Purposeful Global Engagement: Strengthening Cooperation with Brazil via CAPES PrInt

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Brazil: Socioeconomic Context

- Population of 209 million people
- Only Portuguese-speaking country in South America (6th most spoken language in the world)
- Largest economy in South America - 9th largest economy in the world
- Annual GDP: 1.6 trillion Euros
- Country full of socioeconomic contrasts
- Ranked 9th in the list of countries with unequal income distribution (Gini index)
### Brazilian Higher Education System

<table>
<thead>
<tr>
<th>HEI Type</th>
<th>Institutions</th>
<th>Enrollments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td>2,448</td>
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<td>2,020</td>
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<tr>
<td>Vocational</td>
<td>40</td>
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</table>
Brazilian HES: Enrollments
Brazil: Scientific Context

- **Decreased** importance of the Ministries of Science and Technology and Education with important cuts in their budgets

- The numbers of **patents** and articles published in Brazil are increasing, but those of developed countries as well, and in a more substantial way

- Universities, in general, **did not** have institutional plans for the internationalization of the science produced by their researchers – What is observed most of the time are individual initiatives of researchers

- **Urgent need** to develop links with industry – Academy almost dissociated from the industry
Brazil: Scientific Context

• Solid Post-Graduate System (geocapes.capes.gov.br)
  • 6,471 programs: 771 professionals master, 3,495 research master, 2,205 PhD
  • Number of students: 27,865 professionals master, 121,451 research master and 102,365 doctorate
  • Diplomas per year: 8,407 professionals master, 46,517 research master and 18,625 doctorate

• 37,640 research groups, 147,392 research themes and 254,239 researchers (lattes.cnpq.br/web/dgp/)
Brazil: Research Output indexed in WoS


1. USA 2,658,867
2. China 1,810,725
3. UK 812,718
4. Germany 697,608
5. Japan 496,152
6. France 475,964
7. Canada 445,330
8. Italy 435,277
9. Australia 413,301
10. India 403,141
11. Spain 374,281
12. South Korea 352,551
13. Brazil 280,912
14. Netherlands 260,736
15. Russia 217,595

© Clarivates Analytics - Research in Brazil: Funding Excellence: https://tinyurl.com/yx4hylx2
CAPES PrInt Program

- Brazilian HEI will manage all the process – Money will be transferred to them by CAPES
- International HEI can only participate by partnering with Brazilian HEIs
- Focus on RESEARCH and mobility of faculty and Ph.D. students
- Importance of co-funding as a component to participate, both internal and from international partners
- All areas and not only STEM
- 36 HEIs selected
CAPES PrInt Program: Goals

I. Strengthening and consolidation of the process of internationalization of the Brazilian Higher Education Institutions

II. Increase the qualification of students, administrative staff and researchers / academics

III. Construction of strategic and symmetrical institutional partnerships

IV. Increase the impact of the science
**CAPES PrInt Program: Participant HEIs**

- **Private**
  - FGV
  - UNISINOS
- **State (Public)**
  - UERJ
  - UNESP
  - UNICAMP
  - USP
- **Confessional**
  - PUC-RIO
  - PUC-RS
  - UPM

- **Federal (Public)**
  - FIOCRUZ
  - FURG
  - INPE
  - ITA
  - UFABC
  - UFBA
  - UFC
  - UFES
  - UFF
  - UFLA
  - UFMG

- **Federal (Public)**
  - UFMS
  - UFPB
  - UFPE
  - UFPEL
  - UFPR
  - UFRGS
  - UFRJ
  - UFRN
  - UFRPE
  - UFSC
  - UFSCar

28 respondents

www.aieaworld.org
Number of Graduate programs

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<tr>
<td>21 e 30</td>
<td>5</td>
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<tr>
<td>31 e 40</td>
<td>2</td>
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<td>41 e 50</td>
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<td>60 e 70</td>
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<tr>
<td>70 e 80</td>
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<tr>
<td>above 80</td>
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# Faculty involvement

