

**UFG**  
UNIVERSIDADE  
FEDERAL DE GOIÁS

**Laerte Ferreira**

# Graduate College

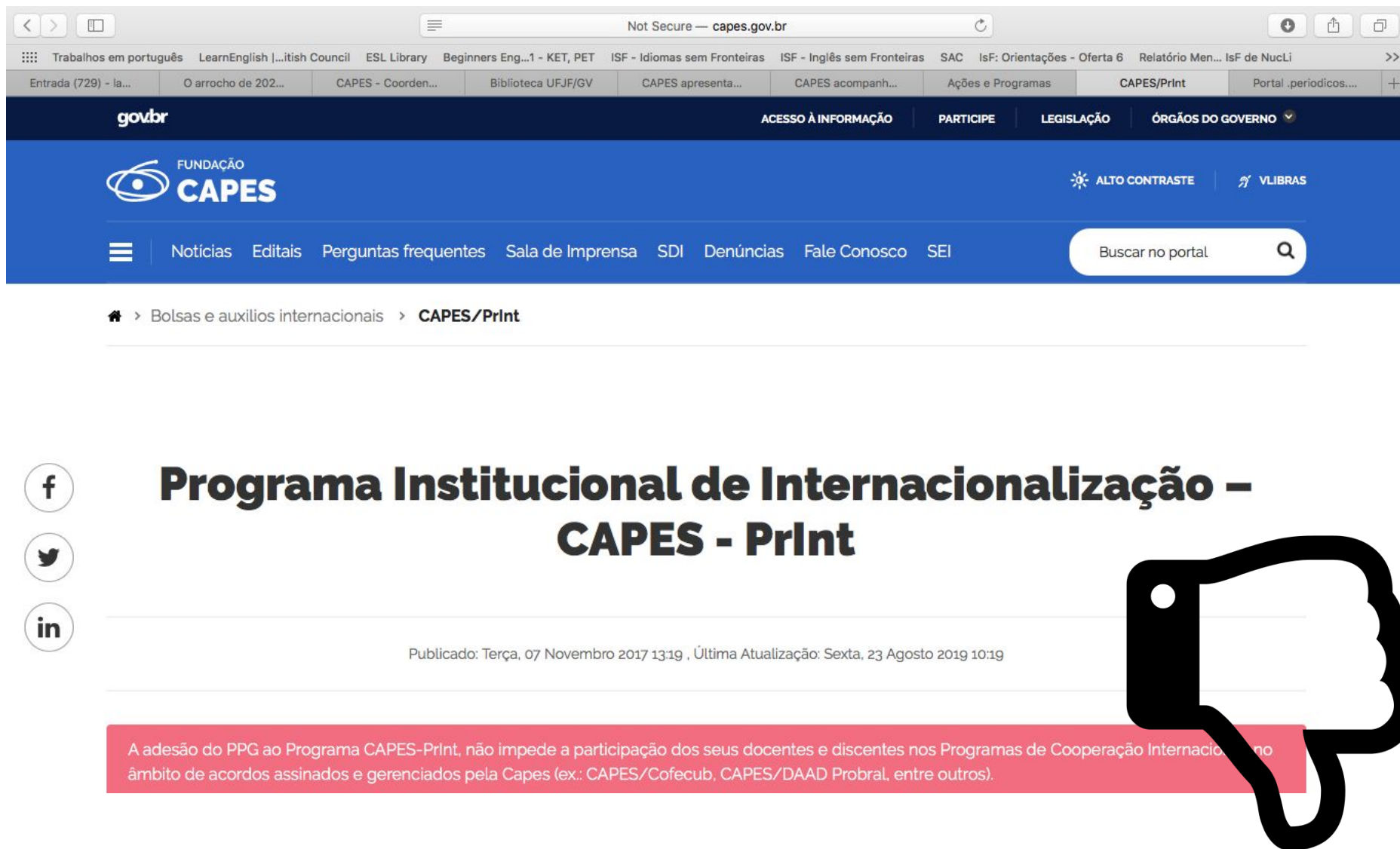
Graduate studies & internationalization at UFG  
current status, challenges & perspectives



**About the invitation to be here...**



# About the invitation to be here...



The screenshot shows the CAPES.gov.br website. The header includes the gov.br logo, the FUNDAÇÃO CAPES logo, and navigation links such as ACESSO À INFORMAÇÃO, PARTICIPE, LEGISLAÇÃO, and ÓRGÃOS DO GOVERNO. The main title is "Programa Institucional de Internacionalização – CAPES - Print". Below the title, it says "Publicado: Terça, 07 Novembro 2017 13:19 , Última Atualização: Sexta, 23 Agosto 2019 10:19". A pink banner at the bottom contains the text: "A adesão do PPG ao Programa CAPES-Print, não impede a participação dos seus docentes e discentes nos Programas de Cooperação Internacional no âmbito de acordos assinados e gerenciados pela Capes (ex.: CAPES/Cofecub, CAPES/DAAD Probral, entre outros).". A large black hand-drawn megaphone icon is overlaid on the right side of the page.

gov.br

ACESSO À INFORMAÇÃO PARTICIPE LEGISLAÇÃO ÓRGÃOS DO GOVERNO

FUNDAÇÃO CAPES

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## Programa Institucional de Internacionalização – CAPES - Print

Publicado: Terça, 07 Novembro 2017 13:19 , Última Atualização: Sexta, 23 Agosto 2019 10:19

A adesão do PPG ao Programa CAPES-Print, não impede a participação dos seus docentes e discentes nos Programas de Cooperação Internacional no âmbito de acordos assinados e gerenciados pela Capes (ex.: CAPES/Cofecub, CAPES/DAAD Probral, entre outros).

# About the invitation to be here...

**University of Arizona (UofA)**



**UnB**



# About the invitation to be here...

University of Arizona (UofA)

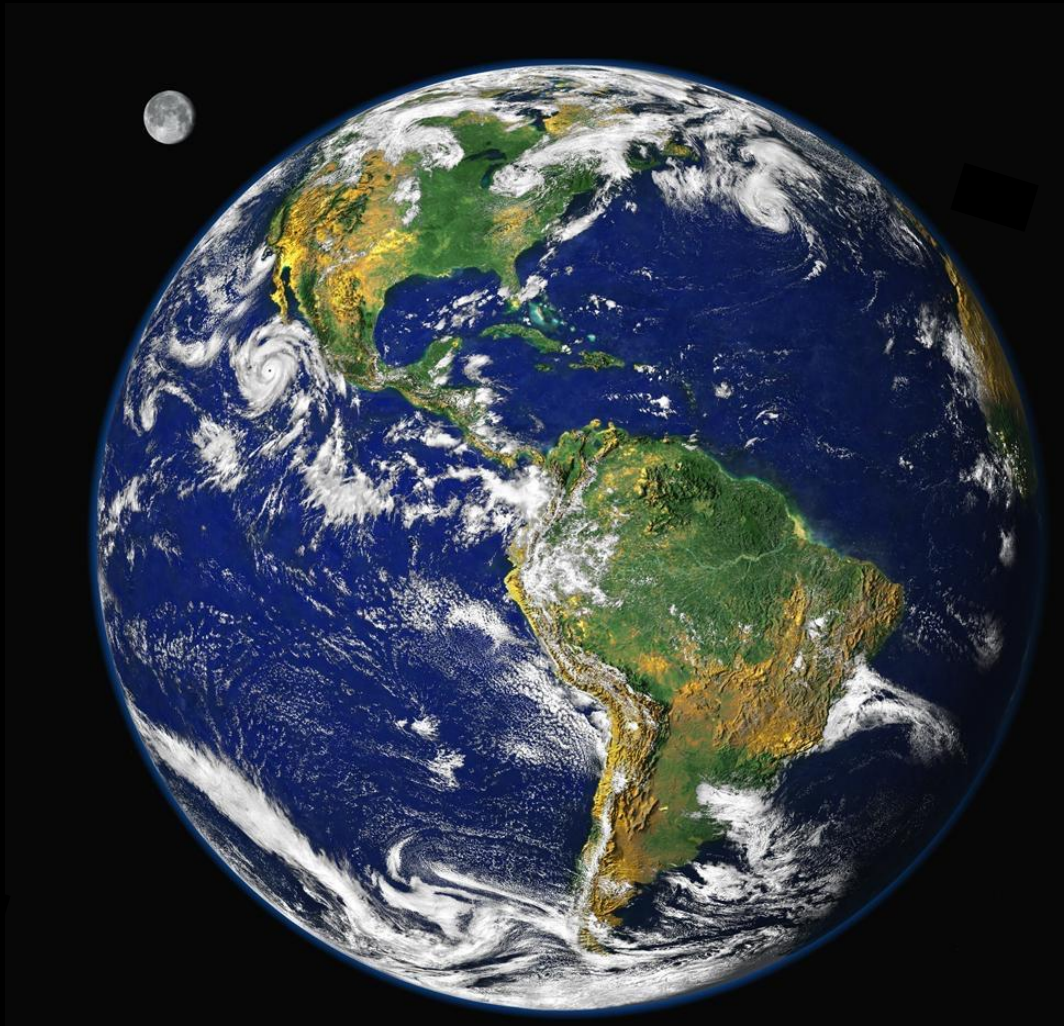


UT at Austin



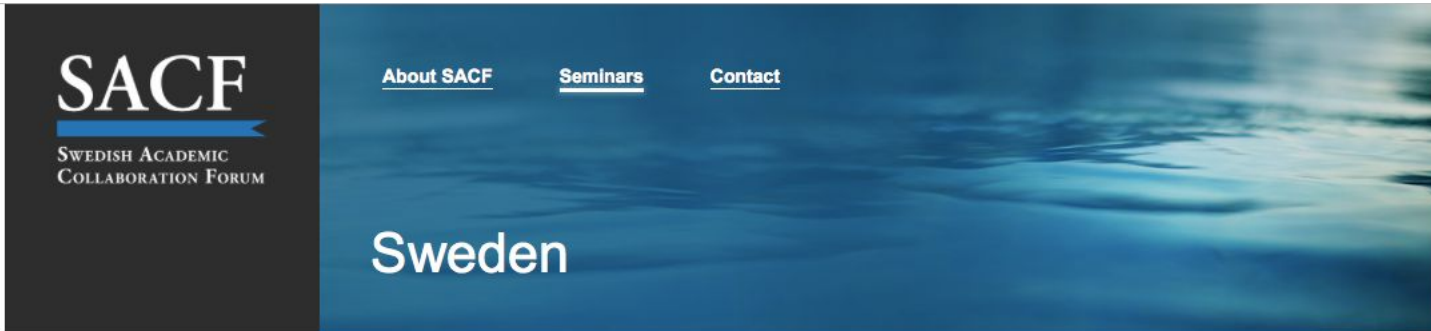
UnB

# Why internationalization?



*Higher education more responsive to the challenges of a global society (VUCA)*

# A world eager and in need of collaboration...



## UPCOMING SEMINARS

### NEWS

17 feb 2017

**"Collaboration is about relations" – successful closing meeting of academic collaboration forum project**

31 jan 2017

**Stockholm meeting closes international research collaboration project**

4 may 2016

**Top Brazilian and Swedish universities join together for the fifth SACF Excellence Seminar**

23 feb 2016

**Indonesia and Sweden mutually agree on relevant research issues**

22 jan 2016

**SACF implements a Scientific Committee**

[All news >](#)

