

*Conferința - dezbateri  
cu participare internațională*

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## **EGALITATEA DE ȘANSE ÎN CULTURA EUROPEANĂ**

*București, 24-25 iunie 2011  
Academia Română*

# **Interdisciplinaritatea – un demers cultural**

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*A version of this work has been presented at*

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**ICIE'10**

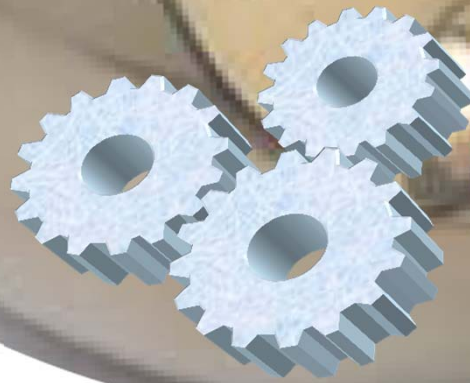
*The 5<sup>th</sup> International Conference on  
Interdisciplinarity in Education  
May 6-8, 2010, Tallinn, Estonia*

“Interdisciplinarity - Epistemology Dynamics and  
Promotion of Collaborative Activities”

Paul Dan CRISTEA and Rodica TUDUCE

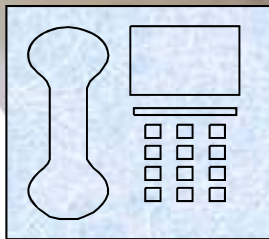
# Interdisciplinarity - motor of epistemology

- Interdisciplinarity must be understood as one of the motors of epistemology, a necessity for the progress towards a **more integrative approach** to knowledge and its effective use than the existing academic disciplines or professions.

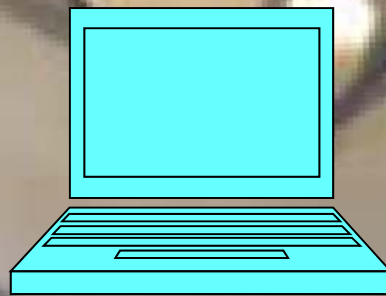


# Interdisciplinarity - motor of epistemology

- The better description of experiments and their deeper theoretical understanding often need the **enlargement of the study framework** by the use of methods and insights from several established disciplines or traditional fields.



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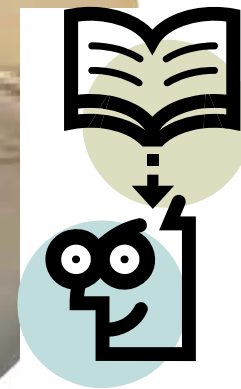
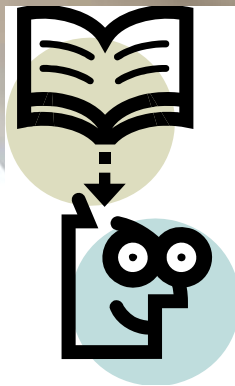


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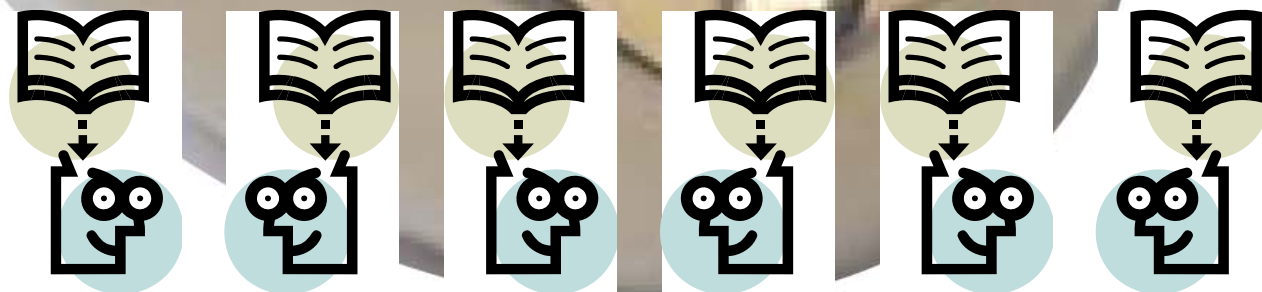
# Interdisciplinarity - motor of epistemology

- In this process, researchers from two or more disciplines pool their approaches and modify them, so that they are better suited to the problems at hand.



