Sixth Biennial Emergy Research Conference Schedule

Wednesday, January 13, 2010
18:00-21:00 Pre-Registration and Open House
Center for Environmental Policy, Phelps Lab

Thursday, January 14, 2010
7:30 Check-In and Registration
8:20 Opening Welcome: Cammy Abernathy, Dean, College of Engineering

Morning (Mark Brown presiding)
Session I “Theory & Conceptual Frameworks”
8:30 Agent based emergy analysis: A Lagrangian model of energy memory
Caner Kazanci, John R. Schramski, Simone Bastianoni, and Bill Tollner
8:55 Emergy analysis and ecological footprint: drawing a parallel between the methodologies for a sub-national case study
Lucas Pereira and Enrique Ortega
9:20 Critical review of the usage of transformity values in recent studies
Nana Yaw Amponsah and Olivier Le Corre
9:45 Towards a database of unit emergy values
Sergio Ulgiati, Pedro Lomas, Silvio Viglia, Pan Zhang, and Amalia Zucaro
10:10 Human labor and services in emergy evaluation at different scales
Simone Bastianoni and Federico M. Pulselli
10:30 BREAK

Session II “Agricultural and Rural Systems”
11:00 Emergy-based environmental impact assessment for urban metabolic process: a case study of Beijing, 1999-2006
Gengyuan Liu, Zhifeng Yang, and Bin Chen
11:25 Small scale community based management of marine resources vs. large scale industrial aquaculture in Chile – consequences and methodological implications
Charlotte Lagerberg Fogelberg and Daniel A. Bergquist
11:50 Emergy Synthesis of Urban Agriculture
Daniel A. Bergquist
12:15 Emergy evaluation of an extensive cattle ranching system in Pantanal watershed, Brazil
Fabio Takahashi, S. Santos, U. Abreu, and Enrique Ortega
12:40 LUNCH

Afternoon (Torbjörn Rydberg presiding)
Session III “Economic & Social Systems”
13:40 Epistemological comparative analysis of neoclassical and biophysical
economics: A valuation study of wetlands utilization of wastewater treatment using money, embodied energy, and emergy analyses
Jae-Young Ko and Charles A.S. Hall

14:05 **Emergy evaluation of circular economy system**
Lungmei Wang, Yanchun Jia, and Enlong Meng

14:30 **Culture in information cycles: An emergy evaluation of conversation**
Thomas Abel

14:55 **Human service emergy delivery rates for native cultures**
Stewart A.W. Diemont

15:20 **BREAK**

Session IV “Biofuels”

15:45 **Critical analysis of the Swedish biofuels policy using emergy synthesis**
Otávio Cavalett and Torbjörn Rydberg

16:10 **Emergy evaluation of an integrated bioenergy production system: The case study of Enkoping (Sweden)**
Elvira Buonocore, Pier Paolo Franzese, Torbjörn Rydberg, and Sergio Ulgiati

16:35 **The prediction of ecological potential for developing salt-tolerant oil plants on coastal saline land in Sheyang Saltern, China**
Zhouran Li, Gang Li, and Pei Qin

17:00 **Energy systems diagramming as the link to merge systems theory with discourse analysis – the case of large scale biofuel production**
Torbjörn Rydberg and Otávio Cavalett

18:00-19:00 **Smathers Library, Grand Reading Room, 2nd Floor**
18:00-18:20 Music by Dale Crider
   Sneak Peek at the H.T. Odum Collection
   Refreshments
18:20-18:30 John Nemmers – Greetings and talk about H.T. Odum Collection
18:30-19:00 Tours and socializing

19:00 **DINNER on your own**
**Friday, January 15, 2010**

**Morning (Sergio Ulgiati presiding)**

**Session V “Theory & Conceptual Frameworks”**

8:30  *The maximum ordinality principle: A harmonious dissonance*

*Corrado Giannantoni*

8:55  *Emergy quantification of educational attainment in the U.S. and the emergy signature of the nation from 1940 to 2007*

*Daniel E. Campbell, Hongfang Lu, and Kacy Kolb*

9:20  *Dynamic emergy accounting: a review, mathematical revisions, and implications for modeling emergy recycling*

*David R. Tilley*

9:45  *Some continuous empower2 models*

*Dennis G. Collins*

10:10 *New emergy indices for a prosperous way down*

*Enrique Ortega*

10:35  **BREAK**

**Session VI “Agricultural and Rural Systems”**

11:00  *Emergy synthesis of ecosystem service in agricultural land: a case study of Taoyuan area, Taiwan*

*Ying-Chieh Lee and Shu-Li Huang*

11:25  *Emergy assessment of Cinta Senese breeding and comparison with conventional pig production*

*Benedetto Rugani, Federico M. Pulselli, and Valentina Niccolucci*

11:50  *Energy self-sufficiency from an emergy perspective exemplified by a model system of a Danish farm*

*Ostergård, H. and Markussen, M. V.*

12:15  *Eco-efficiency evaluation for automobile and bicycle as personal transportation*

*Hija Kim, Munbo Choi, Daeseok Kang, and Sukmo Lee*

12:40  **LUNCH**

**Afternoon (David Tilley presiding)**

**Session VII “Agricultural and Rural Systems“**

13:40  *Emergy accounting of an integrated grazing-milking system in Argentina’s Pampas*

*Gloria C. Ròtolo, Verónica Charlon, and Pier Paolo Franzese*

14:05  *The use of emergy for measuring the environmental costs and benefits of agricultural practices in Scotland*

*Robin W. Burgess, C.F.E. Topp, and G.R. Squire*

14:30  *Emergy evaluation and modeling of ecological and economic benefit of different grassland mode in north China*