## STOCKHOLM EXCELLENCE SEMINAR

[Background](#)  
[Program](#)  
[Practical Information](#)  
[Contact Information](#)




### BACKGROUND

The sixth and final joint SACF seminar will be held in Stockholm, Sweden in February 2017. Between 13-16 February 2017 participants will discuss the future of international research collaboration and sum up the achievements from the past two years of exciting research seminars in the Republic of Korea,

## PARTICIPATING UNIVERSITIES





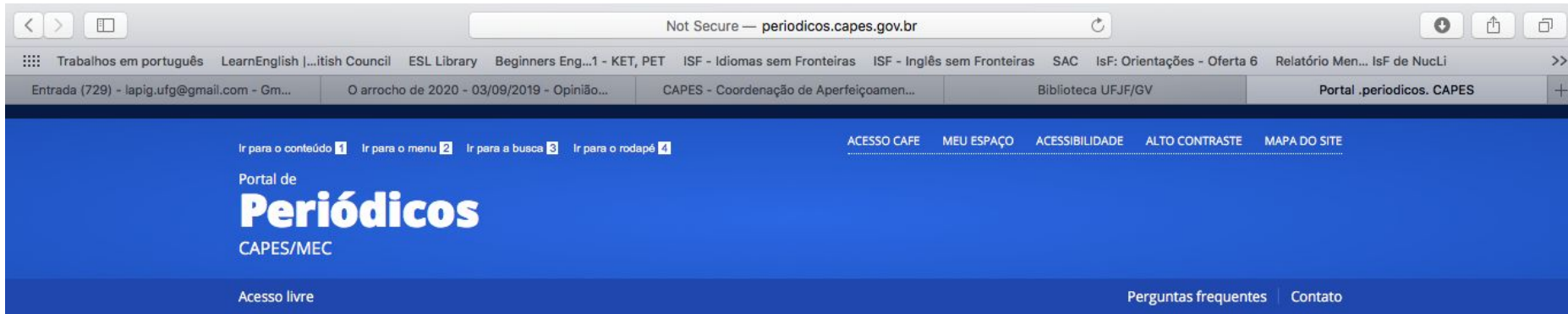
# Post-graduation in Brazil: an example of a successful public policy

**July 11, 1951** - “Campanha Nacional de Aperfeiçoamento de Pessoal de Nível Superior”, under the leadership of Anísio Teixeira (beginning of the second Vargas government, whose motto was the building of a developed and independent nation...)

In 1953, the University Program was implemented, Capes' main line with universities and institutes of higher education. Teixeira hires foreign visiting professors, stimulates interchange and cooperation activities among institutions, grants scholarships and supports events of a scientific nature.

**In 1965:** 27 courses are classified at the master's level and 11 at the doctoral level.

# Post-graduation in Brazil: an example of a successful public policy



A base de conhecimentos  
globais de informação e  
análises da OCDE.



**BUSCA**

**Assunto**

**Periódico**

**Livro**

**Base**

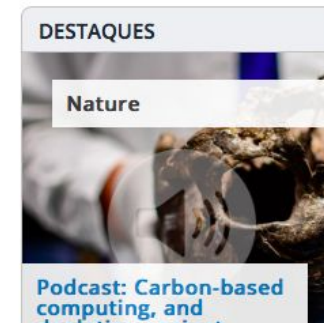
**BUSCAR ASSUNTO**

 Insira DOI/PMID ou termo de busca **Enviar**

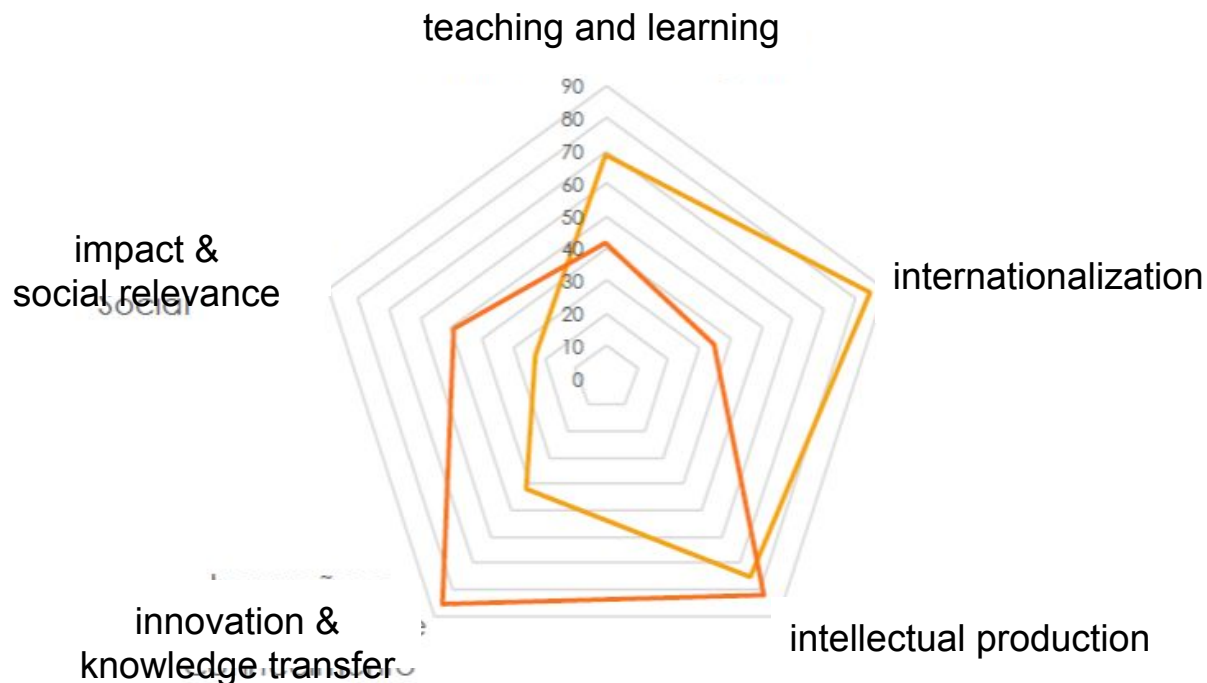
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 Inserir termo **Enviar**

[Busca avançada](#)



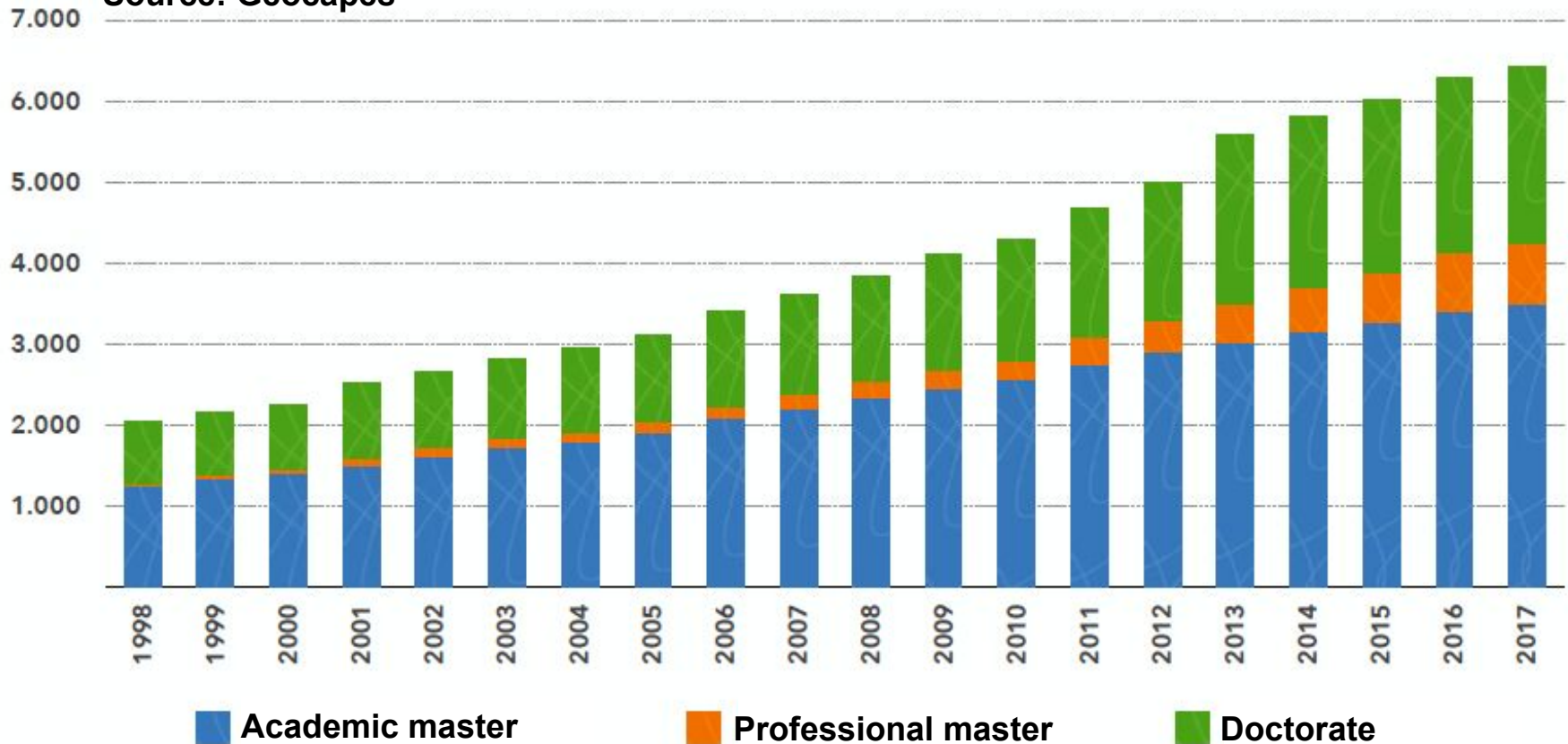
# Post-graduation assessment: a successful and continuous strategy



**Faculty → Researchers → Leaders**

# Post-graduation in Brazil: a trajectory of success, in number and in quality

Source: Geocapes



responsible for the scientific and technological outcomes in the country...

Brazil ranks **14th** and **24th** in global academic **production** and **impact**

# Graduate Programs in Brazil

4564 programs

3636 master courses (837 professional)

2380 doctoral courses (24 professional)










~200k doctors...

