

**ESOCITE/4S Joint Meeting**  
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# Research metrics and the evaluation of academic careers in Latin America

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# Research questions



**How is the career of academic researchers in LA evaluated?**



**What are the main criteria being used?**



**Which research metrics have become more important?**

# Theoretical inspirations

## Research Evaluation Systems (Whitley and Gläser 2017)

- *How they are organized:* Frequency, standardization and transparency
- *What impact in decision-making for resource allocation they have*

## Uses of research evaluation (Mollas-Gallart, 2012)

- Resource allocation
- Improvement
- Burocratic control

# National Research Categorization Systems

STI policy instruments that aim to to  
**classify and reward individuals**  
conducting scientific research in a given  
**national context**

Complementarity

Hierarchy

Centralization

Focus on research

Recognition

Transitory nature

# What NRCS are NOT

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Academic career systems

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Block funding for research

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Competitive project funding

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Performance-based Research Funding Systems (PBRFS)

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Cash-for-publication

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(Simple) Merit-pay Programs

# Incentives for conducting research in professionalist HES



## Integration

- Unified academic career
- Institution-level incentives
- Chile, Costa Rica



## Complementarity

- NRCS - “Crutch” for institutional academic careers
- National-level
- México, Uruguay, Paraguay, Panama, Brazil



## Externalization

- Standalone research career
- Universities scarcely involved in planning and evaluation
- Argentina (28% CIC don't teach)



