This document contains slides presented at the conference *Academic Demarcations: Disciplines and Interdisciplinarity*, 13-14 September 2012 at the University of Oslo, **and may only be quoted after informing the author:**

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Interdisciplinarity in Higher Education

Espacio Interdisciplinario (Uruguay)

Academic Unit
Ximena Aguiar . Paula Cruz . Lorena Repetto . Bianca Vienni

September 2012
Espacio Interdisciplinario (EI)

- To promote interdisciplinarity at the Universidad de la República through research, education and community engagement.

- To contribute to university strategies with an integrated approach to multidimensional phenomena.

- To promote new dialogues among disciplines at the Universidad de la República.

- To study interdisciplinarity and its dynamics.
Interdisciplinarity at the University of the Republic

**Centres** 2009 - (2014)
- Childhood and Poverty
- Nanotechnology, Chemistry and Physics of Materials
- Integrated Management of Seashores in the Southern Cone of America
- Response to Climate Variability and Change

**Interdisciplinary Nodes** 2009 - 2013
- Electrochemical Systems
- Critical Thinking in Latin America
- Research and Preservation of Photographic Heritage
- Biodiversity and Society

**Nodes** 2011 - 2013
- Biomechanics
- Cognitive Sciences
- Philosophy of Computer Science
- Food and Well-being
- Monitoring of Local Development

**Nodes** 2012 - 2014
- Childhood 2020
- Nuclear Oncology
- Research, Innovation and Artery Diagnosis CUiiDARTE

**Nodes** 2012 - 2014
- Gerontological Studies
- Degree in Human Biology
- Biomedical Research Centre
- Experimental Programme
- Art & Programming Workshop
Aims:
To study interdisciplinarity within the University.

Other specific aims:

• To survey existing interdisciplinary groups and activities.
• To inquire into the researchers' perception of interdisciplinarity.
• To analyze the modalities of interdisciplinary work.
• To identify the difficulties, and strengths of interdisciplinary work.
Methodological strategy

Exploratory design

(I) Quantitative strategy

(II) Qualitative strategy
## (I) Quantitative strategy: characterization of interdisciplinary programmes

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Total number of members</th>
<th>Primary Unit</th>
<th>Staff of Primary Unit</th>
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<tbody>
<tr>
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<td>55</td>
<td>Medicine</td>
<td>33</td>
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<tr>
<td>Degree in Human Biology</td>
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<td>Medicine</td>
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<tr>
<td>Gerontological Studies</td>
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<td>Social Sciences, Psychology</td>
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<tr>
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<tr>
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<td>Social Sciences</td>
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<td>Natural Sciences</td>
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<td>Medicine</td>
<td>3</td>
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<tr>
<td>Integrated Management of Seashores in the Southern Cone of America</td>
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<td>Architecture</td>
<td>3</td>
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<td>Chemistry</td>
<td>9</td>
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<tr>
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<td>Agronomy</td>
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<td><strong>Total</strong></td>
<td><strong>190</strong></td>
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Interdisciplinary Nodes: Academic staff

- CEINBIO: 55
- LBH: 15
- NIEVE: 10
- NIPPF: 9
- NIE: 7
- NPCAMSC: 21
- NBS: 9
- TAP: 5

Total: 131
**Interdisciplinary nodes: Interaction among cognitive areas**

<table>
<thead>
<tr>
<th>Node</th>
<th>Social</th>
<th>Technological</th>
<th>Agricultural</th>
<th>Fine Arts</th>
<th>Natural Sciences</th>
<th>Health</th>
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### Interdisciplinary nodes: Interaction among cognitive areas

#### NODE / Interactions between cognitive areas

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<th>Natural Sciences</th>
<th>Health</th>
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</thead>
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<td>Health</td>
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Interdisciplinary Centres: Academic Staff

<table>
<thead>
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<th>Centre</th>
<th>Academic Staff</th>
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<tbody>
<tr>
<td>CIIP</td>
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<tr>
<td>CMCISur</td>
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<tr>
<td>CIN QUIFIMA</td>
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<tr>
<td>CIR CVC</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59</strong></td>
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</table>
Interdisciplinary centres: Interaction among cognitive areas

