ACADEMY OF ECONOMIC STUDIES,
ALTERNATIVE SCIENCES ASSOCIATION Bucharest Romania

Bucharest, Romania 18-26th July 2008

Hotel Ambassador

together with:

Faculty of Physics - University of Bucharest
HYPERION University Bucharest
SBSol Group Bucharest
Romanian Academy The Institute of Economic Forecasting
Spiru Haret University of Bucharest

ECONOPHYSICS AND COMPLEXITY

International Training School
Granted with 3 TCUs

ALTERNATIVE SCIENCES BRIDGING EDUCATION ANS SOCIETY

Round Tables and satellite workshops:

1. Quo vadis science and education?
2. New opportunities and tools for business and corporate: dismantle conventional thought
3. Alternatives to traditional business analysis: Business Intelligence, Emotional Intelligence, Competitive Intelligence
4. Management of risk and crisis in the context of uncertainty
5. Endogeneous money and credit crunch
6. Cultural Anthropology and Communication
7. Gender politics in science and education

List of Participants

1. Potential Key Invited speakers

Names	Affiliation:	Email:
1. Paul Ormerod	Volterra Consulting Ltd London UK	pomerod@volterra.co.uk

2. Thomas Lux	University of Kiel Germany	lux@bwl.uni-kiel.de
3. Marcel Ausloos	University of Liege Belgium	marcel.ausloos@ulg.ac.be
4. Peter Richmond	Trinity College Dublin Ireland	Richmond@clara.co.uk
5. Araceli Proto	SYSES University of Buenos Aires Argentina	aproto@fi.uba.ar
6. Gustavo Vargas	Professor UNAM Mexico City Mexico Mexico	gustavovargas@hotmail.com
7. Steve Keen	A/professor University of Western Sydney Australia	s.keen@uws.edu.au
8. Jurgen Mimkes	Professor University of Paderborn Germany	mimkes@physik.uni-paderborn.de
9. Santiago Puentes	Professor UNAM Mexico City Mexico Mexico	santiani@servidor.unam.mx
10. Mike Radzicki	Worcester Polytechnic MA USA	mjradz@wpi.edu
11. Stefan Thurner	Medical University of Vienna Austria	thurner@univie.ac.at
12. Wolfgang Eckerlala	Maths-Up.Ltd Vienna, Austria	wolfgang.ecker-lala@math-up.com
13. Etta Mimkes	Children psychotherapist Paderborn Germany	ettamimkes@gmx.de
14.Pam Ormerod	Economic consultant London UK	pomerod@volterra.co.uk

2. Invited speakers

	Affiliation:	Email:
1. Bulinski Mircea	Senior lector University of Bucharest	Mircea_bulinsky@yahoo.com
2. Costea Carmen	Professor ASE Bucharest Faculty of Commerce	Carmen.costea@com.ase.ro
3. Gheorghiu Anca	Vice Rector Hyperion University Bucharest	Anca.gheorghiu@gmail.com
4. Gheorghiu Anda	Lawyer PhD at OMBUDSMAN Romania	Andagheorghiu@yahoo.com
5. Sorin Pislaru	Journalist Ziarul Financiar Bucharest	Sorin.pislaru@zf.ro
6. Nicolae Mariana	A/Professor ASE Bucharest Faculty of REI	Mariananicolae2004@yahoo.com
7. Pistol Luminita	Professor Spiru Haret University Bucharest	Prolu2001@yahoo.com
8. Popescu Constantin	Professor ASE Bucharest Faculty of Economics	costicapopescu@yahoo.com
9. Dragan Augustin	Director general SISTEC SBSol Bucharest	Luminita.scarlat@sistec-sbsol.ro
12.Tais Ioana	Dipl.ec.Hyperion University Bucharest	ioana.tais@yahoo.com
13.Tachiciu Laurentiu	Professor ASE Bucharest Faculty of Commerce	Ltachiciu@ase.ro
14.Tasnadi Alexandru	Professor ASE Bucharest Faculty of Economics	Relationistul@yahoo.com

COMMITTEES:

a. Scientific Committee

- **Tomaso Aste** (The Australian National University, Canberra, Australia)
- **Tiziana Di Matteo** (The Australian National University, Canberra, Australia)
- **Mauro Gallegati** (Università Politecnica delle Marche, Ancona , Italy)
- **Alan Kirman** (Université d'Aix Marseille III, Marseille, France)
- **Thomas Lux** (University of Kiel, Kiel, Germany)
- **Rosario N. Mantegna** (Università di Palermo, Palermo, Italy)
- **Paul Ormerod** (Volterra Consulting Group, London, UK)
- **Peter Richmond** (Trinity College Dublin, Ireland)
- **Enrico Scalas** (Università del Piemonte Orientale, Alessandria, Italy)
- **Sorin Solomon** (Hebrew University of Jerusalem, Jerusalem, ISRAEL)
- **H. Eugene Stanley** (Boston University, Boston, USA)
- **Constantino Tsallis** (Santa Fe Institute, New Mexico, USA and CBPF, Rio de Janeiro, Brazil)
- **Yi-Cheng Zhang** (University of Fribourg, Fribourg, Switzerland)
- Prof. Dr. Carmen Costea – Academy of Economic Studies, Bucharest, Romania
- Senior Lect. Dr. Mircea Bulinski University of Bucharest Faculty of Physics

b. Program Committee

- Senior Lect. Dr. Mircea Bulinski – University of Bucharest, Romania
- Prof. Dr. Alexandru Tasnadi, Academy of Economic Studies, Bucharest, Romania
- Prof. Dr. Constantin Popescu Faculty of Economics Academy of Economic Studies
- Prof.Dr. Lucian Liviu Albu IPE Romanian Academy
- Prof. Dr. Mihail Pascu INFLPR Bucharest
- Prof.Dr.Luminita Pistol Spiru Haret Unviersity Bucharest, Romania

- Augustin Dragan general manager SISTEC SBSOL Bucharest

c. Organizing Committee

- Prof. Dr. Anca Gheorghiu vice-rector Hyperion University Bucharest, Romania
- Sn Res Dr Elena Pelinescu IPE Romanian Academy
- Prof. Dr. Anda Gheorghiu lecturer, expert lawyer Ombudsman
- Prof.Dr.Luminita Pistol Spiru Haret Unviersity Bucharest, Romania
- Miltiade Stanciu PhD Student ASE
- Anca Varga PhD Student ASE

COSTS: 100 Euros - for any participant - witout metioning the accomodation and daily expenses. Some scholarships will be provided for outstanding applicants under a CV and a motivation letter sent to alternative.sciences@gmail.com

Accommodation: Hotel Ambassador Bucharest http://www.hotel.ambasador.bucuresti.tourneo.ro/F_New/ Founded in 1937, Hotel Ambasador has a long tradition in the art of hospitality. The imposing building of the hotel, declared monument of architecture, raises its 12 floors on Magheru Boulevard, in the very heart of Bucharest.

Located at only 20 minutes away from the Bucharest International Airport Henri Coanda and 10 minutes from the main Railway Station Gara de Nord, it is the ideal location for tourists willing to visit the city as well as for business men.

The comfortable and spacious rooms and the kindness of a well-trained personnel are the guarantee of a successful stay.

The hotel has 209 rooms out of witch 5 are apartments, 4 studio flats, 63 single rooms, 137 doubles equipped with bathrooms, TV cable, mini-bar, internal and international phone line.

Most of the rooms offer a panoramic view of the city center. The rooms have a different architecture they are silent and comfortable with new and modern endowments, including air conditioned, according to the three stars standards.