# Graduate Programs in Brazil

**Despite Brazilian entrepreneurism, the country ranks at the bottom of the innovation index compared to developed and other BRIC economies ...**

Global Innovation Index  
Rank

	Global Innovation Index	Institutions	Human capital and research	Infrastructure	Market sophistication	Business sophistication	Knowledge and technology outputs	Creative outputs
 United States	6	13	21	24	1	8	6	14
 France	16	21	11	10	11	19	19	12
 China	17	70	23	29	25	9	5	21
 Russia	46	74	22	63	56	33	47	72
 Chile	47	37	61	53	54	48	48	58
 India	57	80	56	77	36	64	43	75
 Brazil	64	82	52	64	82	38	64	78

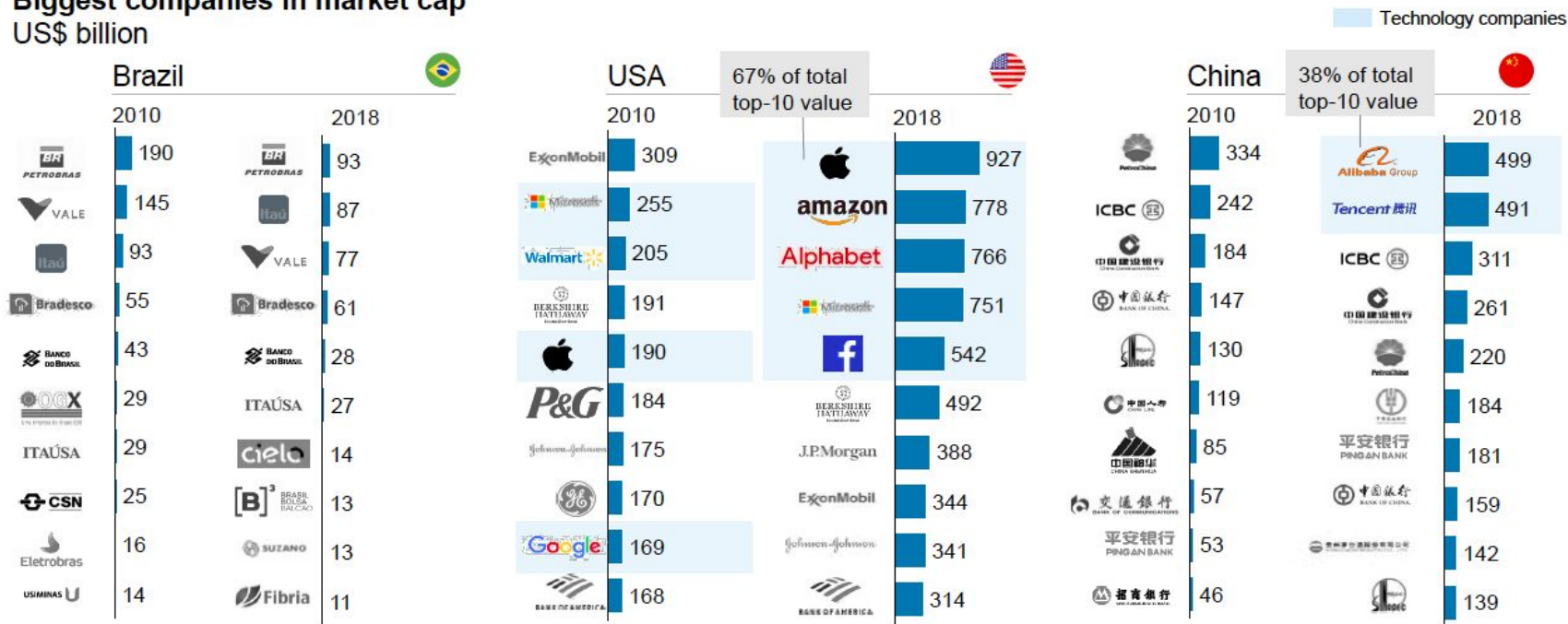
Ease of starting a business and business environment

Credit and tariff rate applied pulling the variable down

# Graduate Programs in Brazil

Brazil's top companies are similar, with no significant technology players like those in the US and China

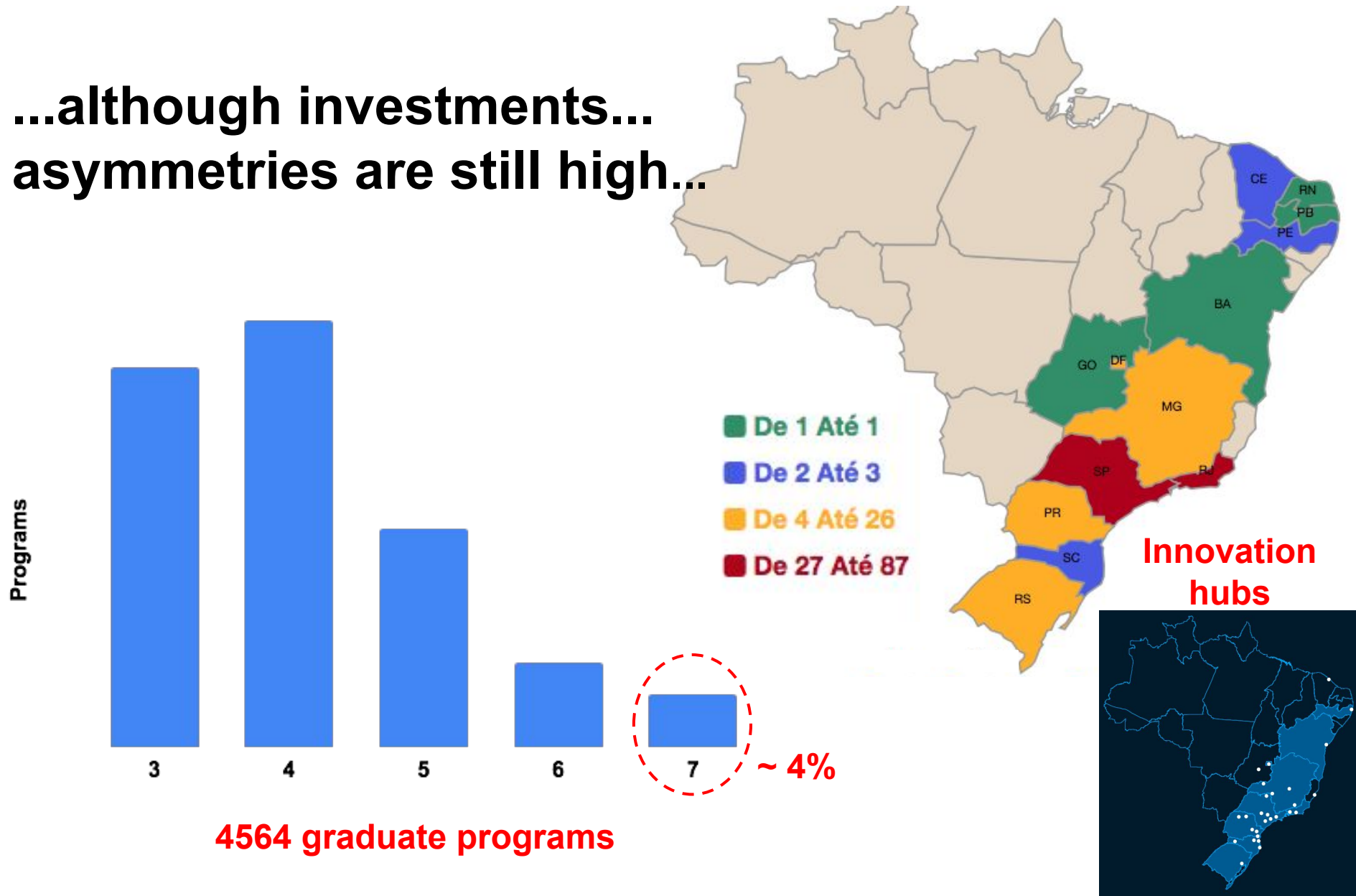
Biggest companies in market cap  
US\$ billion



Source: Forbes 2000; Capital IQ

# Graduate Programs in Brazil

...although investments...  
asymmetries are still high...



# Graduate Studies at UFG

82 programs

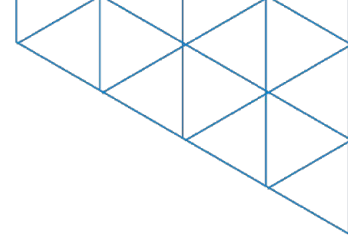
75 master courses (13 professional)

44 doctoral courses



~ 1,400 faculty, 4,000 students...

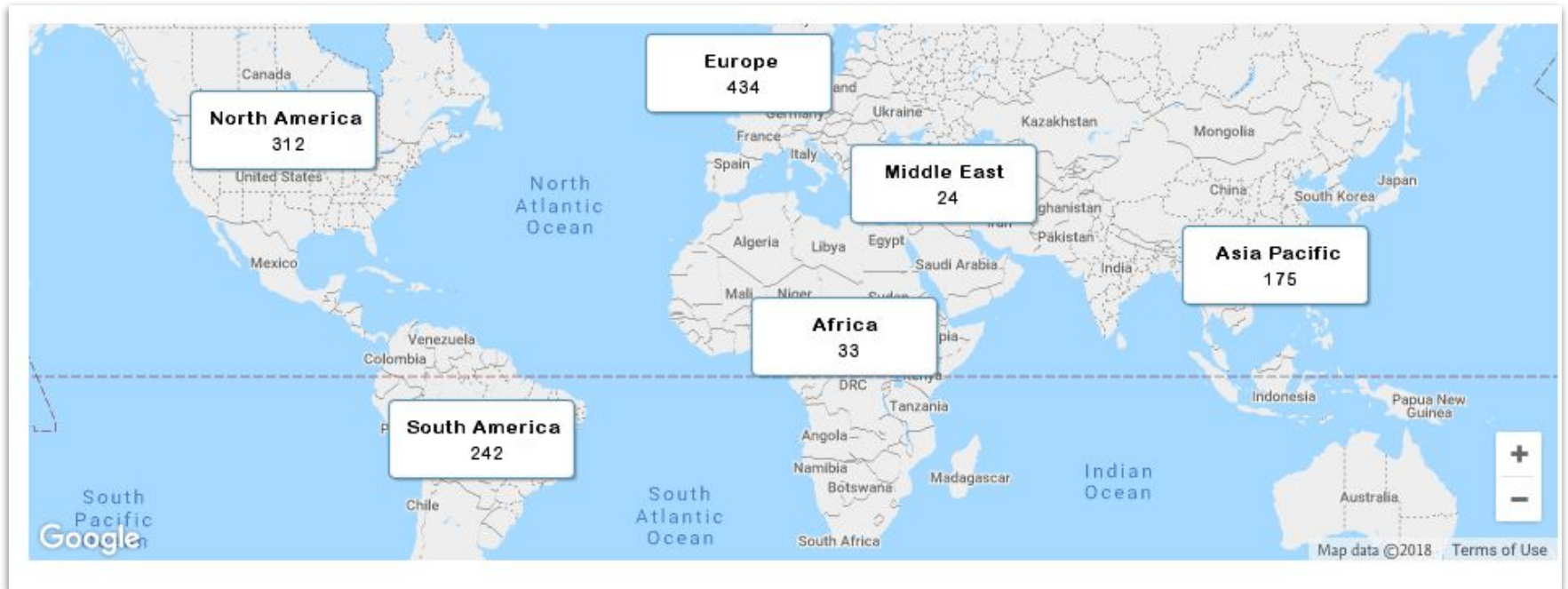
# International collaboration is instrumental...