# Activities

Descriptions of systems in secondary literature



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graph TD; A[Descriptions of systems in secondary literature] --> B[Rules, criteria, procedures, statistical data, etc (available online or upon FOI request)]; B --> C[Interviews with key informants in each country (governmental agency or STI policy researcher)]; C --> D[Information analysis (20 countries → 11 systems → 7 in-depth)];
```

Rules, criteria, procedures, statistical data, etc (available online or upon FOI request)

Interviews with key informants in each country (governmental agency or STI policy researcher)

Information analysis (20 countries → 11 systems → 7 in-depth )

- Factsheets in website: <https://impactoabierto.org/mapa>

Countries with  
NRCS





# Information collected

Name

Managing organization

Year of creation

Main objectives

Target audience

Levels or categories

Disciplinary divisions:

Entry-level minimum qualification

Benefits provided

Validity period

Periodicity of calls

Differentiated circuits for technological production / interdisciplinarity

Resources available

Related papers/docuements

## Panamá



**Nombre:** Sistema Nacional de Investigación

**Institución gestora:** SENACYT

**Año creación:** 2007

**Objetivos principales:**

Incentivar el desarrollo de las actividades de investigación científica y tecnológica en el país, contribuyendo con ello al bienestar social, a la resolución de los problemas nacionales y a incrementar el nivel de competitividad internacional del país.

**Público al que se dirige:** Investigadores panameños y extranjeros residentes en Panamá

**Niveles o categorías:** 5 (Estudiante del SNI, Investigador Nacional I, Investigador Nacional II, Investigador Distinguido, Investigador Emérito). También cuenta con 2 categorías para grupos de investigación y 2 categorías para centros.

**División disciplinar:** 5 áreas. ÁREA I: Ciencias Naturales y de la Tierra; ÁREA II: Ciencias Médicas y de la Salud; ÁREA III: Ciencias Agrícolas; ÁREA IV: Ciencias sociales, humanísticas, administrativas y económicas; ÁREA V: Ingeniería, ciencias físicas y matemáticas

**Requisito mínimo de ingreso:** La categoría estudiante es para maestrandos y doctorandos. Para ingreso a la categoría de investigador nacional es necesario título de doctor

1st Gen:  
independent  
systems

2nd. Gen: SNI-model  
adapptions

3rd Gen (unstable):  
Other inspirations

Country	System	Managing institution	Year of creation
Brazil	Research productivity scholarships	CNPq	1976
México	National System of Researchers	CONACYT	1986
Cuba	Research Categories Law	CITMA	1988
Colombia	Measurement model for research groups and recognition for researchers	Colciencias	1990
Venezuela	Researcher Promotion Program	MPPCYT	1990
Argentina	Reward Program for University Teacher-Researchers	SPU	1994
Uruguay	National System of Reseachers	Self-governed with technical support from ANII	2007
Panama	National Research System	SENACYT	2007
Paraguay	National Reward Program for Researchers (PRONII)	CONACYT	2011
Peru	National STI Registry (RENACYT)	CONCYTEC	2015