Restaurant

Ambasador Restaurant, situated at the first floor, offers by means of impeccable services, various dishes from the Romanian and the International cuisine, collection wines and fine drinks. From the stylish open terrace of the restaurant, you may admire a charming view of the boulevard.

For different activities, the hotel offers you two conference rooms with a capacity of 20, respectively 50 places - equipped with flipchart, video and retro projector, sound effects, air-conditioned and internet connection. If you would like to have a cup of coffee, relax playing roulette or shopping, it is not need to leave the hotel: an elegant bar, a modern casino and many commercial spaces.

Hotel Facilities: Room service (24h) ;Breakfast (Swedish buffet) ;Fitness room; Sauna/Massage ;Hair-dressing/manicure/pedicure; Conference room; Parking (video surveillance) ;Laundry - dry cleaning laundry; Internet access; Luggage room; Seif.

Paid Services: Phone Services ; Internet Access Services ; Fax Copy Services; Hair-dressing/Manicure/Pedicure; Laundry - Dry cleaning laundry; 24h room-service; Sauna/Massage; Fitness Room; Parking (video surveillance); Conference Rooms

Rates: available soon on the webiste

- Single room (one bed): ... RON/per night BB
- Twin Room, Single Occupancy: ... RON/per night BB
- Twin Room, Twin Occupancy: .... RON/per night BB
- Meals: ... RON per day per person including coffee breaks
- Official dinner: ... RON
- Accommodation costs quoted are inclusive full option and GST and are quoted in RON.

Travel information:

Bucharest (Romanian: Bucuresti) is the capital city and industrial and commercial centre of Romania. It is located in the southeast of the country, at 44°25 N, 26°06 E, and lies on the banks of the Dambovitza River. It was originally known as Dambovitza citadel.

Bucharest is situated on the banks of the Dambovitza River, which flows into the Arges River, a tributary of the Danube. Several lakes – the most important of which are Lake Floreasca, Lake Tei and Lake Colentina – stretch across the city, along the Colentina River, a tributary of the Dambovitza. In addition, in the centre of the capital there is a small artificial lake – Lake Cismigiu – surrounded by the Cismigiu Gardens. The Cismigiu Gardens have a rich history, being frequented by famous poets and writers. Opened in 1847 and based on the plans of German architect Carl F.W. Meyer, the gardens are currently the main recreational facility in the city centre.

Besides Cismigiu, Bucharest contains several other large parks and gardens, including Herastrau Park and the Botanical Garden. Herastrau is a large public park located in the north of the city, and the site of the Village Museum, while the Bucharest's botanical garden is the largest in Romania and contains over 10,000 species of plants, many of them exotic; it was once a pleasure park for the royal family.

Bucharest is situated in the south eastern corner of the Romanian Plain, in an area once covered by the Vlasiei forest, which, after it was cleared, gave way to a fertile flatland. As with many cities, Bucharest is traditionally considered to have seven hills, in the tradition of the Seven Hills of Rome. Bucharest's seven hills are Mihai Voda, Dealul Mitropoliei, Radu Voda, Cotroceni, Spirei, Vacaresti and Sf. Gheorghe Nou. By European standards, Bucharest is not an old city, its existence first being referred to by scholars as late as 1459. Since then it has gone through a variety of changes, becoming the state capital of Romania in 1862 and steadily consolidating its position as the centre of the Romanian mass media, culture and arts. Its eclectic architecture is a mix of historical, interbellum, Communist-era and modern. In the period between the two World Wars, the city's elegant architecture and the sophistication of its elite earned Bucharest the nickname of the "Paris of the East" or "Little Paris" (Micul Paris). Although many buildings and districts in the historic centre were damaged or destroyed by war, earthquakes and Nicolae Ceausescu's program of

systematization, many survived. In recent years, the city has been experiencing an economic and cultural boom. According to January 2006 official estimates, Bucharest proper has a population of 1,930,390 the urban area extends beyond the limits of Bucharest proper and has a population of 2.1 million people. Adding the satellite towns around the urban area, the metropolitan area of Bucharest has a population of 2.6 million people.. Bucharest is the sixth largest city in the European Union by population within city limits.

Economically, the city is the most prosperous in Romania and is one of the main industrial centers and transportation hubs of Eastern Europe. As the most developed city in Romania, Bucharest also has a broad range of educational facilities.

The city proper is administratively known as the Municipality of Bucharest (Municipiul Bucuresti), and has the same administrative level as a county, being further subdivided into six sectors.

Bucharest is the most economically-developed and industrialized city in Romania, producing around 21% of the country's GDP and about one-quarter of its industrial production, while only accounting for 9% of the country's population. Almost one third of national taxes are paid by Bucharest's citizens and companies. Based on local purchasing power, Bucharest has a per-capita GDP of 64.5% that of the European Union average (2004), and more than twice the Romanian average. Because Bucharest produces around 21% of Romanian GDP for a population of around 2 million, the GDP (PPP) per capita of the city would be US$30,057. The city's strong economic growth has revitalized infrastructure and led to the development of many shopping malls and modern residential towers and high-rise office buildings. In September 2005, Bucharest had an unemployment rate of 2.6%, significantly lower than the national unemployment rate of 5.7%.

Bucharest's economy is mainly centered on industry and services, with services particularly growing in importance in the last ten years. The city serves as the headquarters of 186,000 firms, including nearly all large Romanian companies. An important source for growth since 2000 has been the city's property and construction boom, which has resulted in a significant growth in the construction sector. Bucharest is also Romania's largest centre for information technology and communications and is home to several software companies operating offshore delivery centers. Bucharest contains Romania's largest stock exchange, the Bucharest Stock Exchange, which was merged in December 2005 with the Bucharest-based electronic stock exchange, Rasdaq.

The city has a number of international supermarket chains such as Carrefour, Cora and METRO. Now, the city is undergoing a retail boom, with a large number of supermarkets, and hypermarkets, constructed every year. For more information, see supermarkets in Romania. The biggest modern shopping centers in Bucharest are Bucharest Mall, Plaza Romania, City Mall, Jolie Ville Galleria and Unirea Shopping Center. However, there are also a large number of traditional markets; the one at Obor covers about a dozen city blocks, and numerous large stores that are not officially part of the market effectively add up to a market district almost twice that size.

Public Transport

Bucharest's extensive public transport system is the largest in Romania and the third largest in Europe. It is made up of the Bucharest Metro, as well as a surface transport system run by RATB (Regia Autonoma de Transport Bucuresti), which consists of buses, trams, trolleybuses and light rail. In addition, there is a private minibus system. The metro and the surface transport system — used to be run by two separate state-owned corporations but have been merged in early 2007 to form the Bucharest Metropolitan Transport Board. As of 2007, there is a limit of 10,000 taxicab licenses down from 25,000 in the 1990's, and the even higher demand is supplied by taxis registered in Ilfov County.

Air

The city is served by two airports: Henri Coanda International Airport (formerly Otopeni) and Aurel Vlaicu International Airport (formerly Baneasa). Henri Coanda is the largest airport in Romania with 5 million passengers in 2007 and the main hub for the national operator TAROM. It is also connected to several international airports by a wide range of international airlines. The smaller Aurel Vlaicu Airport is used for charter flights and low-cost carriers.