	% of publications	Publications	Citations	Citations per publication	Field-weighted citation impact
International collaboration	21.8	1261	11156	8.8	1.61
National collaboration	51.3	2977	9979	3.4	0.60
Institutional collaboration	23.5	1364	4026	3.0	0.53
Single authorship	3.4	197	231	1.2	0.26

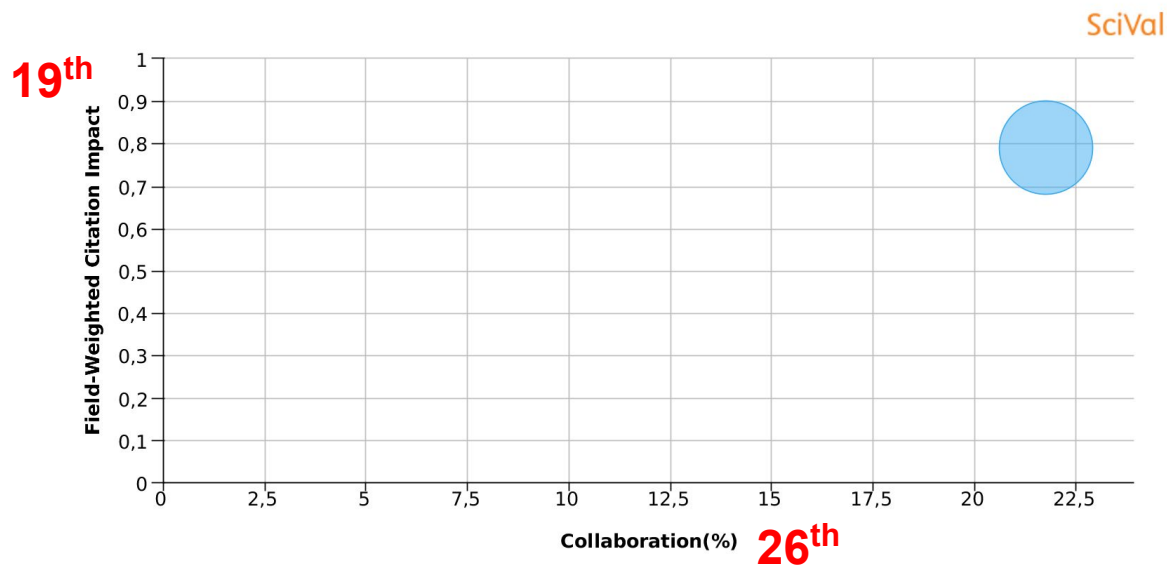


# With whom UFG collaborates...



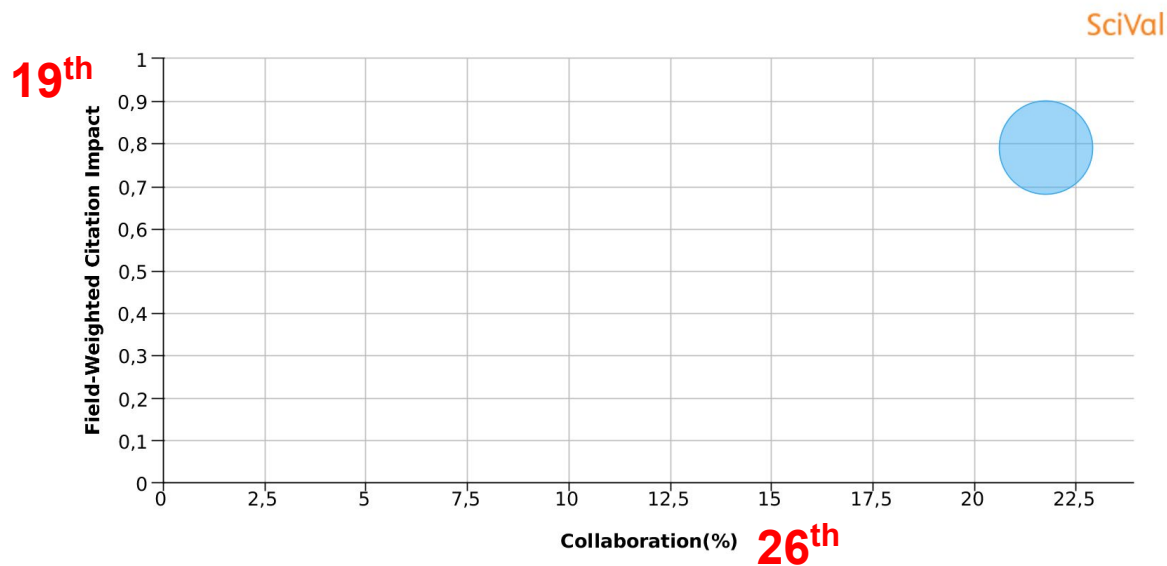
**1221 institutions in the world (2013 - 2017)**

# UFG performance... (2013 - 2017)



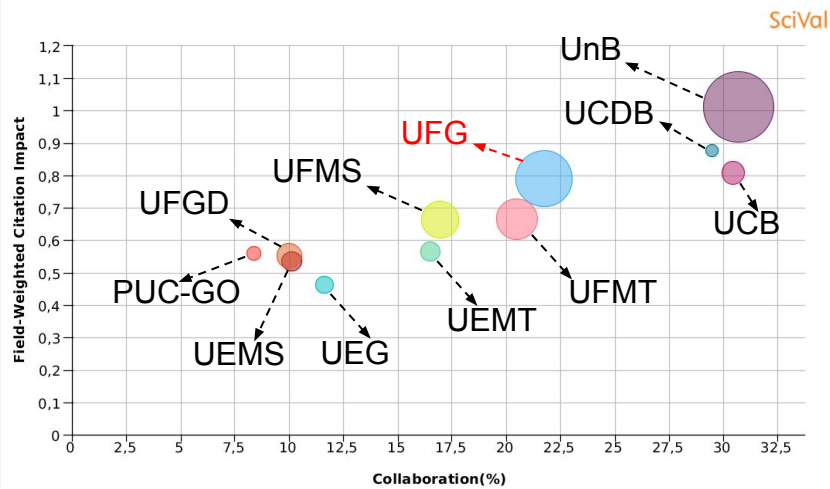
	Brazil	UFG
International collaboration	29.4%	21.8%
Field-weighted citation impact	0.88	0.79
Publication in top 10% most cited worldwide	9.1%	9%
Academic-corporate collaboration	1.4%	1%

# UFG performance... (2013 - 2017)

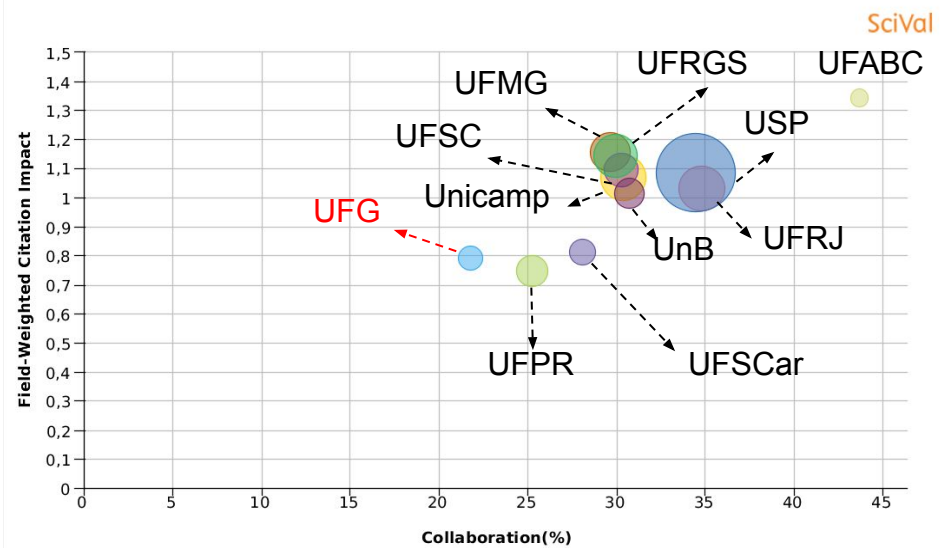
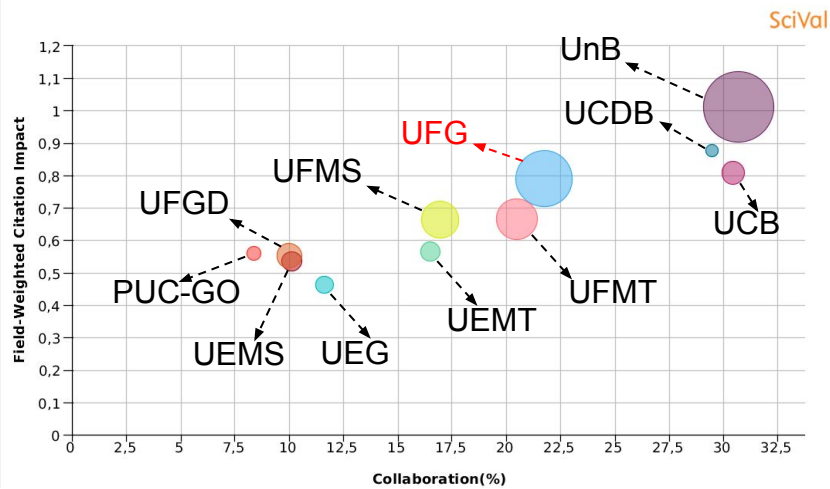


	Brazil	Argentina	USA	Sweden
<b>International collaboration</b>	<b>29.4%</b>	<b>42.5%</b>	<b>32.0%</b>	<b>58.7%</b>
<b>Field-weighted citation impact</b>	<b>0.88</b>	<b>1.00</b>	<b>1.45</b>	<b>1.69</b>
<b>Publication in top 10% most cited worldwide</b>	<b>9.1%</b>	<b>9.8%</b>	<b>16.3%</b>	<b>19.2%</b>
<b>Academic-corporate collaboration</b>	<b>1.4%</b>	<b>1.3%</b>	<b>3.3%</b>	<b>5.3%</b>

