
Some problems concerning the development of research production at Uniandes .

Jose Rafael Toro , Nov 2005





Research at Uniandes : The turning point

Turning point at Uniandes, 2005-2010

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Research production + International recognition



Research at Uniandes: The basic

Basic conditions (President Angulo's presentation)

- Faculty : Quality and number
- High quality students
- Physical resources
- Appropriate funding



Research at Uniandes: Relevance

Research production



Local relevance vs international relevance



- Research standards
- Evaluation procedures
- Incentive schemes



Research at Uniandes: relevance and disciplines

Relevance considerations in:

- Natural sciences and mathematics
- Social sciences
- Engineering and technology

Which are the objects of study ?



Research at Uniandes: relevance and disciplines

Natural Sciences :

Objects of study: “universally defined” (aprox.)



“universally defined” standards of evaluation



clear incentives for professional relevance of young
faculty



Research at Uniandes: relevance and disciplines

Social sciences :

Objects of study: “locally defined” (natural trend)



“locally relevant” and useful in the short term:
-public policies
-social recognition

local relevance



global relevance



Research at Uniandes:

Natural sciences
Social sciences



Mature academic
community



Higher academic
productivity



Research at Uniandes: relevance and disciplines

Engineering :

Objects of study: “universally” defined ?

“locally” defined ?

Are first world technologies **locally** relevant ?

Are first world research trends **locally** relevant ?



Research at Uniandes: relevance and disciplines

Local industry :

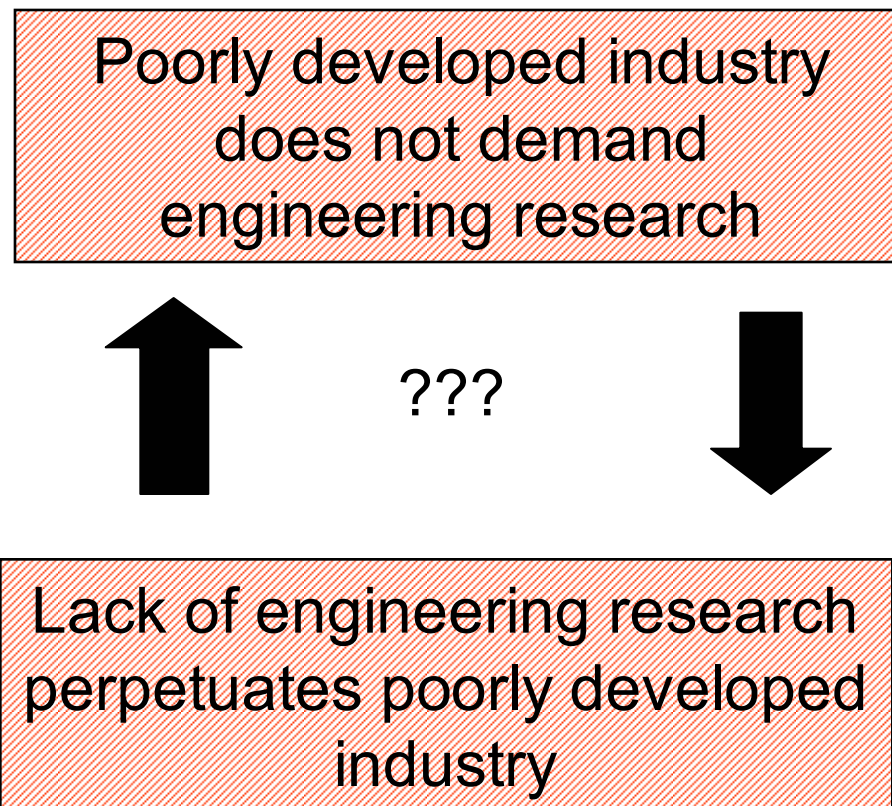
- Products with low technology added value
- Industry imports technology
- Industry competes locally



Low industry investment in engineering research



Research at Uniandes: structural deficiencies





Research at Uniandes: structural deficiencies

Engineering
research



Higher quality of
products

Higher efficiency
of processes



Higher profits &
Increased
Competitiveness

Its seems obvious, but it is not that obvious in countries with a **poorly developed technological tradition**