Railways

Bucharest is the hub of Romania's national railway network, run by Caile Ferate Romane. The main railway station is Gara de Nord, or North Station, which provides connections to all major cities in Romania as well as international destinations such as Budapest, Sofia, Vienna, Prague, Moscow, Istanbul, Chisinau, Belgrad, and many others European capital and city. The city also has five other railway stations run by CFR, most important are Basarab (in proximity of North Station), Obor, Baneasa, Progresu, which are in the process of being integrated in a commuter railway serving Bucharest and the surrounding Ilfov County. From the Bucharest, depart seven main line.

Infrastructure

The city's municipal road network is centered on a series of high-capacity boulevards, which generally radiate out from the city centre to the outskirts. The main axes, which run north-south, east-west and northwest-southeast, as well as one internal and one external ring road, support the bulk of the traffic. The city's roads are usually very crowded during rush hours, due to an increase in car ownership in recent years. Every day, there are more than one million vehicles traveling within the city. This has resulted in wear and potholes appearing on many Bucharest roads, particularly secondary roads, this being identified as one of Bucharest's main infrastructural problems. In recent years, there has been a comprehensive effort on behalf of the City Hall to boost road infrastructure and according to the general development plan, nearly 2000 roads are expected to be repaired by 2008.

Roads

Bucharest is also a major intersection of Romania's national road network. It is the origin of most of the country's national roads and motorway, which link the city to all of Romania's major cities as well as to neighboring countries such as Hungary, Bulgaria and Ukraine. Romania's two motorways currently in operation, the A1 to Pitesti and the A2, in Romanian "Autostrada Soarelui" (the sun motorway) to Dobrogea region and Constanta both start from Bucharest. The planned A3 and A4 freeways will also radiate from the Voluntari region in the city's northern outskirts.

Water

Although it is situated on the banks of a river, Bucharest has never functioned as a port city, with other Romanian cities such as Constanta and Braila acting as the country's main ports. However, the Danube-Bucharest Canal, which is 73 km (45 mi) long, is currently in construction and is around 60% completed. When finished, the canal will link Bucharest to the Danube River and, via the Danube-Black Sea Canal, to the Black Sea. This corridor is expected to be a significant component of the city's transport infrastructure and increase sea traffic by a large margin.

Climate:

Bucharest has a continental climate, characterized by hot dry summers and cold winters. Due to its position on the Romanian Plain, the city's winters could get windy, even though some of the winds are mitigated due to urbanization. Winter temperatures are often below 0 °C (32 °F), even though they rarely drop below −10 °C (14 °F). In summer, the average temperature is approximately 23 °C (73 °F) (the average for July and August), despite the fact that temperatures sometimes reach 35 °C (95 °F) to 40 °C (104 °F) in mid-summer in the city centre. Although average precipitation and humidity during summer is low, there are infrequent yet heavy and often violent storms. During spring and autumn, temperatures vary between 18 °C (64 °F) to 22 °C (72 °F), and precipitation during this time tends to be higher than in summer, with more frequent yet milder periods of rain.
International diplomatic information: www.mae.ro
National Currency: ROL and RON 1 RON= 10,000 ROL and 1 Euro= 3.6 RON

INTERNATIONAL KEY INVITED SPEAKERS

PAUL OMEROD

Author of **the Death of Economics, Butterfly Economics and Why Most Things Fail**

http://www.paulormerod.com/index.html

Research Interests And Articles

Much Of My Work Is Linked By The Common Theme Of Complexity. In Complex Systems, the Individual Components of the System Interact With Each Other To Produce Patterns of Behavior at the Aggregate, System-Wide Level. Often, These Patterns Are Unexpected And Cannot Be Deduced From The Rules Of Behavior Followed By The Individual Components. The Whole Is Different To The Simple Sum Of The Parts.
For Economists, I Am Essentially Interested In How To Model And Test Agent Behavior When Maximization Is Not Possible, Because Of The Cognitive Difficulties Involved.
However, Complexity Has Implications Not Just for Economics, But also For Business As well As the Other Social Sciences.
Most of the Articles Available Below Are Technical, But Those Marked [Gen] Are Suitable For General Readers.

The Business Cycle

Ever Wondered Why Economic Forecasts Are Often Wrong? Here Is An Article Published In Physica A, The World's Leading Statistical Physics Journal, Which Explains Why..
Would You Like To Be On The Bank Of England's Monetary Policy Committee. This Article, Published By the Manchester Statistical Society, Tells You Why Membership Is a Sinecure [Gen]
Conventional Economics Lacks A Satisfactory Theory Of The Business Cycle. Booms And Recessions Are Caused By External Shocks. The Theory In This Paper, Published In Physica A, Builds On The Behavior Of Individual Firms And Generates Cycles, Which Look Like The Real Thing. Nevertheless, The Cycle Is Generated By Individual Behavior Within The System. The Individual Agents Behave In A Very Keynesian Way.
Has The Uk Converged Sufficiently To Justify Joining The Euro? This Paper, Published In Physica A, Uses Some Powerful Maths To Look At The Evidence.
Is An Efficient Flow Of Information Always A Good Thing? Negative Sentiments Might Cascade Across Firms To Produce Recessions. This Paper Examines The Severity Of Recessions In The Us Economy In The 20th Century. I Show That It Is Precisely The Fact That Firms Find It Easy To Obtain Information About The Views Of Others, Which Leads To The Particular Distribution We Observe.

Economic Growth

Mainstream Models Of Economic Growth Predict That Living Standards Will Converge Across All Countries in the End. This Clearly Has Not Happened. The Modern Refinement Is To Postulate That They Will Converge Amongst Economies With Similar Cultural And Historical Backgrounds. However, How Long Is The Long Run? The Countries Of Western Europe Are The Most Culturally Homogenous In The World, Sharing The Greco-Roman Heritage Of 2,000 Years Ago. However, Even Amongst This Group, The Long Run Appears To Be Around 150 Years.

Crime

Why Do Crime Rates Vary So Much Across Time And Place? Here Is A Long Paper, Due To Be Published By The British Home Office, Which Looks At Crime As An Epidemic. The Maths Used In Epidemiology Is Very Useful In Understanding Patterns of Crime
Two Major Data Bases Record the Criminal Activities of Particular Individuals over Long periods. The Cambridge Study Is Based In The Uk, And The Pittsburgh Study In The Us. The First Records The Number Of Criminal Convictions, The Second The Number Of Self-Reported Offences. This Paper Shows That Both Follow An Identical Mathematical Relationship. The Key Link In The Potential Criminal Career Of An Individual Is The Commission Of The First Offence. Once This Is Done, Individuals Can And Do **Commit Crime On All Scales.**

In This Paper, We Develop A Simplified Model For How The Internal Structure Of A Network Evolves Over Time. We Set Up Gangs With An Initial Internal Network Of Connections, And Explore Theoretical Network Structures Cited In Recent Crime And Terrorism Literature. In Terms Of The Efficiency Of The Gang, We Find That The Most Successful Criminal Gangs Are Those Which Have Higher Levels Of Communication And Two Way Communication Between Criminals In The Gang Rather Than A Strict Hierarchy. Success Tends To Be Greater When New Criminals Are Introduced At The Bottom Of The Network Hierarchy

Power Laws

These Are Being Discovered Everywhere – The Extinction Patterns Of Biological Species, The Structure Of The Internet, The Social Patterns Of Sexual Contact.
Here Is An Article From The Financial Times In February 2001 Which Explains What Power Laws Are And Why They Are Important

The Next Two Articles Are Published In Physica A.