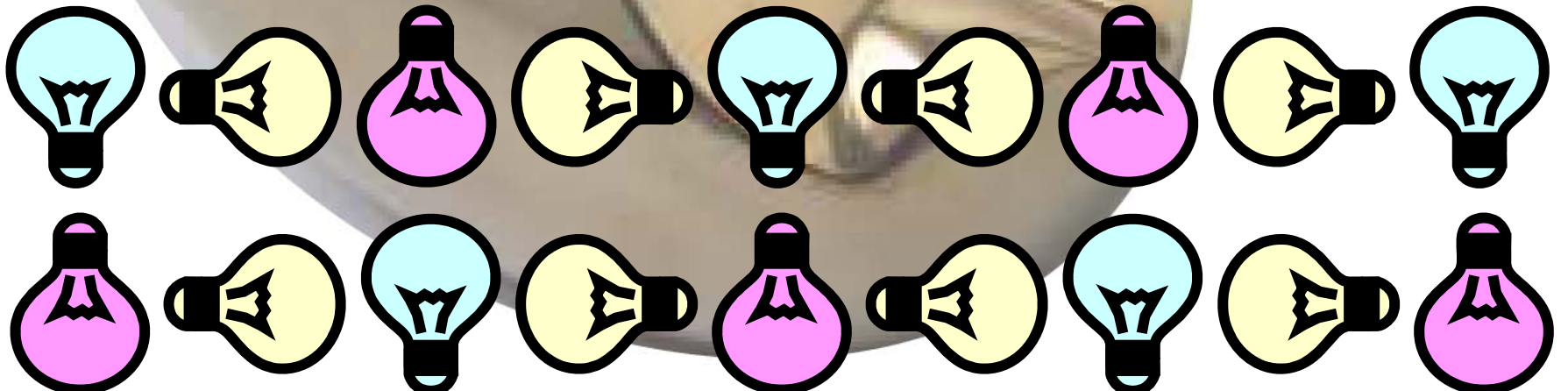
# Interdisciplinarity - motor of epistemology

- Students educated in the newly emerging interdisciplinary domain are required to understand a given subject in terms of all the involved traditional disciplines.
- Because most participants in interdisciplinary ventures were trained in traditional disciplines, they must learn to appreciate differing perspectives and methods.



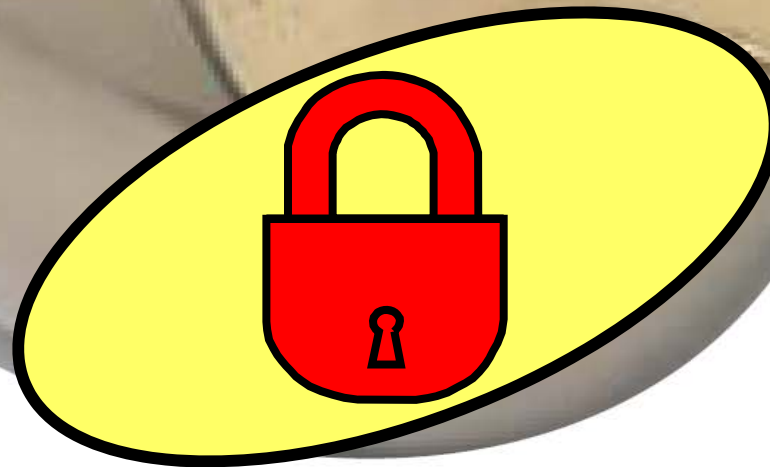
# Interdisciplinarity - motor of epistemology

- Ideally, the process results in a more comprehensive construction, able to describe and explain more complex facts, in accordance with the concepts from all the involved domains of knowledge and even with some additional specific concepts.