<table>
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<td>ABOVE 2000</td>
<td>2</td>
</tr>
<tr>
<td>1001 - 2000</td>
<td>5</td>
</tr>
<tr>
<td>701 - 1000</td>
<td>2</td>
</tr>
<tr>
<td>500 - 700</td>
<td>2</td>
</tr>
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<td>251 - 500</td>
<td>7</td>
</tr>
<tr>
<td>151 - 250</td>
<td>7</td>
</tr>
<tr>
<td>1 - 150</td>
<td>3</td>
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</table>
Ph.D. students involvement

- Above 4000: 5
- 3001 - 4000: 1
- 2001 - 3000: 2
- 1001 - 2000: 6
- 501 - 1000: 3
- 101 - 500: 6
- 1 - 100: 4
Internationalization plan developed for PrInt?

- Yes: 17
- No: 12
Did graduate programs have an internationalization plan before PrInt?

- Yes: 19
- No: 9
Strategies

Alignment with strengths

Involvement of various sectors

Transversality

Deep Diagnosis

Comprehensive Internationalization

Integration between sectors

Networks and strengths

Language policy

Internal synergy and social impact

Reduced number of partners

Reciprocity

Partnerships and co-financing

Multiculturalism

SDG

Sustainability and integration with industry

Institutional priorities

AIEA
# CAPES Partner Countries

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<tr>
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<td>Germany</td>
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<tr>
<td>Italy</td>
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<tr>
<td>Argentina</td>
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<td>Sweden</td>
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<tr>
<td>Mexico</td>
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<tr>
<td>Japan</td>
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<tr>
<td>Ireland</td>
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<td>South Africa</td>
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<td>South Korea</td>
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<tr>
<td>Brazil</td>
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</table>
Countries not indicated by CAPES

- Portugal
- Colombia
- Belgium
- Chile
- Cuba
- Mozambique
- Czech Republic
- Peru
- Uruguay

Bar chart showing:
- Portugal: 13
- Colombia: 9
- Belgium: 8
- Chile: 8
- Cuba: 6
- Mozambique: 5
- Czech Republic: 5
- Peru: 5
- Uruguay: 5
Number of international partners

- 1 - 50: 13
- 51 - 100: 6
- 101 - 150: 4
- 151 - 200: 2
- 201 - 400: 2
- Above 400: 1
Themes and Projects

Themes

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<td>6 - 7</td>
<td>5</td>
</tr>
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<td>Above 7</td>
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Projects

<table>
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<td>1 - 10</td>
<td>11</td>
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<tr>
<td>11 - 15</td>
<td>3</td>
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<td>16 - 20</td>
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<td>20 - 30</td>
<td>6</td>
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<td>31 - 40</td>
<td>2</td>
</tr>
<tr>
<td>Above 40</td>
<td>1</td>
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</tbody>
</table>
SDG are part of the proposal?

Yes: 14
No: 14
How to engage?

• Understand the **new priorities** – The reasons and needs of potential partners – What are partners expecting to gain?

• Open mind and engaged to work in this scenario developing **win-win partnerships** for both countries

• Identify partners with **shared values and vision**, as well as enthusiasm

• Overcome the “golden cow idea” – No tuition fees at all

• Look to Brazilian HEIs as valuable scientific partners
SIOs and Brazilian Universities: Building partnerships under the Capes/PrInt Program

An AIEA Thematic Forum

More information:
https://www.unesp.br/arex/aiea-forum-2019/
Unique Aspects of the Canadian Education System

• Post-secondary education sector (universities and community colleges) is predominantly a publicly funded system including 98 universities with 1.7 million students (2017 data)

• Education falls under the jurisdiction of the Ministry of Education in each of the Provinces and Territories. All 13 provinces and territories are members of a Council of Ministers of Education

• Universities and Colleges are funded by the Ministry of Education and through the institution’s collection of tuition fees

• Federal Government funds research and development at the Universities through three Granting Councils (Canadian Institute of Health Research (CIHR), Natural Sciences and Engineering Research Council of Canada (NSERC) and the Social Sciences and Humanities Research Council (SSHRC))

• University-Industry Partnerships are gaining greater importance – Canada’s universities conduct $1 billion in research for businesses and help build their competitive advantage (2016 data)
How does McMaster support Canada’s international innovation and growth agenda?