The Relationship That Describes The Connection Between The Frequency And Size Of The Extinctions Of Firms Looks Very Similar To That Which Describes The Connection For Biological Species (Though Obviously The Time Scales Differ!).
The Duration of Recessions in the Western Market Economies Follows a Subtle Form of Power Law Behavior
How Firms Evolve and Why They (Eventually) Fail
This Article, Based On A Paper Given At The World Econophysics Conference In Bali August 2002 And Forthcoming In Physica A, Explains The Extinction Patterns Of Capitalism's Largest Firms During The 20th Century
Here Is A PowerPoint Presentation, Given At An Ucla Conference On Complexity At Lake Arrowhead May 2000, Which Summarizes Much Of My Work In This Area.
This Paper, Presented At a Conference in Santa Fe in October 2002, Shows Why External Shocks to the Economy Are Not the Real Reason Why Firms Fail

Competition and Market Structure

Most Economic Regulators Assume That If A Firm Has A Large Market Share, There Is Prima Facie Evidence That The Market Is Not Competitive. This Article Shows Why This Is Not the Case
This Next Paper, Presented At A Conference In Florida In 2002, Formalizes The Schumpeterian Concept Of Creative Destruction. It Shows Why We Need To Make A Distinction Between Competition Between Firms Within An Industry, And Competition Between Industries - The Competitive Environment In Which The Industry Operates. This Distinction Is Often Not Properly Distinguished Either In The Literature Or In Regulatory Practice.

Economic Methodology

Economic Theory Needs To Be Much More Empirically Based, Rather Than Relying On A Priori Reasoning About Agent Behavior.
The Number Of Students Studying Economics Has Fallen Dramatically, Both The In The Uk And The Us. Economists Are Supposed To Know About Markets, But Do Not Seem To Be Able To Provide A Product In The Market For Their Subject Which Consumers (Students) Find Satisfying. Here Is An Article In The New Journal International Review Of Economics Education, Which Sets Out Some Ideas About How The Subject Can Be Made More Attractive.
This Paper Was Given At A Conference In Budapest In 2001, And Will Be Appearing In The Conference Book Of Papers.
Here Is A Paper Given At A Conference Of The Brisbane Group Last Year, And Will Appear In The Conference Volume Of Papers
Karl Popper Has Been Enormously Influential In The Social Science Methodology Literature. This Paper Was Written For A Conference On Popper Held In Vienna, And Has Been Published In ...

Econometric Methodology

Econometrics Is A Particular Application Of Statistical Theory To Economic (And Social) Data. There Are Basically Two Different Types. Cross-Sectional Refers To The Analysis Of A Data Base At A Point In Time, Perhaps Of Different Individuals, Firms, Areas Or Whatever.
Time-Series Refers To The Analysis Of Data Over Time. It Is Much Favored By Macro-Economic Modelers And Forecasters. Here Are Two Papers Which Show Why The Research Programme In Macro-Economic Modelling Using Time-Series Econometrics Has Not Got Very Far. One Appeared In..., and the Other in.... [.PDF, .PDF]

Property and Financial Market Papers

Recent Work By Econophysicists Has Overturned A Lot Of Standard Portfolio Theory. Here Is An Illustration Of The Key Techniques, Using Exchange Rates As An Example, Given At A Conference In Santa Fe In 2000.
Agglomerations and Local Economic Activity

THOMAS LUX

Prof. Dr. Thomas Lux

Chair Institut für Volkswirtschaftslehre

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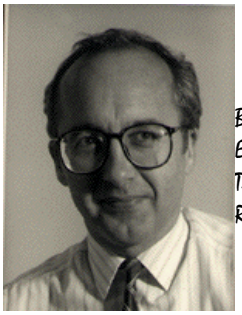
Prof. Dr. Thomas Lux is Professor of Monetary Economics and International Finance at the Institute of Economics, Christian-Albrechts-University of Kiel and Director of Doctoral Program in "Quantitative Economics" (since 2002) at the Faculty of Business, Economics, and Social Sciences, University of Kiel.
The research of Professor Lux and his group concentrates on theoretical and empirical aspect of financial markets and monetary economics. The major focus of their research has been on behavioral, agent-based models of financial markets. Thomas Lux has published one of the first papers on applications of statistical mechanics to economics in 1995 in the Economic Journal and has elaborated on this subject in his subsequent research. Together with Michele Marchesi he is co-author of a widely quoted paper on microscopic market simulations published in Nature 397, 1999. It was shown in this paper, that the universal statistical characteristics of financial returns (fat tails and clustering volatility) can be generated as emergent phenomena from the interaction of heterogeneous agents in a prototype artificial market. He has also published widely on various topics in empirical finance. His ongoing research includes theoretical analyses of financial market models with heterogeneous agents, learning of economic agents via artificial intelligence methods as well as research in empirical finance (on multi-fractal cascades as a new model of volatility). These research interests have stimulated a number of interdisciplinary collaborations with computer scientists and physicists in the emerging fields of computational economics and agent-based modeling. The current research interests of Prof. Lux and his research group focus on various theoretical and empirical aspects of financial markets and monetary economics. Their methological approach is a very broad one attempting to combine standard tools of economics and econometrics with new approaches for multi-agent modeling adopted from physics and computer science. Thomas Lux published one of the first papers on applications of statistical mechanics in a finance setting in 1995 in the Economic Journal and has elaborated on this subject in his subsequent research. Together with Michele Marchesi, he is co-author of a widely quoted paper on microscopic stock market simulations published in Nature 397, 1999. In this paper, it could be shown that some of the universal properties of financial data (fat tails of returns and clustering of volatility) can be generated as emergent phenomena from the interaction of heterogeneous agents in a prototype artificial market.

Some Selected Publications:

'Genetic Algorithms as an Explanation of the Stylized Facts of Foreign Exchange Markets' (with S. Schornstein), Journal of Mathematical Economics (in press) 'On Rational Speculative Bubbles and Fat Tails' (with D. Sornette), in: Journal of Money, Credit, and Banking 34 (2002), pp. 589 - 610 'Scaling and Criticality in a Stochastic Multi-Agent Model of a Financial Market' (with M. Marchesi), in: Nature 397 (1999), pp. 498 – 500 'Herd Behaviour, Bubbles and Crashes', in: Economic Journal 105 (1995), pp. 881 - 896

PETER RICHMOND



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Room 16, Physics Department, Trinity College, Dublin 2, Ireland.

Peter Richmond trained as a theoretical physicist and has wide experience of research, technology, innovation and management within both academic and commercial environments. He is a Principal with EPM Associates Ltd, a research management and technology consulting company. He has been Visiting Professor in Trinity College Dublin, Ireland since 1998

Brief History

- 1964 BSc Physics (Class1) Physics, Queen Mary College, London
- 1967 PhD Theoretical Physics, Queen Mary College, London
- 1977 DSc Theoretical colloid and surface science, London
- 1977 FinstP and CPhys, Institute of Physics, UK
- After a period of teaching and research in solid state physics in the Universities of Kent, UK and New South Wales, Australia, he was offered a

Queen Elizabeth II Research Fellowship to work in the Department of Applied Mathematics, Institute of Advanced Studies, and Australian National University. Here he developed a keen interest in colloid and surface science. In 1973, he joined Unilever where he applied his expertise to the world-wide detergents business. He also assisted with strategic activities relevant to the wider business activity.