Dominican Republic	National Research Career	MESCYT	2017

	Brazil	Mexico	Colombia	Argentina	Panama	Uruguay	Paraguay
Acronym	-	SNI	-	PROINCE	SNI	SNI	PRONII
Managing institution	CNPq	CONA-CYT	MINCIENCIAS	SPU-ME	SENACYT	ANII	CONACYT
Year of creation	1976	1986	1990	1993	2007	2007	2011
Periodicity of calls	Anual	Anual	Cada 2 o 3 años	Cada 4 años	Anual	Anual	Anual
Monthly benefit	210-288	425-1990	None	1.5-6	900-2000	182-365	258-1330
Levels (including emeriti)	6	5	3	5	5	5	5
Membership	16,759	33,165	16,799	59,663	202	2,034	566

	Brazil	Mexico	Colombia	Argentina	Panama	Uruguay	Paraguay
<b>Organization of evaluation</b>							
<b>Disciplinary divisions</b>	39	10	n/d	19	5	8	4
<b>Differentiated process for interdisciplinary research</b>	✗	✓	✗	✗	✗	✗	✗
<b>Differentiated process for technological development</b>	✓	✓	✓	✗	✗	✗	✗
<b>Quotas</b>	✓	✗	✗	✗	✗	✗	✗
<b>Scores</b>	✓	✗	✓	✓	✗	✗	✗

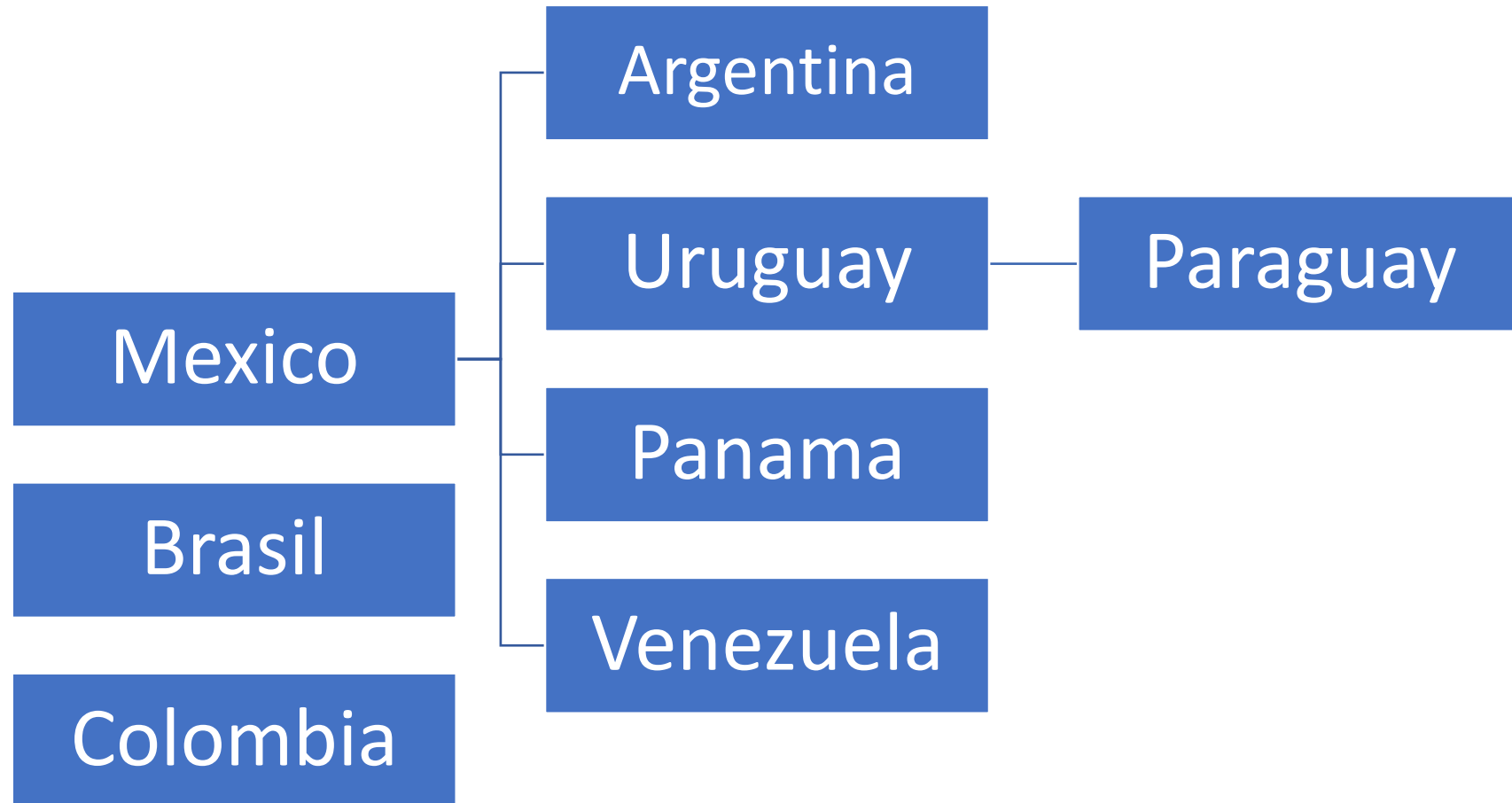
Evaluation criteria							
	Brasil	México	Colombia	Argentina	Panamá	Uruguay	Paraguay
Scientific productivity	✓	✓	✓	✓	✓	✓	✓
Mentoring	✓	✓	✓	✓	✓	✓	✓
Teaching	✓	✓	✗	✓	✓	✗	✗
Leadership/networking/grants	✓	✓	✓	✓	✓	✓	✓
Associated Research Project	✓	✗	✗	✗ / ✓	✗	✗	✗
Thematic alignment	✓	✓ (PNE)	✗	✗	✗	✗	✗
Other	Prizes, editorial committees, service to institution (leadership positions)	Actions that Foster universal Access to knowledge	Lots of details	Leadership positions		Knowledge transfer, contribution to society, evaluation...	

	Brazil	México	Colombia	Argentina	Panama	Uruguay	Paraguay
<b>Productivity metrics</b>							
<b>Amount of publications</b>	✓	✓	✓	✗	✓	✗	✓
<b>Order of authorship</b>	✓	✓	✗	✗	✓	✗	✗
<b>FI / SJR / CiteScore</b>	✓	✓ (except SSH)	✓	✗	✓ (only inclusion in DB)	✗	✓ (Only inclusion in DB)
<b>Google H5</b>	✗	✗	✓	✗	✗	✗	✗
<b>Total amount of received citations</b>	✓	✗	Only for books (¿?)	✗	✗	✗	✗
<b>H-index</b>	✓	✗	✗	✗	✗ (only as qualitative criteria)	✗	✗
<b>Other metrics</b>	ISSN lists, Qualis, sum of JCF IFs	✗	If not in Scopus/WoS, information from CIRC, DOAJ, DIALNET, Scielo	✗	Articles not in JCR/Scopus are considered qualitatively	✗	✗

# A regional model?

- Not many analogous systems in other world regions
  - ≠ Cash-for-publication (China, Turquía)
  - ≠ Integrated academic careers (US / Europe)
  - ≠ PRFS - Europe

# Isomorphism and policy transfer





# Structural effects of introducing NRCS

Teaching neglected



Precarization



Burocratization (“counting beans”)



Centralization / distance



Limited connection to STI policy or local demands



# NRCS and metrics

- NRCS Scale and workload functional to the adoption of metrics
- Disciplinary cultures are present in criteria documents
- The introduction of metrics seems to be based on the understanding of researchers/evaluators rather than on the input of experts in evaluation/bibliometrics.
  - CO: exception?
  - BR tailor-made indicators?
- Journal level (IF, SJR, h5) more present than author-level (h-index, total # of citations)
- Residual presence of regional indexes/DB
- No surprises?

THANK YOU!

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