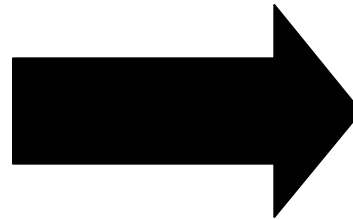
Research at Uniandes: structural deficiencies

Government agencies :

Public investment in engineering must guarantee social return

Local industry :

Private investment in engineering must guarantee higher profits



Long term strategic planning

High investment programs

Its seems obvious, but it is not that obvious in countries with a **poorly developed technological tradition**



Research at Uniandes : structural deficiencies

Young engineer

A research career vs :

- Economical incentives
- Social and professional recognition



Ambiguity in definition of research activities :

- Professional consultancy vs research with “academic value”
- Academic value vs local relevance
- Research standards

Engineering schools have to solve many dilemmas concerning
relevance of their research programs



Research at Uniandes : Challenges

Main issues concerning research production:

-Developing a **qualified faculty:**

-Educated in an international environment with the same academic demands of first world future faculty.
(No first world “tailor made” doctoral programmes for underdeveloped countries)

-Adequate economical incentives and physical resources

-Developing an appropriate **environment for research activities**



Research at Uniandes : Challenges

Appropriate **environment** must prevent scientific and technological **isolation**:

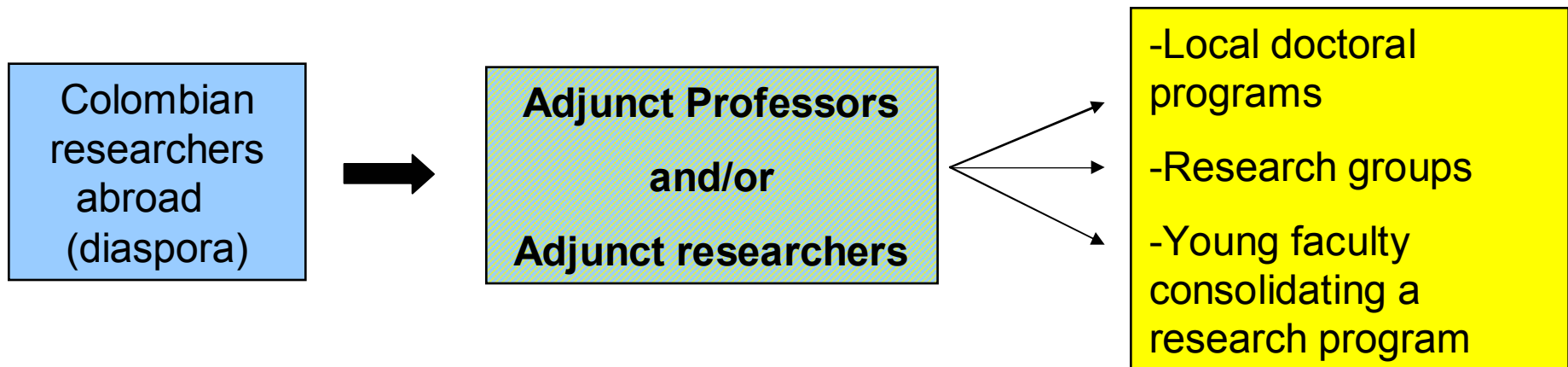
- Our doctoral programs have to achieve international recognition.
- Our young faculty should be able to construct strong ties with international research centers

Our faculty should nurture globally and deliver locally



Research at Uniandes : diaspora

**Diaspora, not necessarily a loss, but an
opportunity !**



Diaspora prevents isolation



Research at Uniandes : Diaspora

**Diaspora, not necessarily a loss, but an
opportunity !**

**Adjunct Professor and/or
Adjunct reserchers**

International
research centers

Flow of researchers,
students and ideas

-Local programs -
Local research groups

Local concerns may draw global attention and
global solutions (science and technology) may become locally
appropriate