- During the 1980, he built a new department concerned with the strategic science underpinning food processing at the Institute of Food Research at Norwich. After 4 years, the department totaled 50 technical staff and was highly respected throughout the food industry and academia. Appointed Head of the Laboratory in 1986 he had responsibility for leadership of the Institute and its 300 staff working in the three key areas of diet and health, food biophysics and processing and biotechnology.
- In 1991, he was appointed Group General Manager, Technical Services for CWS Ltd, the largest Consumer Co-operative in Europe and owner of both the Co-operative Bank and the Co-operative Insurance Society (CIS), responsible for innovation as the business evolved from a manufacturer and wholesaler into a major UK retailer. He was a member of the CWS Consumer Issues Group, a key policy making group that evolved the highly successful co-operative ethical policy and launched the first food product in the UK made via the use of a genetically modified organism and clearly labeled as such. For 4 years, he chaired the Co-operative Retail Trade Technical Committee, which linked the organization to both UK and EU governments on regulatory matters.
- He has served on a number of official and professional bodies. These include the UK Government's Committee on Novel Foods and Processes, the Food and Drink Federation and the British Retail Consortium. He has been Honorary Professor at the University of East Anglia, Norwich since 1988. From 1985-88 he was Industrial Professor of Chemical Engineering at the University of Loughborough. He has published over 120 papers in the technical literature.
- Since establishing EPM in 1996, he has consulted widely for universities in the UK and Ireland, the European Commission and major corporations concerned with food and other FMCG goods. He has acted periodically for the UK Quality Assurance Agency in the assessment of Teaching Quality in UK universities. He is an Executive Editor of the Journal for the Science of Food and Agriculture. Recently he has turned his attention to the new area of econophysics.
- With his two children now developing their own careers, when not traveling, he can be found in either Dublin or Norwich listening to music and dining with friends.

Selected Publications

- Stability of Pareto-Zipf Law in Non-stationary Economies, (with Sorin Solomon) In 'Economics with Heterogeneous Interacting Agents', Editors:Alan Kirman, Jean-Benoit Zimmermann, Springer-Verlag lecture notes in Economics and Mathematical Systems 503, Berlin 2001 141-159
- Power Laws are disguised Boltzmann Laws, (with Sorin Solomon) Int J Modern Phys, 12 No3 (2001) 1-11
- The super highway and all that, Co-op Horizons, 3 (1995) 6
- Food technology and nutrition: challenges for colloid and interface science, Pure and Applied Chemistry, 64 (1992) 1751
- Food Colloids (Edited with R D Bee and J Mingins), Royal Society of Chemistry, 1989
- Extraction of food colors using supercritical carbon dioxide (with A Jay and T W Smith) In "Supercritical Fluids" vol 2, M Perrut editor, 1988, page 821
- The physical properties of extruded food foams (with A L Hayter and A C Smith) J Mat Sci 21 (1986) 3729
- The Dynamics of Colloidal Dispersions (with RC Ball) Phys Chem Liquids 9 (1980) 99
- Ferromagnetism in narrow non degenerate energy bands - a variational principle (with G Rickayzen) J Phys C Solid State Physics 2 (1970) 528
- Food Safety, Diet & Health. A survey of Research Across Europe, European Commission DGXII, EUR 18493, 1999
- Starch: structure and functionality. Royal Society of Chemistry, 1997 (with AM Donald, PJ Frazier, Editors)
- Statistical mechanics of inhomogeneous films of nonelectrolytes, In 'Thin Liquid Films', Marcel Dekker 1988, 131 with G Rickayzen
- Electrostatic interactions in thin films, In 'Thin Liquid Films', Marcel Dekker 1988, 275 with MJ Grimson, Chr St Vassilieff
- Solvent structure contributions to the small angle scattering of colloidal dispersions, J Physique, 46 (1985) 447 with MJ Grimson
- Solvation forces in fluids, In 'Microscopic aspects of adhesion & lubrication, Elsevier, 1982, 41
- Dynamics of Colloidal Dispersions, Physics and Chemistry of Liquids, 9 (1980) 99 with RC Ball
- Electrostatic disjoining pressure in symmetrical films with adsorptive charge regulation
- Annuaire de l'Univeriste de Sofia 73 (1979) 69 with Chr St Vassilief, BG Tenchov, LS Grigorov
- Electrical forces between two permeable planar charged surfaces in an electrolyte solution, J Chem Soc, Far Trans I 74 (1978) 2617 with AJ Dunning, J Mingins and BA Pethica
- Hamaker constants and combining rules, J Chem Soc, Far Trans II 74 (1978) with NF Owens
- A primer to entropy methods used in statistical mechanics and probability theory, Math Sci 3 (1978) 63
- Some fundamental concepts in flotation, Chemistry and Industry, October 1977, 792
- Contact Angles of pure liquids and surfactants on low energy surfaces, In 'Colloids and Surfaces' Chapter 5, 1977, 127 with NFOwens, D Gregory, J Mingins and D Chan
- Van der Waals forces for mica and quartz; calculations using complete dielectric data Proc Roy Soc A 353 (1977) 163 with D Chan
- Colloidal Dispersions- a study of their order using the Percus- Yevick equation, J Chem Soc: Far Trans 2 72 (1976) 773 with RP Keavey
- The Theory and calculation of van der Waals forces In Colloid Science, DH Everett (Ed) Specialist Periodical Reports, Chemical Society, London 2 1975

MICHAEL JOSEPH RADZICKI

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Appointments
2004–Present Research Associate – Center for Full Employment and Price Stability
University of Missouri – Kansas City
1994–Present Associate Professor of Economics with Tenure
Worcester Polytechnic Institute

Education
1982–1985 Ph.D. University of Notre Dame du Lac
Area -- Economics
Major Field – Public Policy
1980–1982 M.A. University of Notre Dame du Lac – Economics
1976–1979 B.A. St. Norbert College – Economics
Honors
· William O. Douglas Award for Best Paper in the Pacific Northwest Legal Studies in Business Association

Professional Memberships
· American Economic Association; Association for Evolutionary Economics; Association for Institutionalist Thought; System Dynamics Society (Founding Member); Teaching and Research Interests; Agent-Based Modeling; Development Economics; Econometrics
· Economic Methodology; History of Economic Thought; International Economics; Macroeconomics; Money, Credit & Banking; Post Keynesian Economics; Stocks & Options Trading; System Dynamics Computer Simulation Modeling;

Teaching Experience
· Advanced System Dynamics Modeling
· Computers in Business
· Development Economics
· International Economics
· Introduction to Agent-Based Modeling
· Money, Credit & Banking
· Dynamic Modeling of Managerial & Economic Systems
· Financial Engineering
· Macroeconomic Dynamics
· Mathematics in Business
· Statistical Methods in Management

Papers Published in Refereed Journals
· "The Circular and Cumulative Structure of Administered Pricing." With Mark Nichols and Oleg Pavlov. 2006. Journal of Economic Issues. 40(2): 517-526.
· "Stability in a Superpower-Dominated Global Economic System." With Oleg Pavlov and Khalid Saeed. 2005. Journal of Economics Issues 39(2): 491-500.
· "Mr. Hamilton, Mr. Forrester and a Foundation for Evolutionary Economics." 2003. Journal of Economic Issues. 37(1): 133-173.

Work in Progress
· "In Defense of System Dynamics: A Reply to Professor Hayden." With Linwood Tauheed. Will be submitted to the Journal of Economic Issues.
· "System Dynamics and it Contribution to Economics/Economic Modeling." Invited article for the Encyclopedia of of Complexity and Systems Science. Springer-Verlag.
· "Token Land: A Parable for the U.S. Social Security System." Will be submitted to the Journal of Post

Invited Lectures
· "The System Dynamics Approach to Economic Modeling." Invited Lecture. American Institute for Economic Research. Great Barrington, Massachusetts. June 22, 2007.
· "Introduction to Financial Engineering." Invited Lecture. Limited Investors. The Worcester Club. April 22, 2007.
· "A Post Keynesian-Institutionalist-System Dynamics Macroeconomic Core Model." First International Business Dynamics Congress of the Brazilian Chapter of the System Dynamics Society. Brasilia, Brazil. October 20, 2006.