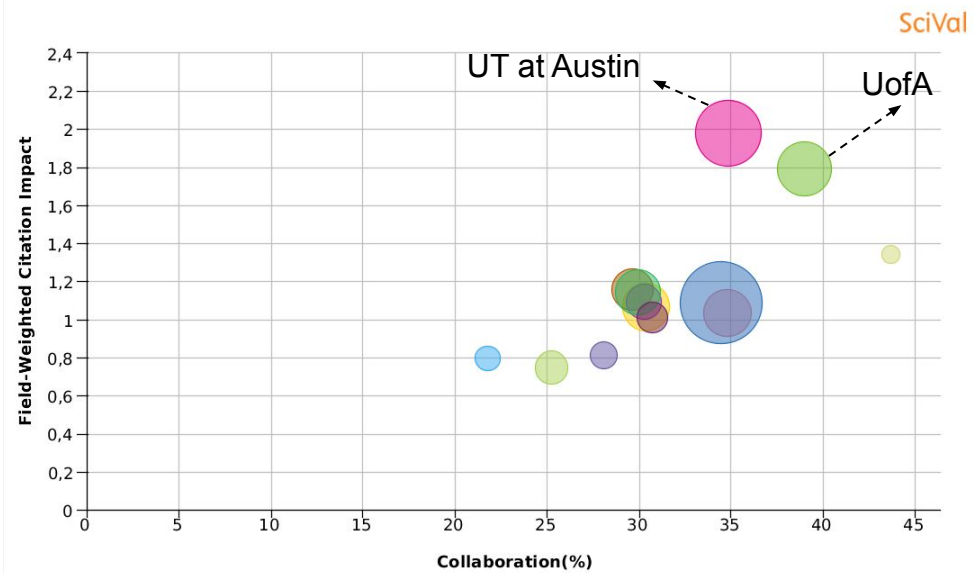
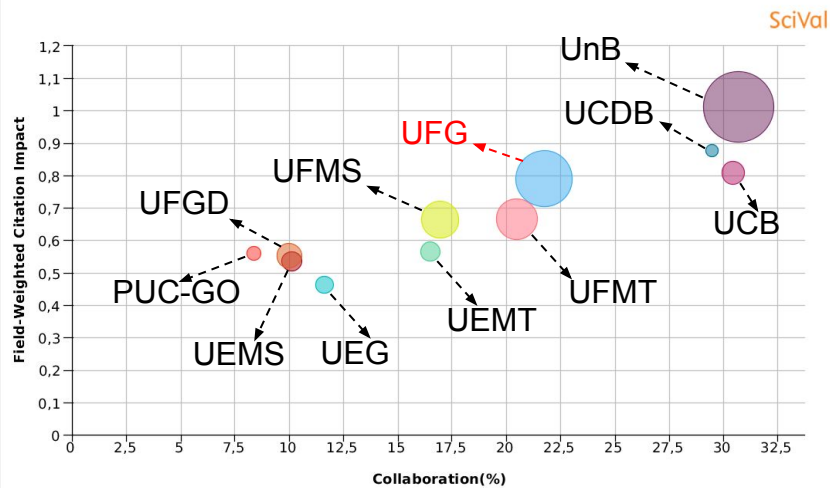
# UFG performance... (2013 - 2017)



# UFG performance... (2013 - 2017)

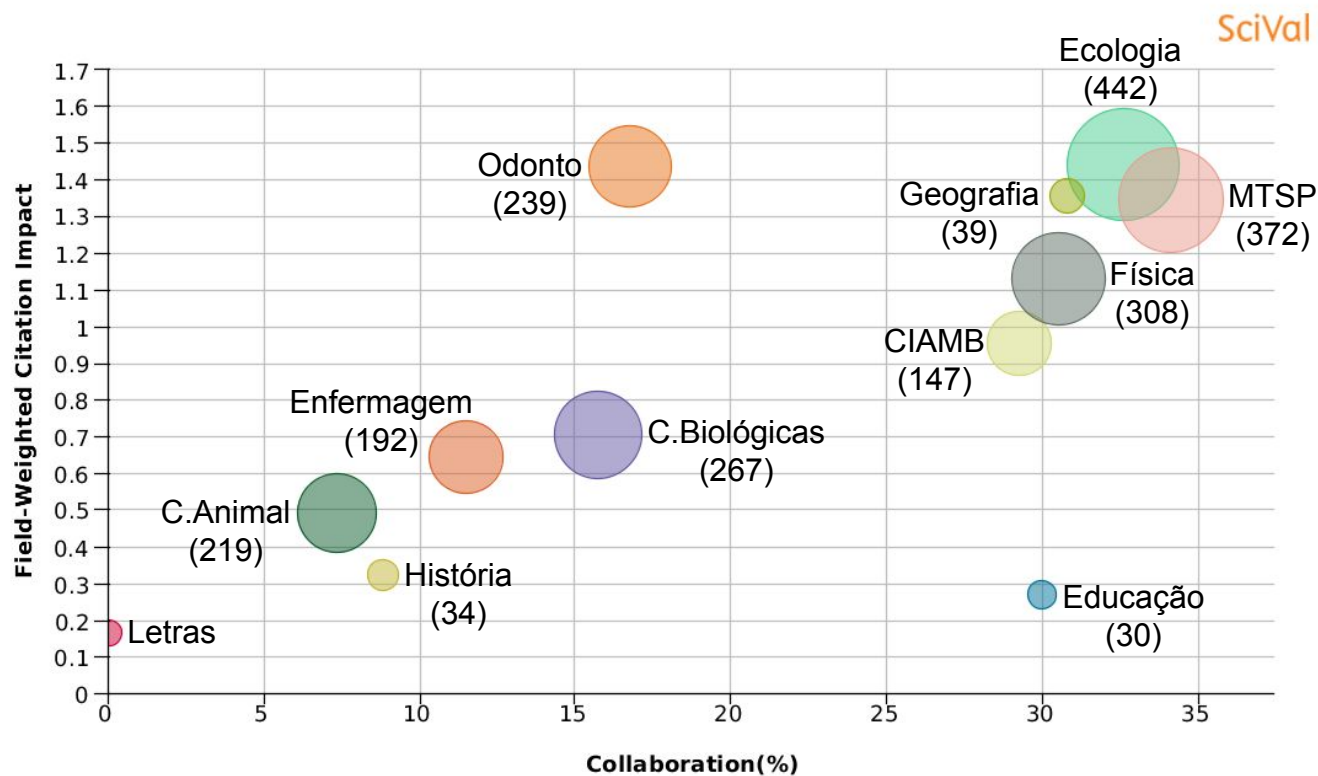


# UFG performance... (2013 - 2017)

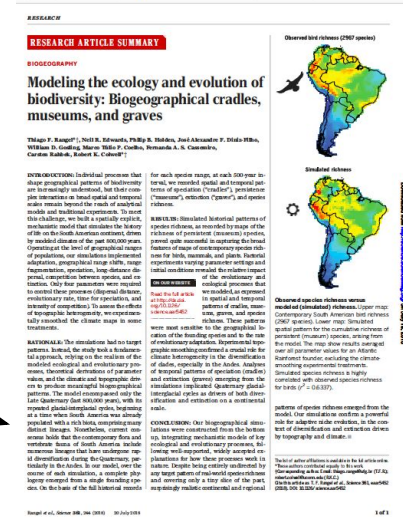
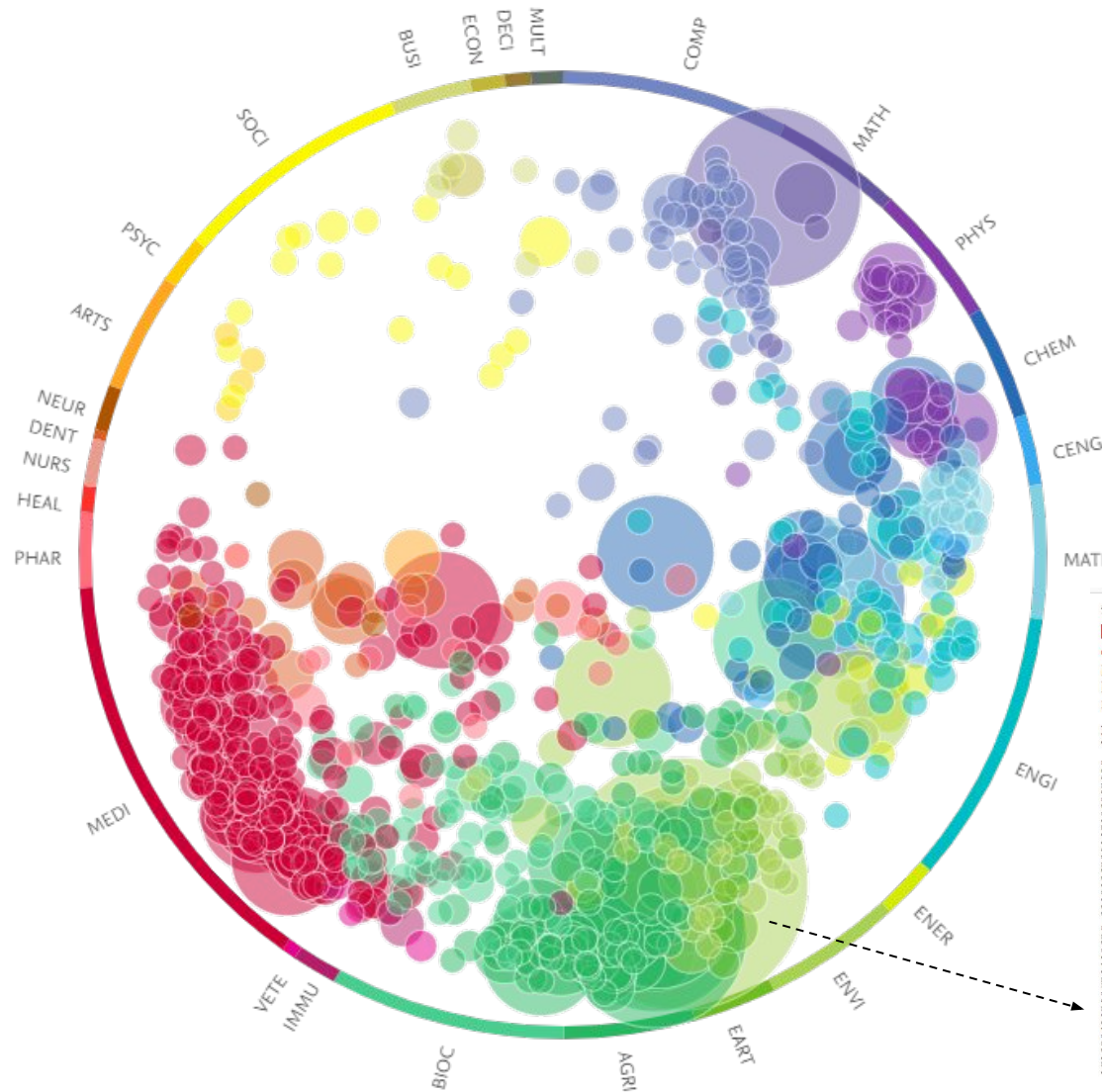