• Continue to build research excellence with key strategic partners around the world. e.g. McMaster has partnered with many of the top 100 world-class universities.

• Develop and encourage the co-supervision of Ph.D. students. i.e. bring the research strengths of two world-class Universities to train the next generations of researchers.

• Encourage greater co-commercialization of research. e.g. Health discoveries, new drugs and treatment, new knowledge regarding vaccine development, advances in new materials, autonomous vehicles and alternate drive trains.

• Incorporate current international fundamental research into our innovative teaching/learning programs. As part of the learning ecosystem at McMaster we develop international research internships to foster pressing global issues.
Facilitating the Matching of Brazil’s and Canada’s Priorities

Cooperative activities may take the following forms:

- Joint research and development activities;
- Pooling of research and development projects, already underway in each Party’s territory, into cooperative activities;
- Facilitation of commercially viable research and development activities;
- Organization of scientific seminars, conferences, symposia and workshops, as well as participation of experts in those activities;
- Exchanges and loans of equipment and materials;
- Exchanges of information on practices, laws, regulations and programs relevant to the cooperative activities carried out pursuant to this Agreement;
- Demonstrations of technologies and applications development;
- Visits and exchanges of scientists, technical experts, academics and post-graduate students; and
- Other forms of cooperative activities jointly decided in writing by the Parties.
<table>
<thead>
<tr>
<th>Year Range</th>
<th>McMaster University - USA</th>
<th>McMaster University - Brazil</th>
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<td>2015-2018</td>
<td>1,343</td>
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<tr>
<td>2016</td>
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</tr>
<tr>
<td>2016</td>
<td>154</td>
<td>151</td>
</tr>
</tbody>
</table>

Source: www.aieaworld.org
Sponsored Graduate Students at McMaster from Brazil
2019 – 2020 CNPq/CAPES funded

• Masters: 19 / Ph.D.: 7
• All fields would welcome scholars.
• McMaster already partners with many of the top universities in Sao Paulo and other regions in Brazil.
• Would welcome partnerships to foster greater jointly supervised Ph.D. Students, Visiting Scholars, faculty exchanges.
Opportunities for Sustained McMaster-Brazil Partnerships

• Co-supervision of Ph.D. students is welcomed and encouraged
• Summer research opportunities available in all areas
• Visiting scholars welcomed
• Encourage joint collaboration with industry (e.g., Vale and steel industry in Hamilton)
• Share infrastructure for research collaboration
• Seek joint funding within Canada (Mitacs, QEII, Tri-Council funding, including non-STEM projects)
• Work with Brazil’s State Foundations (FAPESP in Sao Paulo, FAPERJ in Rio de Janeiro)
Challenges to Engagement

- Long process (finding partners, connecting with faculty, matching faculty.)
- Matching: Engaging the two Schools/Faculty to establish a joint Ph.D. plan/agreement
- Logistics for the student/scholars

Challenges can be overcome!
How do others view us.

McMaster ranks #1 in research intensity in Canada

McMaster was ranked #2 overall for THE Ranking of Social and Economic Impact (SDG)

Ranked 90th in the Shanghai Jiao Tong Ranking of World Universities 2019

Ranked 72th in The Times Higher Education World University Rankings 2020

Ranked 23th for clinical, pre-clinical and health Times Higher Education World University Rankings, 2019

Ranked 146th in the QS World University Rankings 2019
Global partners (Brazil)

Building our community to become an “Education City”

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Phone: +1 905.525.9140 x 24616