· "Trading & Investing in Stocks & Options." Invited Presentation. New York Stock Exchange. New York, NY. August 4, 2006.
· Presidential Address to the 24th International Conference of the System Dynamics Society. July 25, 2006. Raboud University. Nijmegen, The Netherlands.
· "A Post Keynesian-Institutionalist-System Dynamics Macroeconomic Model." Invited Lecture. The Levy Economics Institute of Bard College. Annandale-on-Hudson, NY. January 25, 2006.

President & Founder, Economic Dynamics Chapter of the System Dynamics Society, 2004

MARCEL AUSLOOS

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http://www.ulg.ac.be/supras/groupe/Staff/ausloos.html

Education
Univ.Liège, Liège, Belgium : Engineer. Physics 1967
Brown University, Providence, R.I. : M.Sc. 1970
Temple University, Philadelphia, PA : Ph.D. 1973

Employment
Brown University
Temple University
Univ. Liège, Belgium
Communauté Française de Belgique
Chargé de mission, D.G.Culture 1988- (on leave 1992-)

Research Experience
Theoretical Condensed Matter Physics (magnetism, superconductivity, optics,...).
Theoretical and Applied Statistical Physics (transport properties, phase transitions, fractals, evolution, growth, econophysics...) in "8 chapters"

- First : Theory of electronic structure of disordered alloys, solubility limits of dilute noble metals or alkali-earth metals in alloys,
- Second : Transport properties of magnetic metals, alloys, compounds, in particular in the vicinity of the critical magnetic ordering temperatures, starting from Ph. D. thesis; electrical resistivity, Seebeck, or thermoelectric power, thermal conductivity,
- Third : Study of the liquid and amorphous states : thermodynamic properties, and those of magnetic fluids; equation of state near the close packed limit, phase diagram and statistical mechanics of amorphous magnetic insulators and of liquid metals,
- Fourth : Infrared active modes in clusters of spheres; size effects, absorption spectrum of powders from the general solution of Maxwell's equations; nanoparticle spectra
- Fifth : Surfaces : cyclotron resonance, optical properties, fractal properties, fracture, stability limits, porous media,
- Sixth : Physical properties of spin models, generalized static and kinetic growth models,
- Seventh : Superconductivity : instabilities, fluctuations, various other properties, from a theoretical, phenomenological, and experimental view point, order parameter symmetry,
- Eight : Self-Organized Criticality against extinctions and mutations in models of evolution, phase diagrams of generalized aggregation and growth models: Ecolophysics, Econophysics, Meteorology.

Teaching Experience
Undergraduate level: Introductory Physics for Premedical and Paramedical Students; Solid State Physics, Classical Electrodynamics
Graduate level: Thermodynamics, Solid State Physics, Statistical Physics, Fractals.

Scientific Grants/Contracts
- Fullbright/Hays Travel Grantee of the U.S. - Belgian Educational Foundation; 1967-1968
- Temple University Graduate Fellow; 1970-72
- Royal Academy of Sciences of Belgium Travel Grants (A. De Potter Foundation), 1976, 1981, 1983
- British Council Travel Grant , 1983, 1995
- FRFC Research Grants

- FNRS Travel Grants
- Laboratoire de Biochimie Générale Fellowship, Université de Liège, 1973-1974
- National Research Council of Canada Fellowship , 1971
- Bell Telephone Laboratories Fellowship 1971
- Belgium-Poland Cultural Exchange Program Fellowship, 1977-78
- I.B.M. Belgium Foundation Fellowship , 1982, 1984
- Belgium-France Cultural Exchange Program Fellowship, 1982
- Referee for several scientific journals.
- Co-organizer of International Conferences and Scientific Meetings; chair of sessions.
- BRITE-EURAM Research Contract 067 C(EDB) (1989-1992)
- SPPS Brussels Impulse Program on High Critical Temperature Superconductivity Contract (1990-1995) SU/02/013
- FNRS-NFWO "High Temperature Superconductors" Contact Group National Chairman 1987 - .
- Leader of NATO Project n° HTECH 930344 on "Thermomagnetic Effects in neutron irradiated High Temperature Superconductors", with M. Pekala (Warsaw).
- IUPAP Comm. 5 "Low Temperature Physics" Member 1993 -
- Included in "WHO'S WHO IN THE WORLD", 12th Ed.
- Minister of Higher Education and Research (Brussels) Program on "Structure-Property Relationships of High Critical Temperature Superconductivity" ARC Contract (94-99/174)
- Member of the Advisory Board of Superconductor Science and Technology

Scientific Papers

More than 350 in various fields of theoretical condensed matter physics and statistical physics,- often related to and including experimental and numerical work.

JÜRGEN MIMKES

Universität Paderborn, Germany
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Web-site: www.uni-paterborn.de

Short CV

- After studies of physics in Goettingen, Germany he worked in semiconductor research at the Universities of Berlin and Clausthal, Germany, in Rolla, Missouri and College Park, Maryland, USA.
- He taught physics and solid state thermodynamics in Paderborn, Germany from 1977 until 2004.
- He was the chairman of the physics department from 1991 to 1993.
- In 1992, he became engaged in application of thermodynamics to German-Turkish integration problems, to Protestant-Catholic aggression in Northern Ireland and to the war in Bosnia.
- He started lectures in "politics and thermodynamics" and "thermodynamic concepts in socio-economic systems".
- In 2001, he was foundation member of the workgroup on "Socio-Economic Systems" in the German Physical Society.
- Since 2005, he is prof. emeritus at University Paderborn, Germany.

Selected publications

- J. Mimkes, M. Lubbers, H. H. Thomas: Thermo physical Proprieties of Cubic Elements, Thermochimica Acta 245 (1994) 1-19;
- J. Mimkes: Binary Alloys as a Model, J. Thermal Anal. 43 (1995) 521-537;
- D. J. As, D. Schikora, A. Greiner, M. Lübbers, J. Mimkes, K. Lischka: p- and n- type cubic GaN epilayers on GaAs, Phys. Rev. B 54 Rapid Communications (1996) R11 118;
- D. J. As, A. Greiner, M. Lübbers, J. Mimkes, M. Hankeln, K. Lischka and D. Schikora: Hall-Effect Measurements on stoichoimetricaly grown GaN epilayers on GaAs Substrates, 23rd Int. Conf. on the Physics of Semiconductors, Berlin, p. 509, World Scientific Publ. Co. Singapore, 1996;
- J.Mimkes, M.Wutting: Diffusion and Phasediagram in Binary Alloys, Thermochimica Acta 281S (1996) 1-9.

STEVE KEEN

Associate Professor *BA (Sydney University), LLB (Sydney University), DipEd (Sydney Teachers' College), MComm (Hons - UNSW), PhD (Economics - UNSW)*

Steve Keen is an Associate Professor in economics and finance at the University of Western Sydney. Associate Professor of Economics & Finance at the University of Western Sydney. Steve is the author of the best-selling book Debunking Economics, which explains the many mathematical and logical criticisms of conventional economics in a manner that is accessible by a non-mathematical audience. His main research interest is in developing mathematical models of Hyman Minsky's Financial Instability Hypothesis. A collection of his work can be found at www.debunkingeconomics.com. He recently wrote the 'Debt Freedom Day Report 2007' for the Centre for Policy Development.