# Interdisciplinarity - motor of epistemology

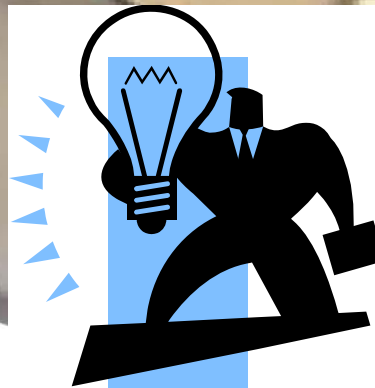
- Unfortunately, the simple understanding and announcement of the need for interdisciplinarity is not enough to actually generate higher level coherent knowledge.
- Many inadequate attempts have ended in partial accomplishment and frustration, followed by periods of abandonment and even negation of the interdisciplinarity approach itself.





# Interdisciplinarity - motor of epistemology

- In education, but not only, the most common complaint regarding unsuccessful interdisciplinary programs is the lack of synthesis.
- The multiple disciplinary perspectives do not generate the expected guidance in solving the conflicts and in achieving a coherent view of the subject.



# Interdisciplinarity - motor of epistemology

- Tremendous development of disciplinary expertise itself – currently there are more than 4000 well structured specialties.
- The re-arrangement and re-structuring of disciplines, especially through interdisciplinarity, determines the dynamics of epistemology.
- Interdisciplinary research areas are strongly motivated to become independent disciplines, when the basic conditions are fulfilled.



# Interdisciplinarity - motor of epistemology

- The process continues, other clusters of disciplines evolving towards interdisciplinarity, which plays a key role in the dynamics of epistemology.



## Interdisciplinarity - promotion of collaborative activities

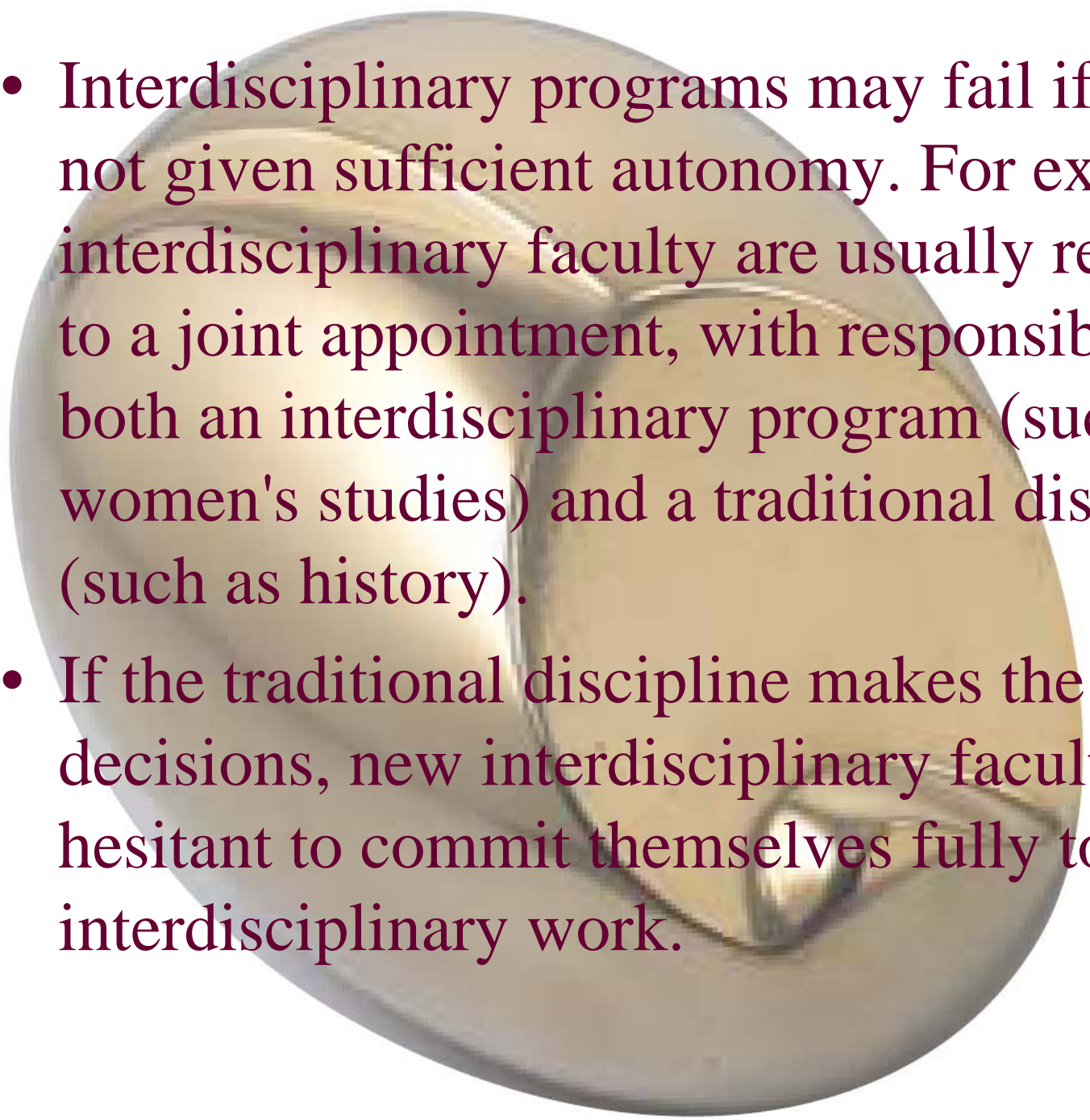
- At the applicative level, interdisciplinarity is linked to collaborative processes and teamwork in the corporate sector, and to consensus building and networking in political affairs.