Cognitive Areas

Social  Technological  Agricultural  Fine Arts  Natural Science  Health

Centres

CIIP  CMCISUR  CINQUIFIMA  CIRCVC
### Interdisciplinary centres: Interaction among cognitive areas

#### Interactions between cognitive areas

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</table>
(II) Qualitative strategy: Dimensions of analysis

Dimensions
- Conception
- Interdisciplinarity
- Onset of the group
- Motivations
- Modalities of interdisciplinary work
- Community engagement
- Teaching
- Research
- Perception of interdisciplinary work

Codes
- Conception
- Interdisciplinarity
- Complexity
- Disciplinarity (dynamics)
- Interaction and integration between disciplines
- Communication
- Personal / group requirements
- Institutionalization
(II) Qualitative strategy: Conception of interdisciplinarity

1. Problem / Subject
2. Complexity
3. Disciplinarity / Interdisciplinarity
4. Interaction and integration between disciplines
5. Communication
6. Personal and group characteristics
7. Institutionalization
(1) The subject and the problem

**SUBJECT**
- Broad area of work.

**PROBLEM**
- Specific question.

**SUBJECT**
- The problem nature requires this approach.

**PROBLEM**
- It forces the research into it.
  - The issue itself demands an interdisciplinary approach.

**SUBJECT**

**PROCESS**

Production of products due to the potential applicability of knowledge and the interest gained among decision makers.

**PROBLEM**

**PRODUCT**

Process to move to a new horizon of responses.
(2) Complexity

• Transversal issue.

• 2 aspects:

(I) the complexity of the subject / process requires an interdisciplinary approach,

(II) the interdisciplinary work is in itself complex.

• Complexity requires several personal and group specific skills.
DYNAMICS = DISCIPLINARITY / INTERDISCIPLINARITY

- Links that emerge between the two areas
- Modalities of interdisciplinary work

**Pendulum:** "First you start knowing a lot about your own discipline, then you open to interdisciplinary work and you return to the discipline, you play that game”.

**Interdisciplinary cycle:** The researcher moves between interdisciplinary and disciplinary moments without losing his or her autonomy.

**Spiral:** Each turn implies a change of level on which other levels will be built. Interdisciplinary practice involves a process of synthesis while new knowledge is generated.

**Construction:** An ongoing process whose starting point is the disciplinary knowledge, but it trascends it building something new: new knowledge or a new way of conceiving the problem.
Interaction and integration among disciplines

- **Association:**
  Actors come together to share knowledge in order to work on a specific topic.

- **Articulation:**
  The interdisciplinary task is given by the conjunction of the several knowledges that summons a problem and requires some basic agreements on the language and the definition of concepts.

- **Integration:**
  Comprehensive and inclusive logic that implies the creation of common language and new concepts.
(5) Communication

- Transversal other categories
- Enables disciplinary practices
- Dialogue
- Cooperation
- Trust
- Language construction
- Cultural matters: values, practices, meanings
- Translation
- Negotiation

More time spent on interaction / more space / longer / collective and personal time (effort, constant emotional and intellectual work) / to be able to understand / identify, recognize in the other / listen / learn to discuss  to develop
(6) Personal and group characteristics

PERSONAL REQUIREMENTS:

• Research skills
• Critical and proactive specific skills
• Creativity
• Willingness to work in groups
• Communicative skills
• Effort to understand other points of view
• To be able to assume specific roles
• Plasticity
• Respect
• Open mindedness
• Among others.

GROUP REQUIREMENTS:

• Refer to those characteristics that enable or facilitate interdisciplinary work.
• Diversity of backgrounds disciplinary trajectories of its members.
• Agreement on a common framework.
• Ability for negotiation.
(7) Institutionalization

- Transversal issue
- Role played by institutional policies
- Common working place
- Conditions assuring the group’s continuity
• Research design not based on a prior conception of interdisciplinarity

• Diversity of conceptions

• **Context:** where interdisciplinary research is developed

• **Cross-cutting categories:** complexity-institutionalization - communication
Thank you

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