# How are our graduate programs performing?

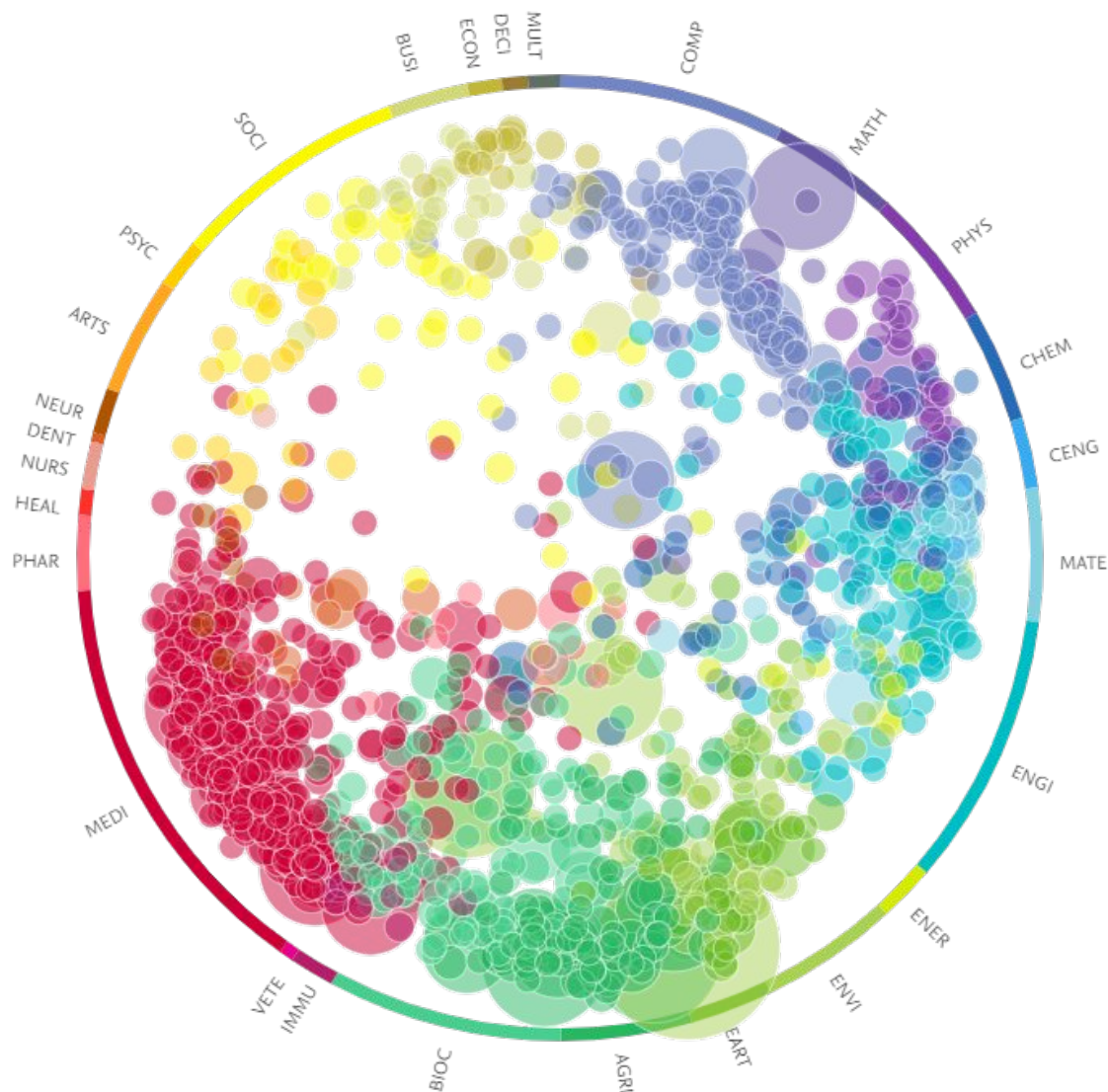


# Key research topics at UFG (2013 - 2017)



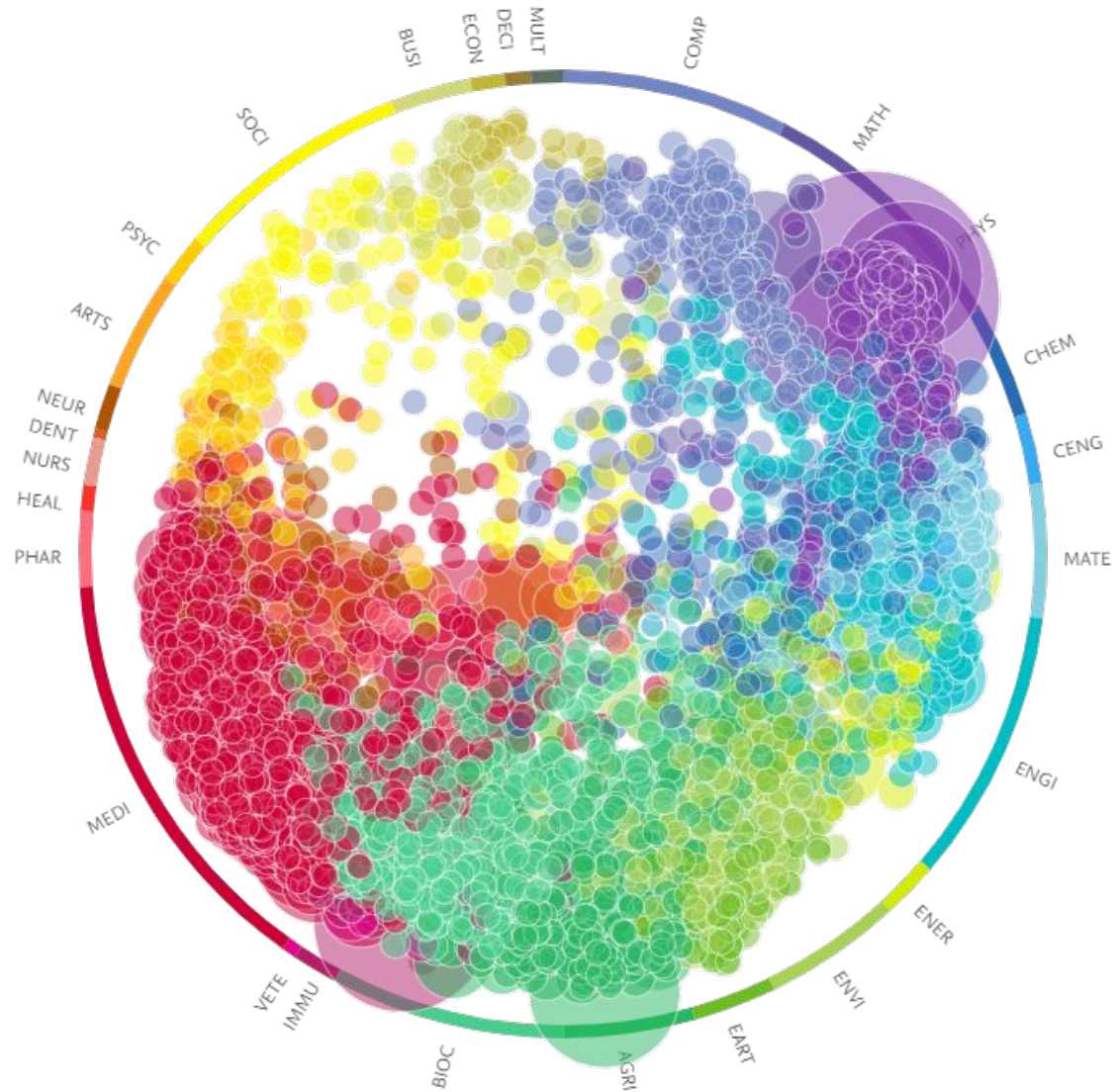
Top 10% most relevant publications, comprising **2944 topics**

# Key research topics at UnB (2013 - 2017)



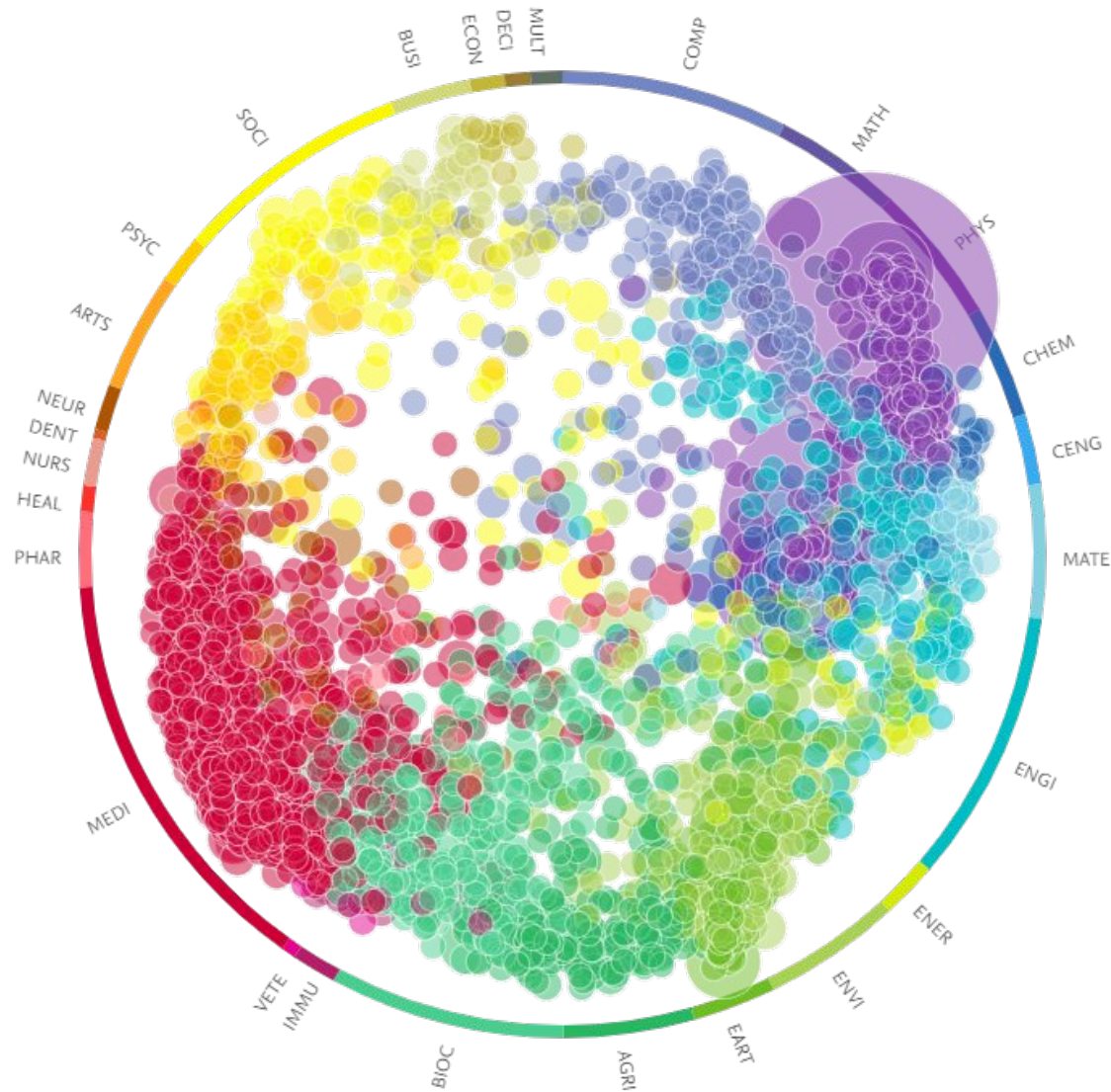
Top 10% most relevant publications, comprising **4542 topics**

# Key research topics at USP (2013 - 2017)



Top 10% most relevant publications, comprising **20243 topics**

# Key research topics at Univ. of Arizona (2013 - 2017)



Top 10% most relevant publications, comprising **10682 topics**

# Internationalization strategies...

We want to promote at the Federal University of Goiás a research environment that is truly international and situated at the frontier of knowledge...

