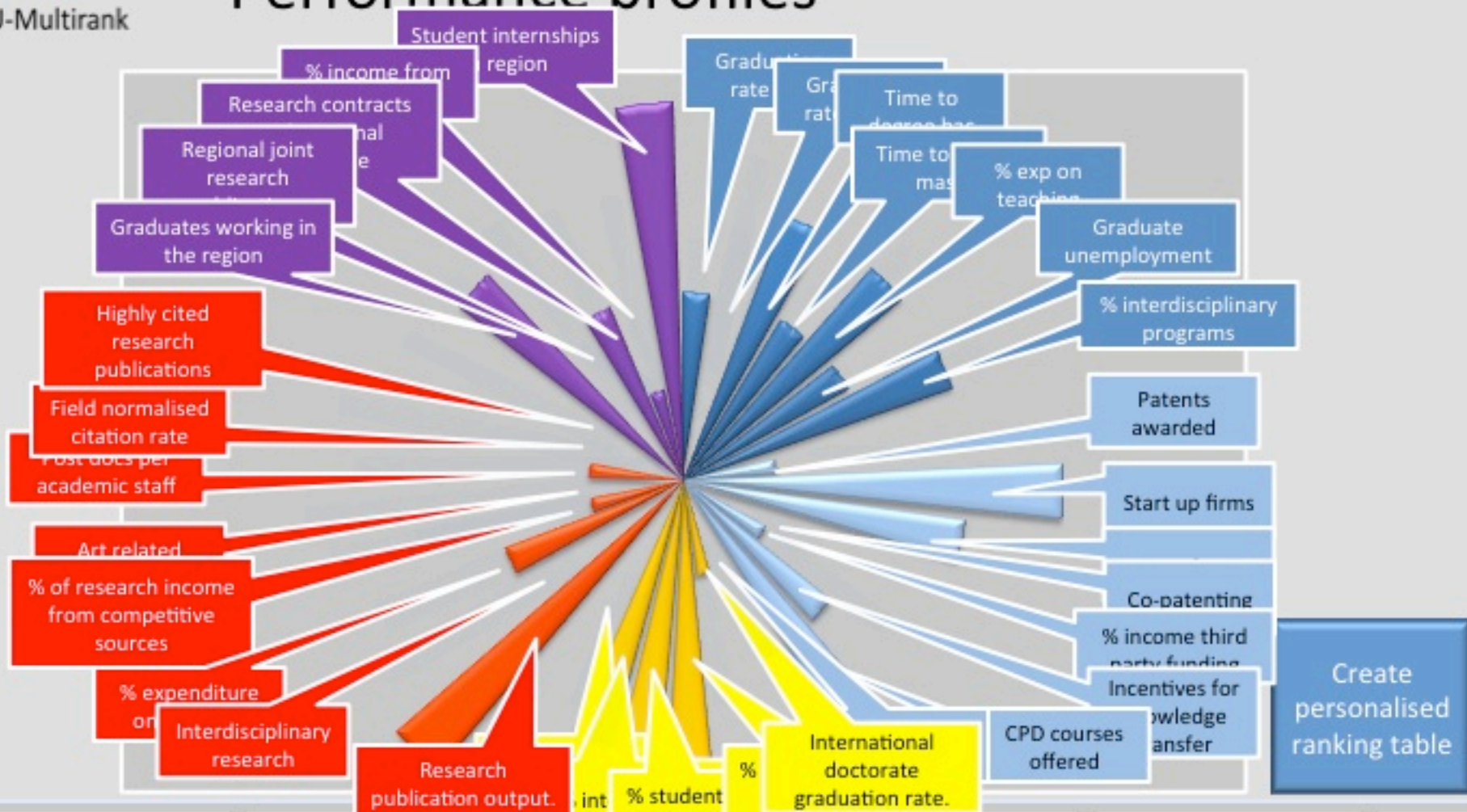
New entrants from region

- ☒ *major/substantial*  
☐ *some/none*

Income from regional sources

- ☐ *major/substantial*  
☐ *some/none*

# Performance profiles



4



98



111



148



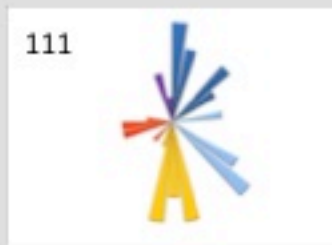
152









196





# Personalised institutional ranking



code of institution	% income third party funding	incentives for KT	CPD courses offered	Res contract with regional firms	% Income from regional sources	Student internships in region
4				NA		NA
98	NA					
111			NA	NA		
148						
152	NA			NA		
196						
222	NA					NA
293						

sort      

# Background information

Name of institution: 293

Address

URL

Mission statement



U-Map profile



U-Multirank profile



- [www.u-multirank.eu](http://www.u-multirank.eu)
- Demonstration version of tool
- Prototype web version to be developed during the possible next project phase (2012-2015)