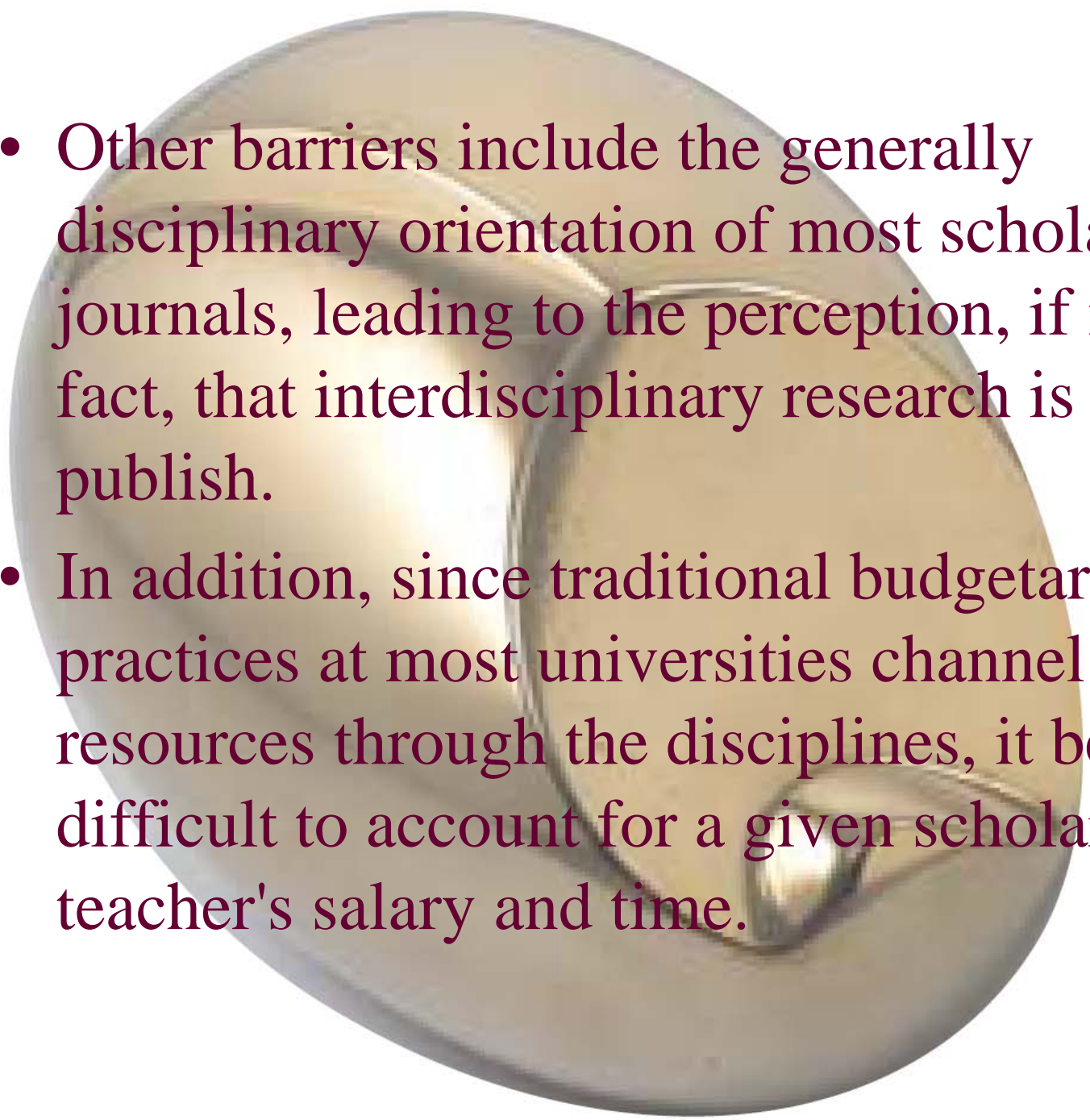


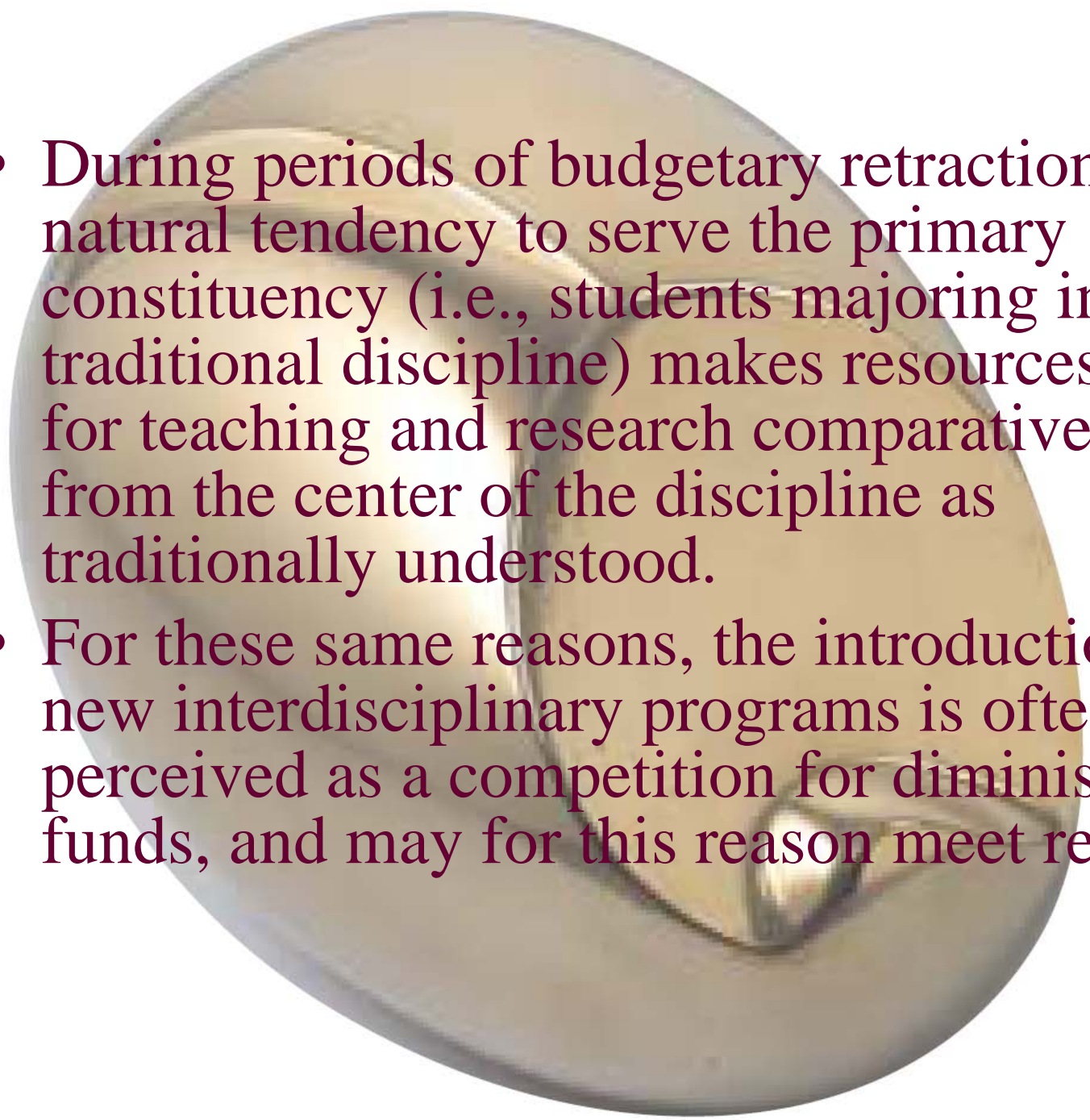
# Interdisciplinarity – new approach to long avoided subjects