Books :

Debunking Economics: The Naked Emperor of the Social Sciences (2001, Pluto Press Australia) ISBN 1-86403-070-4
Co-editor of: Commerce, Complexity and Evolution: Topics in Economics, Finance, Marketing, and Management: Proceedings of the Twelfth International Symposium in Economic Theory and Econometrics. New York: Cambridge University Press. ISBN 0-521-62030-9.

WOLFGANG ECKER-LALA

CEO

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- 1974 - 1982: Bundesrealgymnasium Wien VII with final examination (excellent success)
- 1982 - 1989: study of Technical Mathematics (branch of study: mathematics for economics, planning and optimization) with final examination (excellent success)
- 1989 – 1994: Software developer at Alcatel Austria AG
- since 1994: IT-Consultant and consultant of statistics, mathematical optimization, numerical mathematics, financial mathematics, software development

CONSULTING

MATH-UP steht für Methodenkenntnisse auf dem neuesten Stand der Wissenschaft. Wir zeichnen uns dabei durch den pragmatischen Einsatz von methodischen Werkzeugen aus.
Wir vereinen Kompetenzen aus folgenden Gebieten, deren Verfahren wir schlagkräftig und problemgerecht zum Einsatz bringen:

- Qualitätskontrollplanung, Stichprobenplanung und Versuchsplanung
- Monte-Carlo-Simulation, Risikosimulation und computerintensive Verfahren
- Business Intelligence (Data Warehouse, OLAP, Data Mining)
- Test- und Schätzverfahren, klassisch oder bayesianisch
- Zeitreihen- und Risikoanalyse, ökonometrische Verfahren
- Multivariate Verfahren
- Stochastische Prozesse und Lebensdaueranalysen
- lineare Modelle, nichtlineare Modelle, Modelle zur Analyse allgemeiner diskreter Strukturen
- Optimierungsverfahren
- numerische Approximationsverfahren
- Prognosemodell für Gewährleistungsvoraussagen
- Verfahren für Berechnung der technischer Zuverlässigkeit von Systemen
- Verfahren aus dem Bereich „Operations Research"

Entsprechend Ihren Wünschen, kann die Implementierung mittels gängiger statistischer Programmpakete erfolgen. Ebenso bieten wir die Möglichkeit zur Entwicklung individueller Softwarelösungen bis hin zu Bereitstellung von Tools in Ergänzung zu standardmäßig vorhandenen Office-Paketen.
Unser Unternehmen ist in der Lage, nahezu alle statistischen Fragestellungen professionell und der individuellen Situation angepaßt zu lösen. Unsere Leistung umfasst dabei den gesamten Prozess von der Fragestellung bis hin zur Lösung und Implementierung. Gerne unterbreiten wir Ihnen in einem persönlichen Gespräch ein Angebot.

COACHING

- Transparenz ist für MATH-UP das Kriterium, an dem sich seriöses Coaching messen lassen muss.
- Wir legen in der Bearbeitung statistischer bzw. mathematischer Fragestellungen großen Wert auf die nachvollziehbare Darstellung des Lösungsprozesses.
- Entsprechend den jeweiligen Anforderungen bieten wir unseren Klienten mathematisches Coaching zu einer Vielzahl von Themen an.

ENGINEERING

- MATH-UP steht für eine lösungs- und leistungsoptimierte Kombination von Rechenperformance und menschlichem Know-How.
- MATH-UP berät Unternehmen beim Aufbau statistischer Strukturen bzw. auf dem Gebiet des „Operations Research".
- Das Angebot reicht dabei von Personalberatung über Personalschulungen bis hin zur Ausstattung von Hochleistungsrechnern oder Rechenclustern mit mathematischen Programmen.
- Der strategische Einsatz von Analyseprogrammen erlaubt uns die zielgerichtete, transparente und flexible Lösung Ihrer Aufgaben.
- Hintergrund sind eine breite Erfahrung in der Anwendung aller gängigen mathematischen Software-Pakete, die detaillierte Kenntnis unterschiedlicher Hochsprachen sowie Expertenwissen in Techniken der parallelen und symmetrischen Programmierung.
- Die Mitarbeiter von MATH-UP zeichnen sich durch langjährige Erfahrung in der Administration von großen Netzwerken und Großrechnern mit diversen Betriebsystemen aus. Dieses Fundament ermöglicht den effektiven und effizienten Einsatz der technischen Mittel in Bezug auf die Problemstellung.

STEFAN THURNER

Complex Systems Research Group, HNO (Head) Santa Fe Institute
Medizinische Universität Wien 1 1399 Hyde Park Road Währinger Gürtel 18-20,
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Phone: +43 1 40400-2099 (-3332 fax)
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Website: www.meduniwien.ac.at/complex-systems

Date of Birth: February 1969
Place of Birth: Innsbruck, Austria
Nationality: Austrian
Languages: German, English, Spanish, (French), (Italian)

Professional skills

- Habilitation (Theoretical Physics), Vienna University of Technology, 2001
- Dr.rer.soc.oec. (PhD in Financial Economics), University of Vienna, 2001 (honors)
- CCEFM program in finance 1998-2000
- Dr.techn. (PhD in Theoretical Physics), Vienna University of Technology, 1995 (honors)
- Magister rer.nat. (MS in Theoretical Physics), University of Vienna, 1993 (honors)

Career History

- External Professor at Santa Fe Institute (from July 2007)
- Fellow at the Collegium Budapest (from March 2007)
- Associate Professor at Medical University Vienna (2004-present)
- Associate Professor (a.o. Universit¨atsprofessor, tenure) at University of Vienna (2001-2004)
- Tenure track position (Universit¨atsassistent) at University of Vienna (1999-2001)
- Postdoctoral Position at Vienna University of Technology, Vienna (1998-1999)
- Member of NuHAG, Institute of Mathematics, University of Vienna (1997-present)
- Research Associate at Boston University, Boston (1996-1997)
- Postdoctoral Position at Humboldt University, Berlin (1996)
- Guest researcher at Columbia University, New York (1996), Universidad de Zaragoza, Zaragoza, Spain (1995), Columbia University, New York

Scientific Interests

Complex Systems: (1) Bioinformatics (2) Network theory (3) Evolutionary processes (4) Entropy formulations (5) Fractal time series analysis

- Life Sciences: (1) Reconstruction of gene regulatory networks (2) Control and analysis of biological rhythms (3) Cell motility

- Numerical Mathematics: (1) Wavelet analysis (2) Di_usion processes (3) Fractal harmonic analysis
- Econophysics: (1) Stochastic calculus (2) Arbitrage pricing (3) Banking regulation
- Particle Physics: Topology of Quantum Gauge Fields

Publications/Patents

- About 100 publications in journals like Physical Review Letters, Physical Review D and E, Nuclear Physics B, J Quantitative Finance, Neuroimage, J Pathology, Europhysics Letters, Histochemical Cell Biology, Physica A, Applied Bioinformatics or Physical Letters. Publications cover quantum chromodynamics, statistical mechanics of complex systems, medical- and biophysics, network theory, stochastic processes, fractal time series, financial models
- Holding one patent, one patent pending

Conferences

- About 20 invited talks and lectures at international conferences and summer schools. About 100talks at conferences, workshops and seminars