*Xiaobin Dong, Mark T. Brown, David Pfahler, Maochao Yan, and Xinshi Zhang*
14:55  Future directions for emergy: Lessons from developments in other fields of environmental accounting  
Wesley Ingwersen

15:20  BREAK

Session VIII “Regional Systems”
15:45  Emergy synthesis of Albania for 2007  
Pëllumb Harizaj
16:10  Environmental valuation at Fernando de Noronha Island  
Antônio L. Philomena and Karla Leal Cozza
16:35  Investigating thermodynamic and kinetic aspects of a territorial system through empower  
Riccardo M. Pulselli, P. Romano, and E. Tiezzi
17:00  Estimating payments for environmental services of a Brazilian sub-basin  
Maria Silvia Romitelli and Marlei Roling Scariot

18:00 - 21:30  Poster Session & Conference Banquet  
Keene Faculty Center in Dauer Hall  
(hosted by the Center for Environmental Policy)

POSTERS PRESENTED:
Assessment of emergy indices dynamics on agricultural production of Mogi-Guacu and Pardo watershed, Brazil  
Feni Agostinho, Luis Alberto Ambrósio, and Enrique Ortega
Forest recovering model: An application  
Teldes C. Albuquerque, Thiago J. Roncon, and Enrique Ortega
Use of emergy analysis in comparing hydrogen production via steam methane reforming and electrolysis  
Nana Yaw Anponsah and Olivier Le Corre
Emergy in labor – approaches for evaluating embodied knowledge  
Daniel A. Bergquist, Wes Ingwersen, and Danielle King Liebenow
Water hyacinth growth dynamics in eutrophic water  
Luz S. Buller, Thiago J. Roncon, Ivan Bergier, and Enrique Ortega
The emergy baseline for the earth: Is it arbitrary?  
Daniel E. Campbell, S. Bastianoni, and Hong-Fang Lu
A rapid method for quantifying the empower density of states: Application of the LDI to Minnesota and Marylany  
Daniel E. Campbell, Sherry Brandt-Williams, Denis White, and Elliott T. Campbell
The emprint: A snapshot of system condition on the road to sustainability  
Daniel E. Campbell, Denis White, Sharlynn Sweeney, A. Pizzagallo, Simone Bastianoni, Hong-Fang Lu, Mark T. Brown, Federico M. Pulselli, Wesley Ingwersen, and Elliott T. Campbell
Emergy synthesis for valuing the hydrologically driven ecosystem services of forest lands  
Elliott Campbell and David R. Tilley
Emergy indices for assessing vulnerability
  Li-Fang Chang and Shu-Li Huang

Changing the paradigms to change the climate
  Ari N.R. Costa and Enrique Ortega

Emergy accounting of a coffee farm in the Brazilian savannah
  B.F. Giannetti, Y. Ogura, S.H. Bonilla, and Cecilia M.V.B. Almeida

Emergy synthesis of food consumption pattern change in Taiwan
  Ying-Chen Lin and Shu-Li Huang

Comparison of emergy indices for horticultural production through conventional and organic methods in the county of Ibiúna, São Paulo, Brazil
  Elisa Savoko Nakajima, Antonio Nobre, and Enrique Ortega

Emergy evaluation of landfills for methane generation, recoverability, and sustainability
  Smitti Nepal and Elliott T. Campbell

Emergy evaluation of a green façade
  Jeffrey W. Price and David R. Tilley

Emergy study of worldwide biogeochemical formation of fossil fuels
  Gaetano Protano and Sergio Ulgiati

Modeling the Pantanal ecosystem
  Maria Silvia Romitelli and Marlei Roling Scariot

Integrated systems for food, ethanol and environmental services production in land reform settlements
  Alexandre Souza and Enrique Ortega

Ecological evaluation of preserved forest’s biodiversity, ecosystems functions and environmental services
  Thiago J. Roncon and Enrique Ortega

Exploring resource use and biophysical constraints of Scottish agriculture at regional and national scales
  Silvio Viglia, Amalia Zucaro, Pier Paolo Franzese, Kirsty L. Blackstock, Keith B. Matthews, and Sergio Ulgiati

A comparison of the total emergy requirements and human risks of treating municipal wastewater to background conditions using conventional systems and wetlands
  Brandon K. Winfrey and David R. Tilley

Two different nursery propagation methods for submerged aquatic vegetation restoration: Evaluation using emergy analysis
  Elizabeth K. Zinecker

Emergy evaluation of Italian agriculture across space and time scales
  Amalia Zucaro, Silvio Viglia, and Sergio Ulgiati
Saturday, January 16, 2010

Morning (Dan Campbell presiding)
Session IX “Theory and Conceptual Frameworks”
8:30 Fundamental challenges of using emergy to quantify resource consumption
Kyrke Gaudreau, Roydon A. Fraser, and Stephen Murphy
8:55 An uncertainty model for emergy
Wesley Ingwersen
9:20 “Quantus” emergy
Mark T. Brown
9:45 The environmental value of the earth’s biomes
Sherry Brandt-Williams and Mark T. Brown
10:10 The ‘locations’ of people and households within a culture-nature energy transformation hierarchy in Hualien County, Taiwan
Thomas Abel

10:35 BREAK

Session X “Forest Systems”
11:00 Emergy and exergy evaluation of four forest restoration modes in low subtropical China
Hong-Fang Lu, Zhuo-Han Wang, Daniel E. Campbell, and Bin Chen
11:25 Ecological-economic evaluation of environmental services of mangrove wetlands in Sidoarjo Regency, East Java, Indonesia
John McLachlan-Karr

11:50 Conference Discussion

13:00 LUNCH and Meeting of the International Society for the Advancement of Emergy Research (ISAER)
(lunch provided by ISAER)

19:00 END OF CONFERENCE PARTY
(hosted by Mark Brown and Carol Binello)