- Interdisciplinary is also important for subjects long neglected or even misrepresented in the traditional disciplinary structure of academia and research institutions, for example, women's studies.

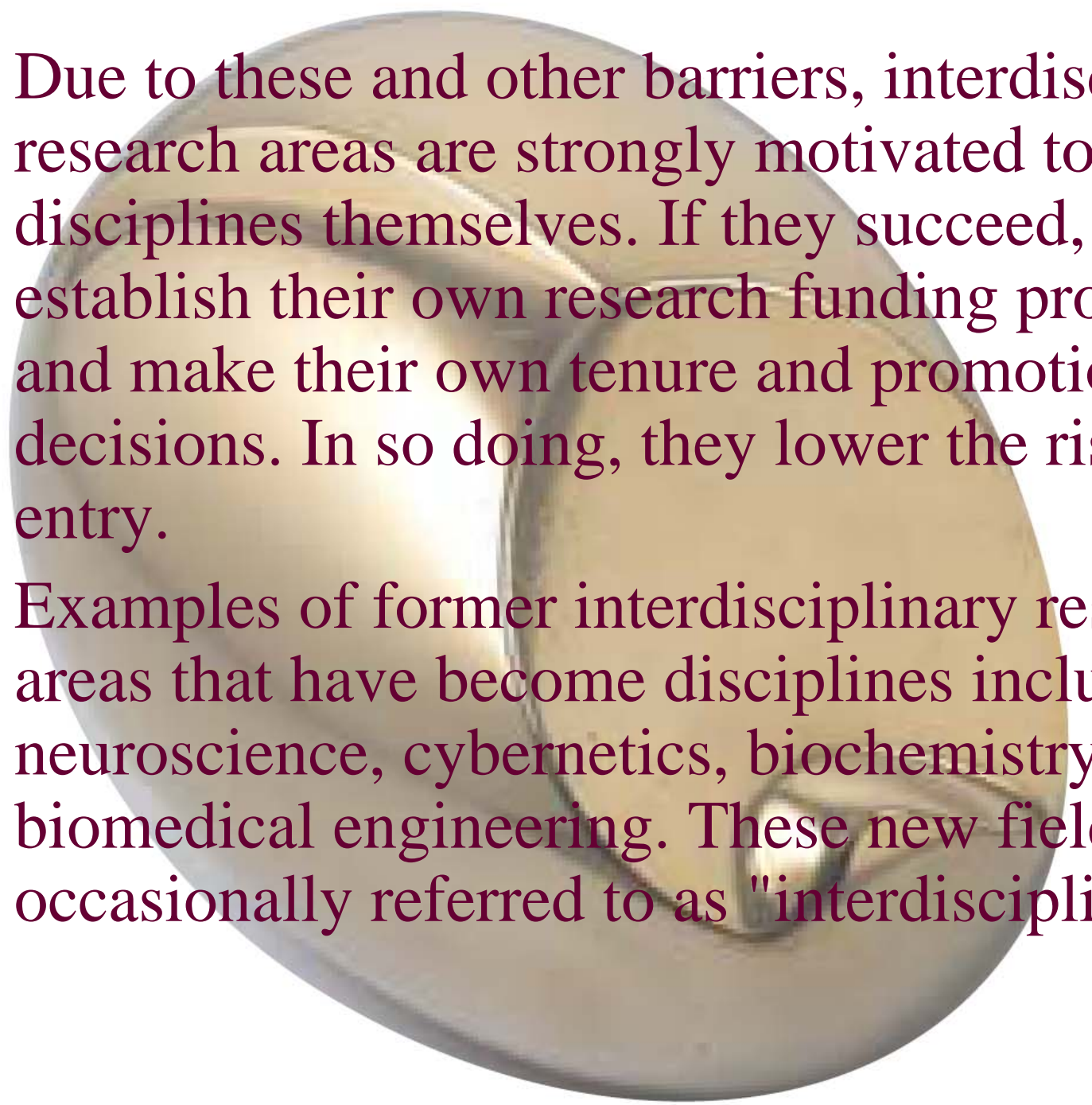


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- Interdisciplinary programs may fail if they are not given sufficient autonomy. For example, interdisciplinary faculty are usually recruited to a joint appointment, with responsibilities in both an interdisciplinary program (such as women's studies) and a traditional discipline (such as history).
  - If the traditional discipline makes the tenure decisions, new interdisciplinary faculty will be hesitant to commit themselves fully to interdisciplinary work.

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- Other barriers include the generally disciplinary orientation of most scholarly journals, leading to the perception, if not the fact, that interdisciplinary research is hard to publish.
  - In addition, since traditional budgetary practices at most universities channel resources through the disciplines, it becomes difficult to account for a given scholar or teacher's salary and time.

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- During periods of budgetary retraction, the natural tendency to serve the primary constituency (i.e., students majoring in the traditional discipline) makes resources scarce for teaching and research comparatively far from the center of the discipline as traditionally understood.
  - For these same reasons, the introduction of new interdisciplinary programs is often perceived as a competition for diminishing funds, and may for this reason meet resistance.



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- Due to these and other barriers, interdisciplinary research areas are strongly motivated to become disciplines themselves. If they succeed, they can establish their own research funding programs and make their own tenure and promotion decisions. In so doing, they lower the risk of entry.
  - Examples of former interdisciplinary research areas that have become disciplines include neuroscience, cybernetics, biochemistry and biomedical engineering. These new fields are occasionally referred to as "interdisciplines."



- **TEMPUS IV, CRH-BME – Curricula Reformation and Harmonisation in the field of Biomedical Engineering**

Biomedical Engineers today should be prepared to meet existing, or forecasted needs in the form of knowledge, skills and attitudes that address these demands of the work environment in the broader health care related sector.