Prizes

- WWTF Life Science Award 2003 (2003)
- Research Stipend of the Austrian Ministry of Science, BMWFK (1995)
- Vienna University Prize (1994), awarded by the "Gewerbliche Wirtschaft, Wien" shared with M.Feurstein and H.G. Feichtinger

PROGRAM

DAY 1. Saturday, 18th of July 2008

- 13:00-17:00 **Registration for the summer school**
- 16:30-17:00 Coffee break
- 17:00-17:40 Official welcome : **What is really progressive in education and society**
- 17:40-18:10 **Communication in a world of diversity; its importance for research and education**
  Speaker:
- 18:10-19:00 **Introduction to Calculus bases Economic theory (I)**
  Key invited Speaker:
- 19:10-22:30 **Brainstorming Meeting:** plenary session with welcome cocktail
  Moderators:
  Chair:
- 21:00-22:30 Welcome cocktail

DAY 2. Sunday, 19th of July 2008

- 07:00-08:30 Breakfast
- 08:45-10:45 **Lecture 1 on Econophysics and Complexity**: Introduction to information based networks
  Key invited speaker:
- 10:45-11:00 Coffee break (I)
- 11:00-12:45 **Tutorial 1**: plenarry discussions and applications: Filtering information in Complex Systems
  Moderator:
- 12:45-14:00 Lunch
- 14:00-16:30 **Workshop 1:** The complex approach of dreams in economics and the Economics of dreams
  Speaker:
- 17.00-17:30 Coffee break (II)
- 17:00-19:00 **Femina Café** and Alternative Sciences Association
  Discussants:
  Chair:
- 20:00-22:00 Diner with conclusion of the day

DAY 3. Monday, 20th of July 2008

- 07:00-08:30 Breakfast
- 08:45-10:45 **Lecture 2 on Econophysics and Complexity**:
  Key invited speaker:
- 10:45-11:00 Coffee break (I)
- 11:00-12:45 **Tutorial 2**: plenary discussions and applications
  Moderators:
- 12:45-14:00 Lunch

- 14:00-16:30 **Workshop 2:** New opportunities and tools for business and corporate: SAP Sollutions
  Speaker:
- 16:30-17:00 Coffee break (II)
- 17:00-19:00 **Business Café** and Tutorial on BI and SAP in practice : Risk Management, Strategic Enterprise Management ; Business Planning Simulation ; Off-line SAP scenarios
  Moderator :
- 19:00-21:00 Official Diner

DAY 4. Tuesday, 21st of July 2008

- 07:00-08:30 Breakfast
- 08:45-14.00 One day trip and **Itinerant Brainstorming Meeting** „What is really progressive in education and society: the role of culture and communication in education and developping a durable society"
  Moderators:

- 12:00-13:00 Lunch in the city
- 17:30-20:00 **First round table:** Alternative Sciences bridging education and society; the role of New economics (The dream of economics as creative economics versus Economics of dreams) (I) plenary session
  Moderators:
- 19:00-21:00 Diner with conclusions of the day

DAY 5. Wednesday, 22nd of July 2008

- 07:00-08:30 Breakfast
- 08:45-10:45 **Lecture 3 on Econophysics and Complexity**: The emergence of economic cooperation: How the choice of your partners solves the prisoners dilemma on dynamic networks. Theory and applications
  Key invited speaker:
- 10:45-11:00 Coffee break (I)
- 11:00-12:45 **Tutorial 3:** plenarry discussions and applications
  Moderator:
- 12:45-14:00 Lunch
- 14:00-16:30 **Workshop 3:** Creative economics: a complex approach of labor and education inside a sound organisation
  Speaker:
- 17.00-17:30 Coffee break (II)
- 17:00-19:00 **Scientists' Café** - round table
  Chair:
- 19:00-21:00 Diner with conclusions f the day

DAY 6.Thursday, 23rd of July 2008

- 07:00-08:30 Breakfast
- 08:45-10:45 **Lecture 4 on Econophysics and Complexity**: Evolution of Complexity and Mathematical Models Inspired by empirical regularities of Socio-Economic and Behavioral Sciences.
  Key invited speaker:
- 10:45-11:00 Coffee break (I)
- 11:00-12:30 **Tutorial 4 ;** plenarry discussions and applications
  Moderator:
- 12:30-13.30 Lunch
  13:30-18:00 **Trip to Dumbrava Sibiului to visit The Village Museum and popular techniques**
- 18:00-18:30 Coffee break (II)
- 18:30-20:00 **Academic Café**
  Chair:
  Discussants:
- 20:00-21:30 Diner with conclusons of the day.

DAY 7. Friday, 24th of July 2008

- 07:00-08:30 Breakfast
- 08:45-10:45 **Lecture 5 on Econophysics and Complexity**: Multi-scaling analysis in Finance;

The Generalized Hurst exponent approach and its application to financial data
Key invited speaker:

- 10:45-11:00 Coffee break (I)
- 11:00-12:30 **Tutorial 5** plenary discussion on students topics
  Chairs:
- 12:30-13.30 Lunch
- 14:00-16:30 **Workshop 4:** An introduction into datawarehousing and business intelligence
  Speaker:
- 17.00-17:30 Coffee break (II)
- 17:00-19:00 **Students' Café** - round table on BI as a controlling mechanism in enterprises;
  Managing the risk (application managed by Carmen Costea)
  Discussants:
  Chair:
- 19:00-21:00 Diner with conclusions of the day

DAY 8. Saturday, 25th of July 2008

- 07:00-08:45 Breakfast
- 08:45-10:45 **Introduction to Calculus bases Economic theory (II)**
  Key invited Speaker:
  Applications on all lectures per teams coordinated by all lectures (revision of lectures)
  Chair:
- 10:45-11:00 Coffee break (I)
- 11:00-12:30 **Applications on all lectures** per teams coordinated by all lectures (revision of lectures)
  Chair:
- 12:30-14:00 Lunch
- 14:00-16:30 **The second round table:** Quo vadis education and society? plenary session
  Chair:
  Moderators
- 16:30-17:00 Coffee break
- 17:00-19:30 Students examination
- 19:30-21:00 Diner with conclusions of the day

DAY 9. Sunday, 26th of July 2008

- 07:00-08:30 Breakfast
- 09:00-11:00 Official Closing of the Summer school Econophysics and Complexity Formal Evaluation with
  Granting the certificates participation mentioning 8 transferable credit units.
- 11:00-12:00 Lunch
- Farewell and see you back to Romanian in 2009

Evaluation Form

1. Date and location of summer school and workshop _____

2. Course(s) taught_____

3. Grade(s) taught_____

4. Please rank this in-service program overall with other programs you have attended 1= worst, 3= about average, 5= best).

   1 2 3 4 5

5. The highlight of this workshop for you was:

6. If any part of this workshop was of little or no value to you, please indicate which part(s).

7. Please rank the quality of the Teaching by Learning and Coaching curriculum materials you received at the workshop (1= worst, 3= about average, 5= best).

1 2 3 4 5

8. Please tell us how you think this Teaching by Learning and Coaching system might be improved in the future. How?

9. Would you be interested in other programs offered by Alternative Sciences Association?

10. How likely are you to use the Teaching by Learning and Coaching materials in your team?

_____ Very likely
_____ Somewhat likely
_____ Not likely
_____ Not sure

11. What recommendations do you have about the design of Teaching by Learning and Coaching?

12. Has this summer school and workshops made you more interested in:
O self-development; **O** doing research; **O contributing** at the good of the society; **O** economics;
O financial markets; **O** personal finance; **O** improving your attitude in the society.

13. Other comments: