

Challenges and Opportunities in University-Industry Collaborative Research

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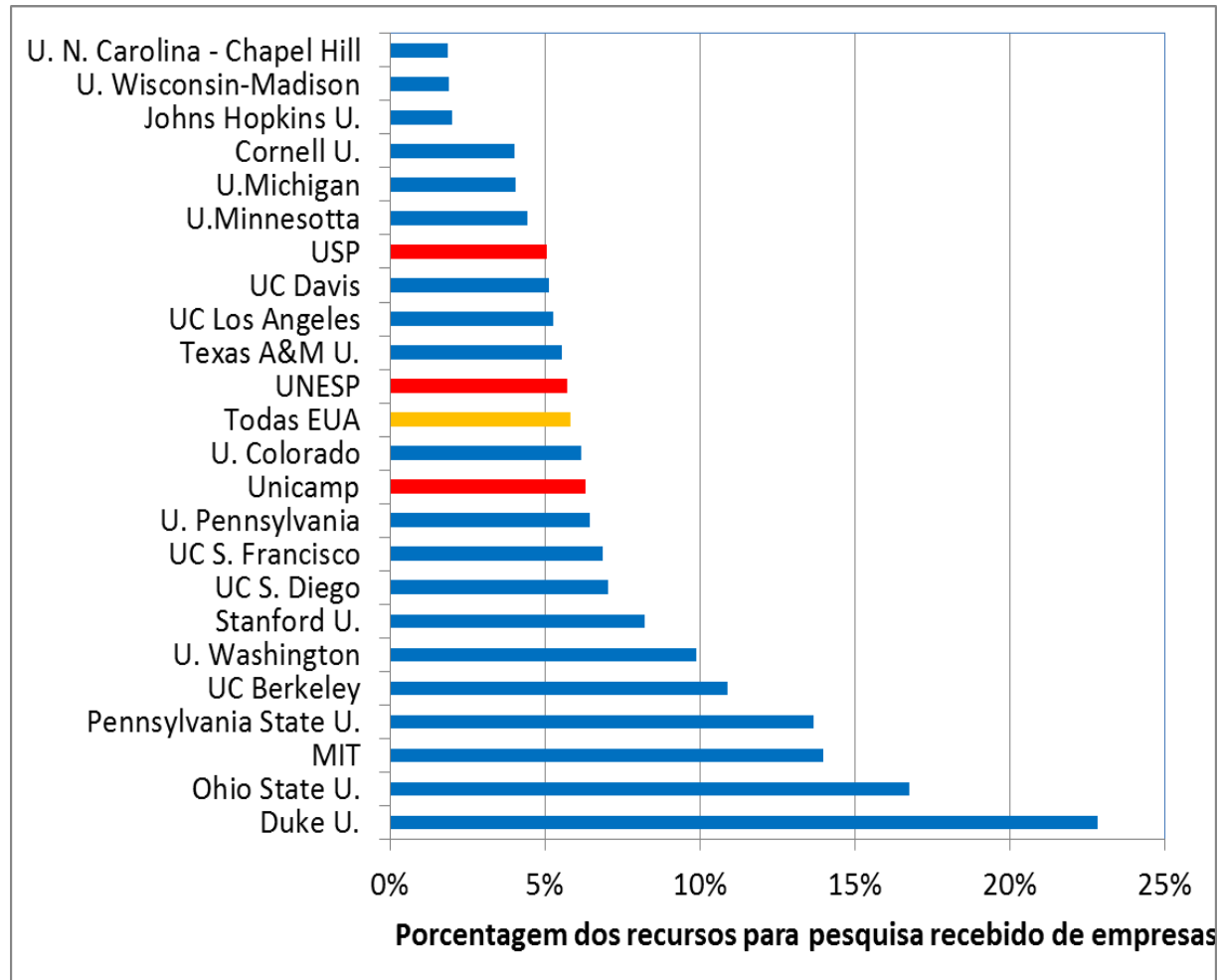
Topics

- The evolving picture of university-industry interaction in Brazil and in the State of SP
- The role of Fapesp in fostering university-industry collaborative research in the State of SP through PITE, ERCs and PIPE