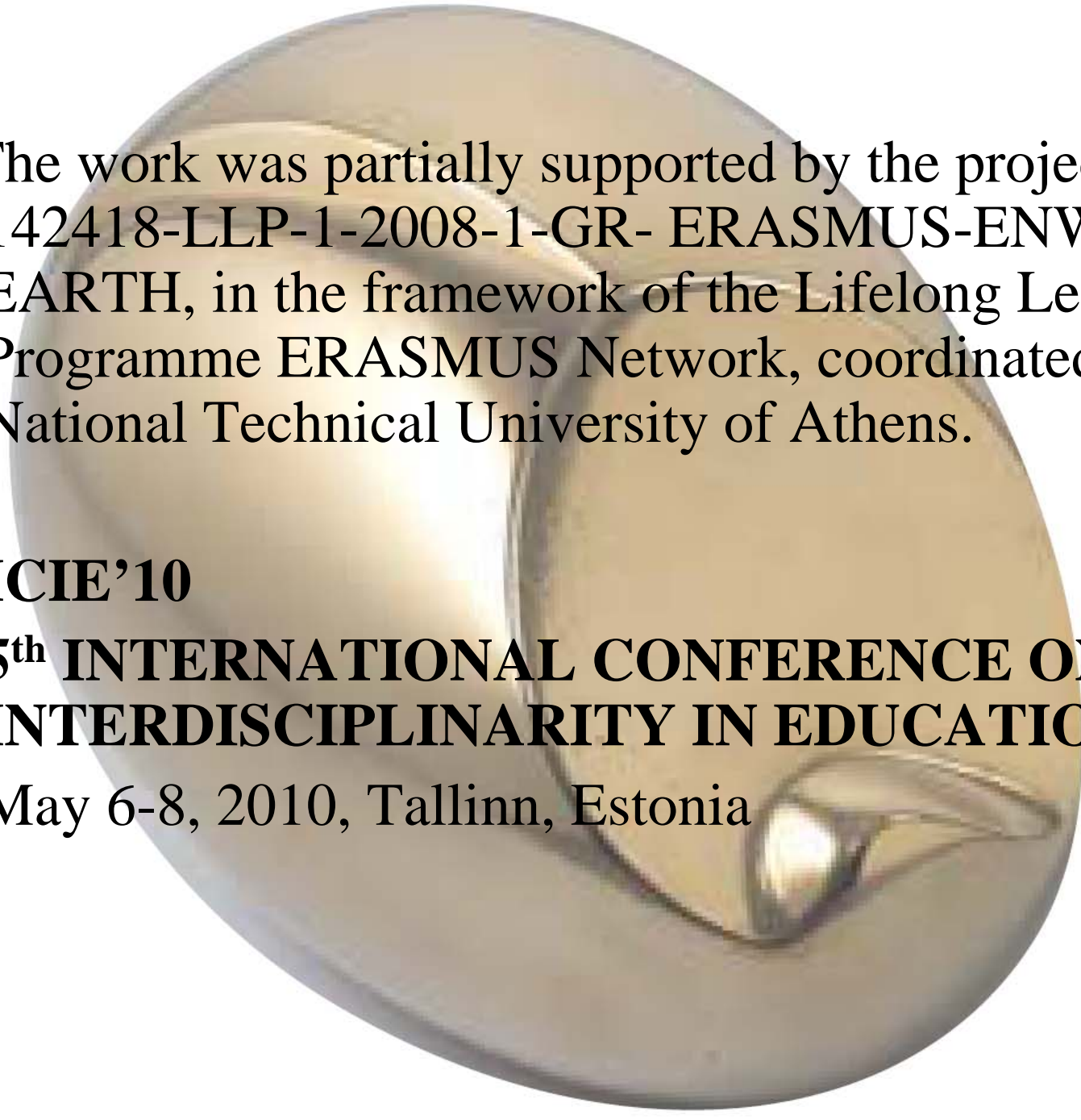
This involves academia, medical industry, hospital facilities, as well as administration and in turns imposes new challenges for advanced education in this field.



It is therefore necessary to review the educational structures on BME and adapt them to this new situation.

The main objective of this project is to update existing syllabi in the field of biomedical engineering in order to meet recent developments.

This will lead to harmonization and standardization in education and training of professionals in this field and will facilitate mutual recognition of competencies acquired.



The work was partially supported by the project  
142418-LLP-1-2008-1-GR- ERASMUS-ENW ESTIA-  
EARTH, in the framework of the Lifelong Learning  
Programme ERASMUS Network, coordinated by the  
National Technical University of Athens.

**ICIE'10**

**5<sup>th</sup> INTERNATIONAL CONFERENCE ON  
INTERDISCIPLINARITY IN EDUCATION**

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***Thank you !***