

## LIPHE4 7th Summer School

### **Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM): an innovative approach to energy analysis**

**September 17–21, 2012**

**Barcelona, Spain**

#### **Purpose of the Summer School**

The purpose of the Summer School is to provide an introduction to the theory, the methodological approach and practical applications of MuSIASEM in order to generate robust energy scenarios and assess the quality of alternative energy sources. The course will cover:

*Theoretical basis of MuSIASEM:* Introduction of innovative theoretical concepts developed in the fields of hierarchy theory, bioeconomics, bio-semiotics, complex systems theory, and post normal science, which form the building blocks of the MuSIASEM approach.

*Presentation of MuSIASEM:* Description in quantitative terms, using multipurpose grammars, of the production and consumption of energy carriers (electricity, fuels, heat) in face of a given availability of primary energy sources and in relation to a desirable expression of functions in modern economies.

*Application of MuSIASEM:* Demonstration of the use of multi-level data arrays and the “sudoku effect” in order to characterize the metabolic pattern of modern society, to generate robust scenarios, and to assess the quality of alternative energy sources and technologies.

If sufficient interest exists among the participants, additional theoretical topics can be added, such as participatory processes and implications of post-normal science.

#### **Course Format**

The five-day Summer Course follows an interactive, dynamic format. Morning lectures are alternated with afternoon working groups. The working groups allow the participants to address practical, problem-oriented, and policy-relevant research projects. Participants will be enabled to conduct studies, organized in small groups, on one of the following proposed topics: (i) comparative, integrated assessment of the

metabolic pattern of different countries; (ii) analysis of scenarios of low carbon economies; (iii) assessment of the performance of alternative energy sources; (iv) integrated analysis of a specific sustainability issue proposed by the participants. At the end of the week the participants are expected to present the results of their group work. The course language is English.

## **Participant Profile**

The course is aimed at advanced students, researchers, and experienced practitioners. Participants are expected to have a good command of written and spoken English, and to have an interest in learning about innovative approaches and ideas related to energy analysis, integrated assessment, and sustainable development. Submission of a detailed résumé is required to determine eligibility for participation. For logistic reasons (formation of working groups), the number of participants is limited to 25 persons. Admission of eligible candidates in the program is on a first come, first serve basis.

## **Resource Persons**

- ◆ Prof. Mario Giampietro, ICREA Research Professor, ICTA-UAB
- ◆ Prof. Jesús Ramos-Martín, ICTA-UAB
- ◆ Dr. Alevgul Sorman, ICTA-UAB
- ◆ Dr. Gonzalo Gamboa Jimenez, ICTA-UAB
- ◆ Mr. François Diaz Maurin, ICTA-UAB
- ◆ Mr. Tarik Serrano Tovar, ICTA-UAB
- ◆ Ms. Zora Kovacic, ICTA-UAB

## **Venue**

The Summer Course will be held in Casa de Convalescència, Barcelona, one of the last great works of Catalan Modernism. It is conveniently located along metro line L5 (blue), station Sant Pau–Dos de Maig, and metro line L4 (yellow), station Guinardó–Hospital de Sant Pau, in the immediate neighbourhood of La Sagrada Família. For more information on the conference location see: <http://www.uab-casaconvalescencia.org>

Immediately following the Summer School, from Friday 21 until Monday 24 September, the people of Barcelona celebrate the annual Mercè festival. Check out this website for the festival program: <http://www.bcn.cat/merce/en/index.shtml>

## **Course Fee**

Course Fee until 1 June 2012 (including morning coffee break, lunch, course material, and a social dinner): 400 €. The course fee shall be paid in full by bank transfer or PayPal. Late fee (after 1 June 2012): 500 euro. Contact [bukkens@liphe4.org](mailto:bukkens@liphe4.org) for payment details.

## **Contact Person**

For more information, please contact Sandra Bukkens: [bukkens@liphe4.org](mailto:bukkens@liphe4.org)

**PROGRAM**

**7th LIPHE4 Summer School, 17-21 September 2012**

**Multi-Scale Integrated Analysis of Societal and Ecological Metabolism (MuSIASEM): an innovative approach to energy analysis**

	<b>Morning 9:00 – 13:30</b>	<b>Afternoon 15:00 – 18:30</b>
Monday 17.09.2012  Coffee Break 11.00-11.30	Introduction to Summer School  Presentation of the participants and resource people  Overview of the energetic predicament. Introduction to the MuSIASEM approach	Discussion and selection of topics for the research project (with the resource persons) and formation of working groups.
Tuesday 18.09.2012  Coffee Break 11.00-11.30	Basic theoretical concepts and analytical tools of MuSIASEM	Working on case studies – framing the problem, issue definition, social actors, sketching the semantic aspects of the grammar
Wednesday 19.09.2012  Coffee Break 11.00-11.30	Application of the multi-level grammar MuSIASEM: (i) making scenarios; (ii) assessing the quality of alternative energy sources/ technologies	Working on case studies – generating quantitative protocols within the chosen grammar (data collection, calculations and interpretation)
Thursday 20.09.2012  Coffee Break 11.00-11.30	Addressing conceptual problems emerged in the working groups	Working on case studies – further elaboration of the integrated characterization, preparing the presentation
Friday 21.09.2012  Coffee Break 11.00-11.30	Presentation of case studies by participants	Wrap-up (theory and practice) and course feed-back from participants

For more information, contact Sandra Bukkens: [bukkens@liphe4.org](mailto:bukkens@liphe4.org)