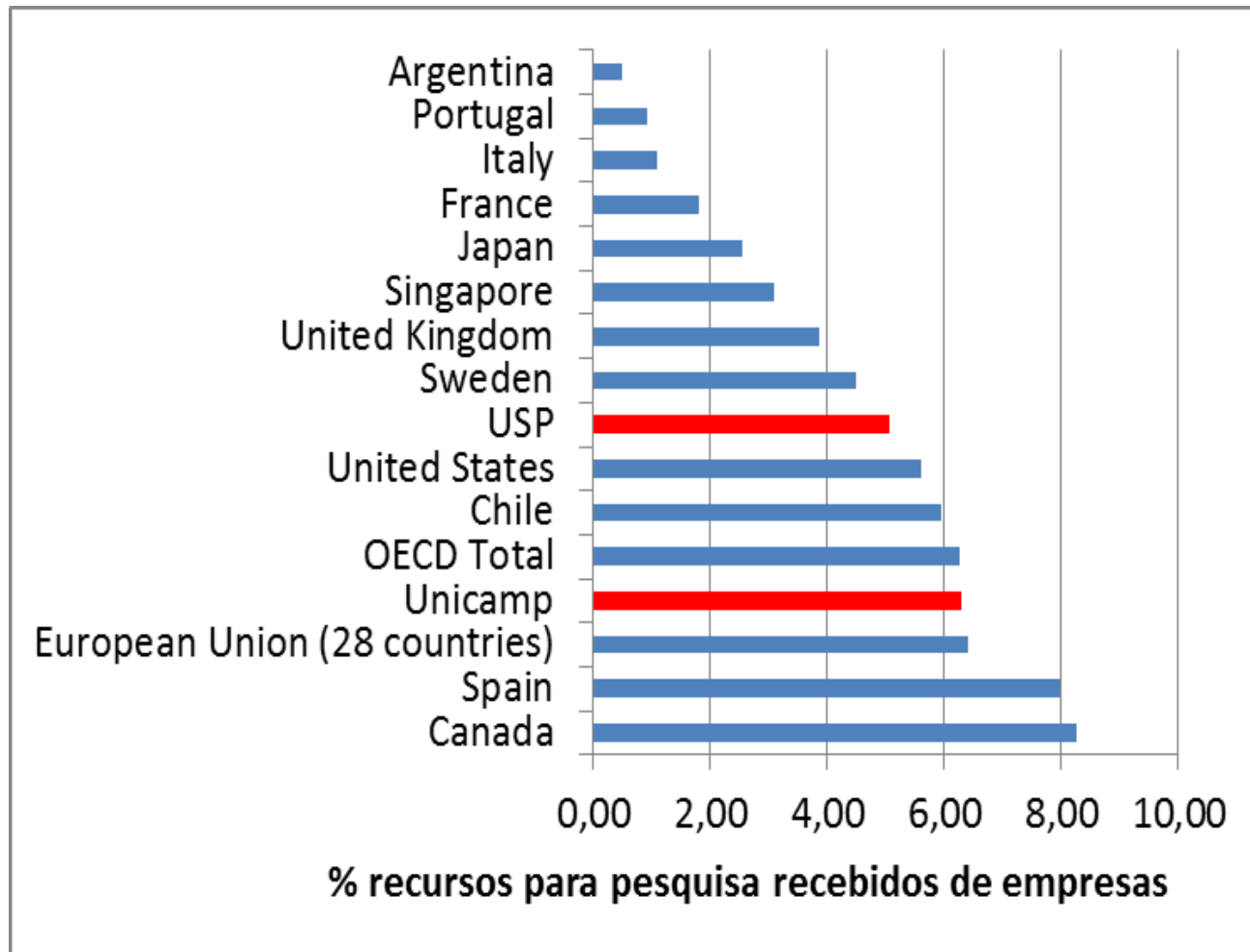
University-Industry relations in Brazil

- A number of successful cases of interaction*:
 1. Health sciences (IOC, Butantan)
 2. Agricultural sciences (IAC, Embrapa)
 3. Mining, metallurgy (UFMG)
 4. Aeronautic engineering (CTA, ITA)
 5. Geosciences, oil and gas (COPPE-UFRJ, Unicamp)

Percentage of research expenditure in SP State universities funded by firms



U-I interaction intensity, 2009



University-Industry relations in Brazil

- Challenge: to broaden the types of University-Industry interaction and increase the number of successful cases
- (Partial) response: State funded schemes to promote U-I interaction

FAPESP contribution for university-industry collaborative research in the state of SP

Research for Technological Innovation

- PITE – The Partnership for Technological Innovation Program
 - Research projects developed in partnership with R&D institutions in the State of São Paulo and businesses located in Brazil and abroad
- ERCs – Engineering Research Centers
 - Research program addressing medium and long term challenges of high scientific and technological impacts
- PIPE – The Research for Technological Innovation in Small Businesses Program
 - Research projects developed by researchers in small companies

Partnership for Technological Innovation (PITE)

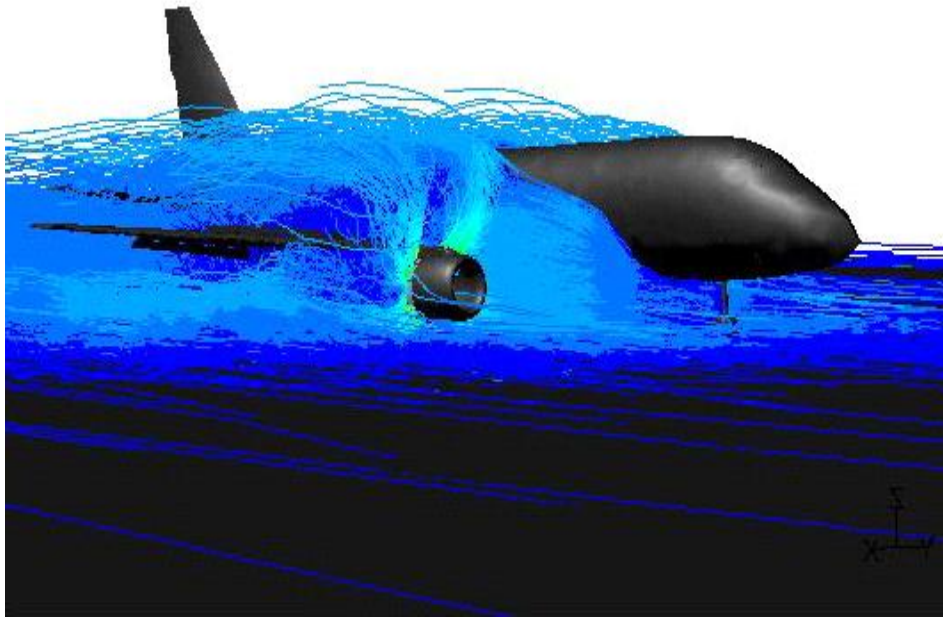
- Cooperative R&D
 - University/Research Institutes - Industry
 - Fapesp funds (non refundable) - 20 to 70%
 - Industry funds the complement
- PITE Proposals
 - Industry-University demand (since 1995)
 - Joint calls Fapesp-Industry (since 2006)

Fapesp – Industry joint calls for proposals

- Fapesp and a company issue a joint call for proposals
 - Themes proposed by industry
 - Exploratory R&D
 - Joint Steering Committee
 - Merit reviewed by Fapesp together with the partnering company
- Embraer, Natura, Ouro Fino, Oxiteno, Microsoft Research, Telefonica, Dedini, PadTec, Ci&T, Braskem, Whirlpool, Sabesp, Vale, ETH, Agilent, Biolab, GSK...

Embraer-FAPESP: R&D to build an innovative jet

Computational Fluid Dynamics
(CFD) simulation and tests
Research co-funded by FAPESP,
using several universities



Engineering Research Centers

- New instrument to support research in partnership with industry
 - Peugeot Citroën: Engineering Research Center for Biofuel Engines
 - Natura: Centre of Applied Research on Well-Being and Human Behavior
 - BG: Research Center for Gas Innovation
 - GSK: Centre of Excellence for Research on Sustainable Chemistry and Centre of Excellence for Research on Target Discovery
- Medium and long term (up to ten years) challenges
- High impact exploratory research on themes proposed by industry
- Co-funding and co-management

Research for Technological Innovation (PIPE)

- Initiated in 1997
- Two phases
- Up to R\$ 1,200,000 per project, non refundable funding
- Requirements for the PI related to experience and competence in the area of the project, not to formal degree
- PI must be an employee of the SB (research carried out within the firm)

Research for Technological Innovation (PIPE)

- PIPE also increases U-I interaction
 - Universities act as consultants to PIPE companies' projects
 - Many PIPE companies are spin-offs from universities

How to do more to increase U-I interaction?

- State funded schemes are important – the example of Fapesp is remarkable – but they are not enough
- Low level of business R&D expenditure in Brazil (higher in the State of SP) is a limitation that needs to be addressed