... by attracting young researchers and fostering the qualification of our young graduates

**Increase synergy among graduate programs...**

**Improve interdisciplinary thinking...**

# Research themes

## 1- Food Security, Agrarian Development and Sustainability

- *Environmental Science, Animal Science, Agribusiness, Agronomy, Food Science and Technology, Genetics and Plant Breeding, Zootechny, Animal Bioscience, Agrarian Law*

## 2- Biodiversity, Management and Conservation of Natural Resources

- *Ecology and Evolution, Animal Biodiversity, Environmental Science, Genetics and Molecular Biology, Genetics and Plant Breeding, Geography, Geography*

## 3- Frontiers in Health, Therapeutics, Biology and Biotechnology

- *Biological Sciences, Genetics and Molecular Biology, Parasitology, Pharmaceutical Science, Pharmaceutical Innovation, Pharmaceutical Nanotechnology, Nursing, Tropical Medicine and Public Health, Dentistry, Health Sciences, Health and Nutrition*

**44 graduate programs with CAPES score > 4**

# Research themes

## 4- Innovation and Development in Science, New Materials and Nanoscale Technologies

- *Chemistry, Physics, Mathematics, Computer Science, Exact and Technological Sciences, Pharmaceutical Science, Pharmaceutical Nanotechnology, Genetics and Molecular Biology,*

## 5- Organizations, Infrastructure, Public Policy and Regional Development

- *Geography, Electrical and Computer Engineering, Business Management, Geotechnical, Structural and Civil Engineering, Organizational Management, Computer Science*

## 6- Languages, Cultures and Societies

- *Education, History, Languages and Linguistics, Social Anthropology, Visual Art and Culture, STEM Education, Philosophy, Communication, Human Rights, Language Studies*

**44 graduate programs with CAPES score > 4**

**Well-equipped  
laboratories**



# Weaknesses: English is still our main barrier...

inglessemfronteiras.letas.ufg.br

LearnEnglish | British Council | ESL Library | Beginners Eng...1 - KET, PET | ISF - Idiomas sem Fronteiras | ISF - Inglês sem Fronteiras | SAC | IsF: Orientações - Oferta 6 | Relatório

inglêssemfronteiras@gmail.com - Gmail | Apresentações\_Laerte\_PRPG - Google Drive | Letras - Inglês Sem Fronte

**INGLÊS SEM FRENTEIRAS**

**UFG**  
UNIVERSIDADE FEDERAL DE GOIÁS

HOME | O PROGRAMA | CURSOS | FAQ | LINKS ÚTEIS | FALE CONOSCO

**Inglês sem Fronteiras**  
Universidade Federal da Goiás

**Learn English**

Pesquisar

Noti

**Nucli UFG**

Atualizado em 26/02/15 14:04.

Os Núcleos de Línguas (Nucli) são mais uma iniciativa do IsF, em parceria en para apoio ao Programa Ciência sem Fronteiras.

O Núcleo de Línguas (Nucli) do Programa Idiomas sem Fronteiras na UFG fun Samambaia, na Faculdade de Letras, sala 83 do Bloco Bernardo Élis e oferece inglesa. O Nucli-UFG é também credenciado como [Centro Aplicador do exam Foreign Language](#) e oferece aplicações gratuitas desse exame em várias dat aplicados gratuitamente mais de 4.000 testes nos anos de 2013 e 2014.

Os cursos presenciais ofertados no Nucli-UFG abordam áreas específicas com habilidades orais (compreensão oral e conversação), habilidades escritas (ing preparação para o TOEFL. Os cursos possuem cargas horárias diversas (16, 3 ao longo dos dois semestres letivos, inclusive nos períodos de férias. As turn

**Nucli UFG**

Equipe Nucli UFG

My English Online

TOEFL ITP

Aplicação de Teste TOEFL

cl.letas.ufg.br

LearnEnglish | British Council | ESL Library | Beginners Eng...1 - KET, PET | ISF - Idiomas sem Fronteiras | ISF - Inglês sem Fronteiras | SAC | IsF: Orientações - Oferta 6 | Relatório Men...

lapig.ufg@gmail.com - Gmail | Apresentações\_Laerte\_PRPG - Google Drive | FL - Centro de Línguas

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CENTRO DE LÍNGUAS

**UFG**  
UNIVERSIDADE FEDERAL DE GOIÁS

+ Acessibilidade

Menu

Sistemas UFG

**Idiomas para todos!**  
Centro de Línguas - UFG

Ciao | Hallo | Salut | Hello | ¡Hola! | Olá

## Notícias

Ver todas



Vagas remanescentes



Curso de Mandarim 1



Valores da Taxa de Matrícula  
2018/01



# Weaknesses: institutional asymmetries...



## Drivers of academic performance in a Brazilian university under a government-restructuring program

José Alexandre F. Diniz-Filho<sup>a,c,\*</sup>, Maria Clorinda S. Fioravanti<sup>b</sup>,  
Luis Mauricio Bini<sup>c</sup>, Thiago Fernando Rangel<sup>c</sup>

<sup>a</sup> Pró-Reitoria de Pós-Graduação, Universidade Federal de Goiás (UFG), Prédio da Reitoria, C.P. 131, 74001-970 Goiânia, GO, Brazil

<sup>b</sup> Pesquisa e Inovação, Escola de Veterinária e Zootecnia, UFG, Goiânia, Brazil

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### ARTICLE INFO

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Supervision  
Scientific production  
Brazilian universities

### ABSTRACT

The search for correlates of scientific production is an important step toward the formulation of decision-making guidelines on academic and funding policy under a competitive system with continuously reduced budgets. Our goal here is to identify drivers of the scientific production of researchers working at the "Universidade Federal de Goiás" (UFG), a medium-to-large public Brazilian University, focusing on the effects of teaching load and supervision of graduate and undergraduate students on scientific production of faculty members. We analyzed data for 1487 faculty members of UFG, including the total number of papers published between 2011–2013, a weighted-index of scientific production and the number of publications in high-ranked journals (according to a Brazilian system of journal ranking in different areas). These variables were regressed on gender, teaching load at undergraduate and graduate levels, number of supervised undergraduate, Master and Doctoral students, self-declared amount of time dedicated to research and outreach, year of doctoral graduation, year of hiring and the scientific production before doctoral graduation. Several regression models were used to model scientific production, including ordinary least-square regression and Hurdle negative binomial models. Although there are some differences among research areas, the most important explanatory variable was the publication record of the researcher before doctoral graduation, reinforcing the role of a solid academic formation in terms of research experience. Undergraduate and graduate teaching loads were negatively and positively correlated with scientific production, respectively. However, the strength of the relationship was much higher for the second than for the first relationship. These correlates of scientific production provide guidelines for policy and management in universities, including criteria for balancing research and teaching loads, awarding fellowships and research grants, designing new policy for future hiring and creation of new graduate programs.

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E-mail address: [diniz@ufg.br](mailto:diniz@ufg.br) (J.A.F. Diniz-Filho).

<http://dx.doi.org/10.1016/j.joi.2015.12.004>  
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asymmetric production (19% "A1" papers)



30% of faculty without any publication



A1E



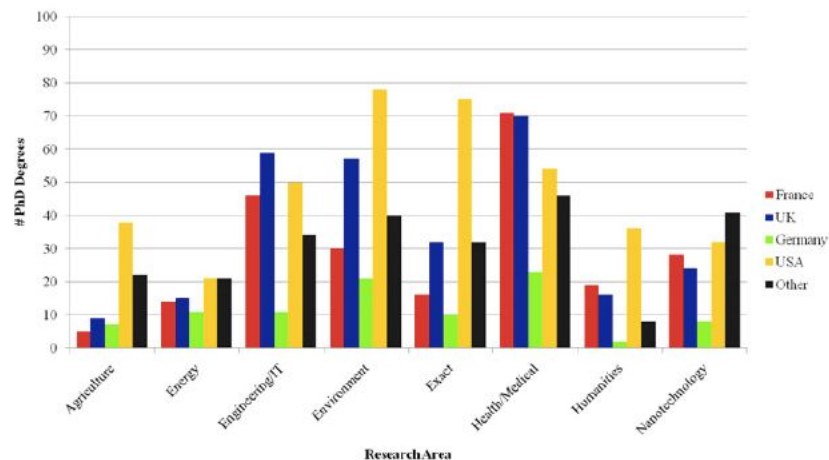
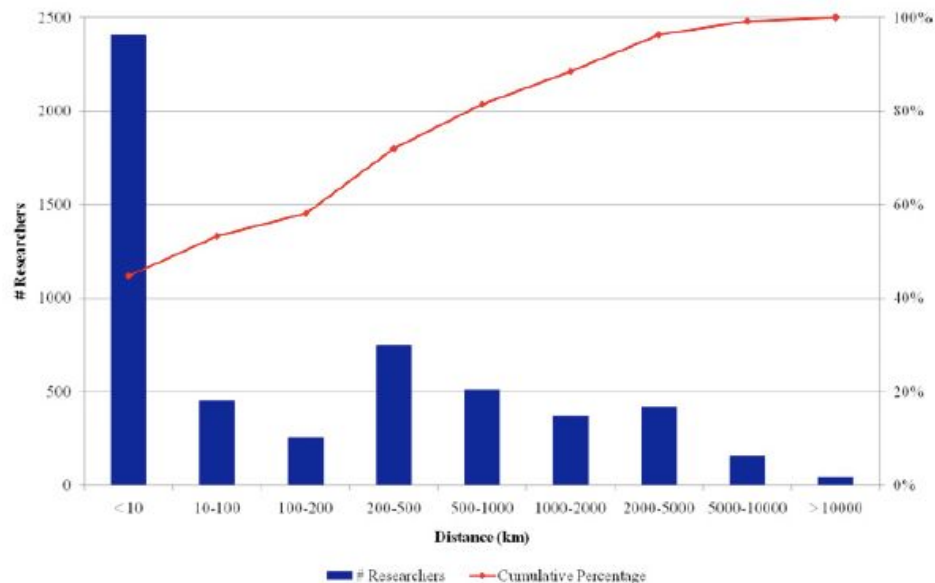
graduate teaching load

"PIBIC"

funded projects

academic background

# Weaknesses: A low mobility community...



## RESEARCH ARTICLE

# A Spatiotemporal Analysis of Brazilian Science from the Perspective of Researchers' Career Trajectories

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Computer Science Department, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

\* [caioaf@dcc.ufmg.br](mailto:caioaf@dcc.ufmg.br)



## Abstract

The growth of Brazilian scientific production in recent years is remarkable, which motivates an investigation on the factors, inside and outside the country, that helped shape this wealthy research environment. This article provides a thorough analysis of the education of researchers that constitute the main Brazilian research groups, using data on about 6,000 researchers involved in the country's National Institutes of Science and Technology (INCT) initiative. Data on the steps taken by each researcher in her education, from the bachelor's degree to doctorate, including a possible postdoctoral experience, and employment, are extracted from an official curriculum vitae repository. The location and the time at which each career step occurred define spatiotemporal career trajectories. We then analyze such trajectories considering additional data, including the area of knowledge of the INCTs to which each researcher is associated. We found an increasing prevalence of Brazilian institutions in the education of Brazilian scientists, as the number of doctorates earned abroad is decreasing over time. Postdoctoral stages, on the other hand, often take place in Europe or in the United States. Taking an international postdoctoral position after a full education in Brazil suggests a drive towards seeking higher-level exchange and cooperation with foreign groups in a more advanced career stage. Results also show that Brazilian researchers tend to seek employment in regions that are close to the institutions at which they received their bachelor's degrees, suggesting low mobility within the country. This study can be instrumental in defining public policies for correcting distortions, and can help other developing countries that aim to improve their national science systems.

## OPEN ACCESS

**Citation:** Furtado CA, Davis CA, Jr., Gonçalves MA, de Almeida JM (2015) A Spatiotemporal Analysis of Brazilian Science from the Perspective of Researchers' Career Trajectories. PLOS ONE 10(10): e0141528. doi:10.1371/journal.pone.0141528

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**Data Availability Statement:** The data analyzed in this article consists of the curriculum vitae (CV) of a number of researchers participating in major research groups in Brazil. Those CVs are publicly available at the Latex portal (<http://buscatextual.cnpq.br/buscatextual/ufmg.do>). No access number is required, but you must provide the name of specific researchers to download their CVs individually. The list of the names of researchers analyzed in our article is available as Supporting Information.

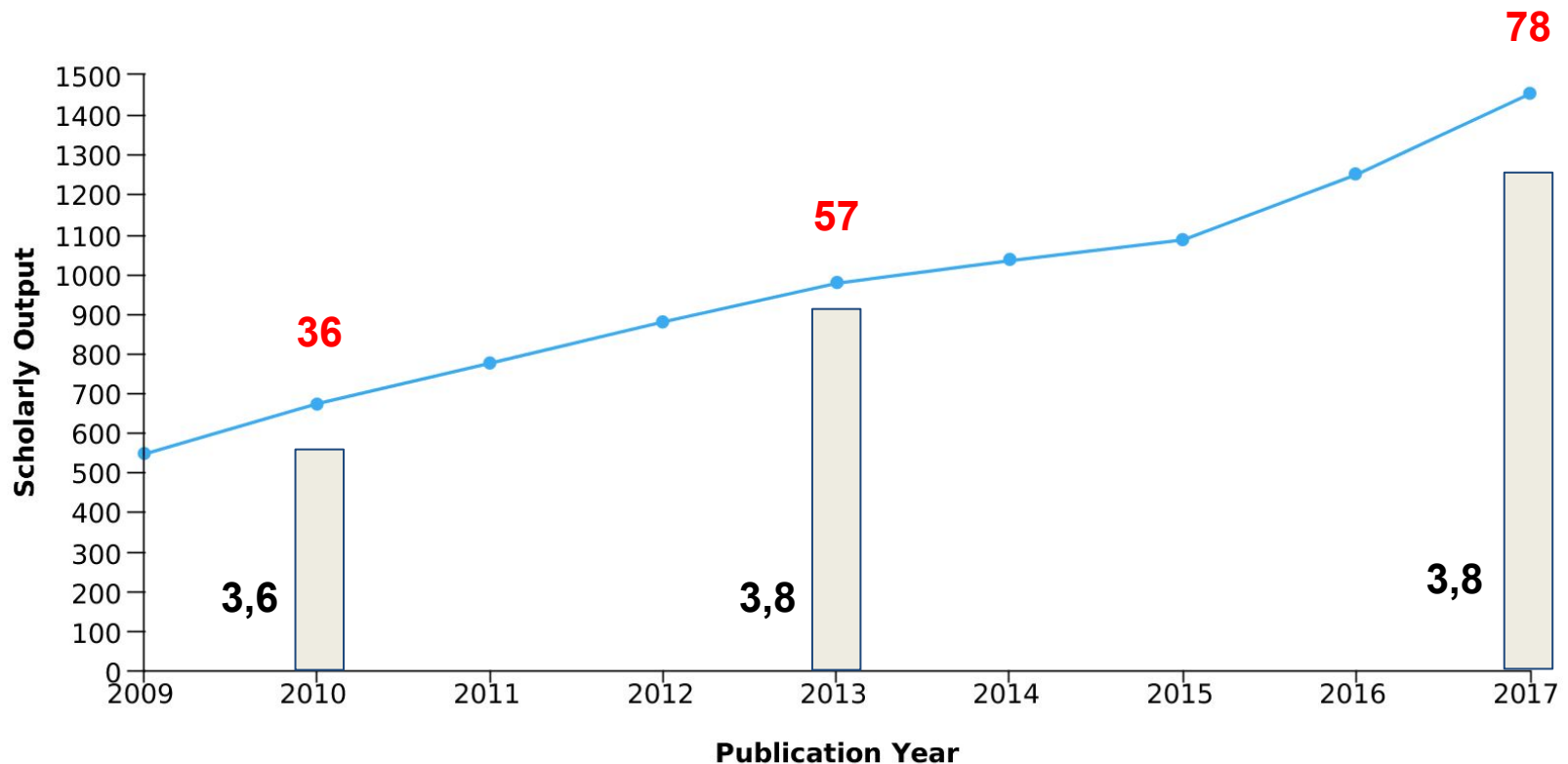
**Funding:** These authors were supported by the following institutions: CAD, MAG, JMA: Brazilian National Institute of Science and Technology for Web

## Introduction

The Brazilian scientific production has grown remarkably over the last 15 years [1], reaching an average annual growth rate of 10.7% [2]. With that performance, Brazil has been growing at a pace five times greater than the world average, raising to the 13<sup>th</sup> place in the international ranking of the most productive nations [2]. The Brazilian academic system, however, is quite

# Increasing publication numbers...

A close synergy between research and graduate studies...



Rapid growth of the postgraduate system

# Post-graduation *stricto sensu*...

**Identity**

**Research areas**

**Courses**

**Research activities**

**Collaborative projects**

**Academic  
background**

**Coordination**

**GP**

**students**

○ visiting professor

○ postdocs

○ CNPq researchers

✱ student scholarships

✱ PDSE scholarships

**Academic environment**



**Research environment**

**Knowledge  
production**

**visibility**

**CAPES  
score** ↑

**perception**

# Post-graduation *stricto sensu*...

**Identity**

**Research areas**

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**Collaborative projects**

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**Academic environment**



**Research environment**

**Knowledge  
production**

**visibility**

**perception**

**CAPES  
score** ↑

**Fostering the academic environment & internationalization...**



**Increase synergy among graduate programs...**

**Improve interdisciplinary thinking...**

**A system too big for quick maneuvers...**

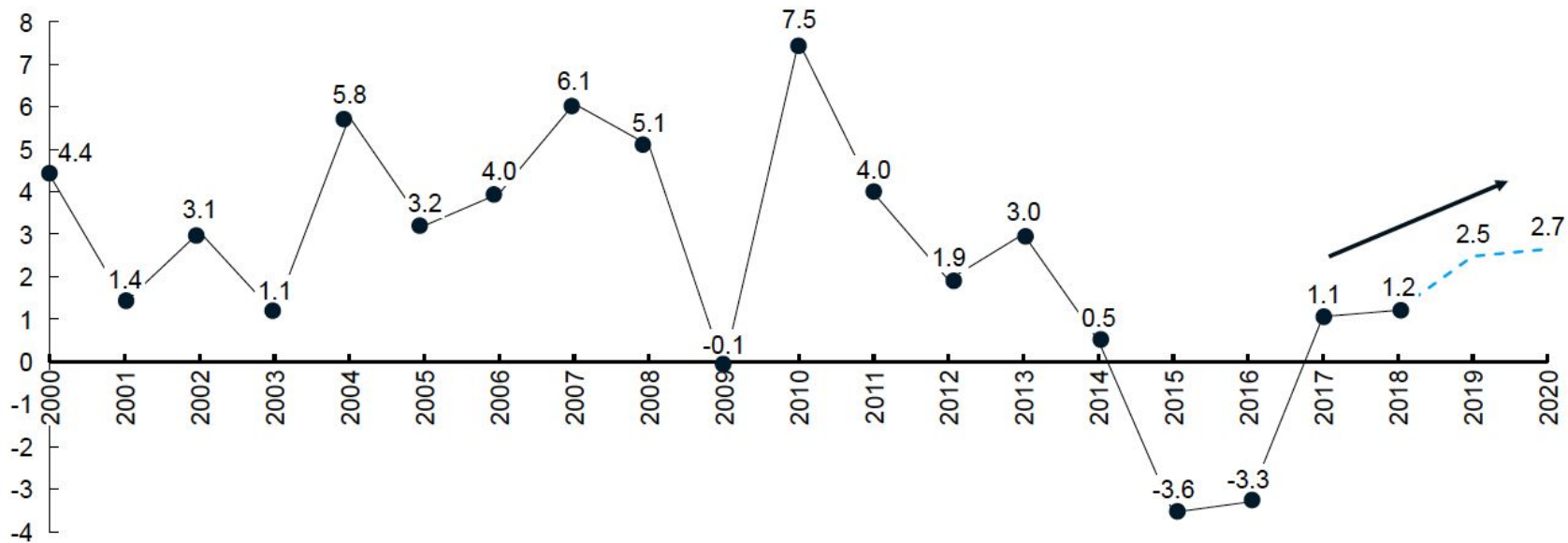


# In times of crisis and budget cuts...



## Real GDP Growth

% difference vs previous year



# A world eager and in need of collaboration...

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## The Trillion Pixel GeoAI Challenge

Sept 26th-27th, ORNL, Oak Ridge, TN

***AI driven monitoring of the entire planet, every day, with unprecedented clarity and fidelity***

The emergence of virtually ubiquitous global imagery, astonishing progress in AI, and transformational advances in high performance computing brings into view the possibility of mapping and interpreting the surface of our planet in unprecedented detail. Furthermore, rapid innovations in satellite and airborne remote sensing capabilities will soon collect high resolution imagery with daily, even hourly return rates across the entire planet. This brings forward the possibility of detailed change detection and new insights into how

# Obrigado!

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