



Lindau Meeting on Economic Sciences

# Programme

19 – 23 August 2014 Lindau & Mainau Island, Germany

# THE MEETINGS ONLINE

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Lindau Blog blog.lindau-nobel.org

Lindau Mediatheque

mediatheque.lindau-nobel.org

Nobel Labs 360° nobellabs.lindau-nobel.org

Lindau Alumni Community

alumni.lindau-nobel.org

Facebook www.facebook.com/LindauNobelLaureatesMeeting

Twitter twitter.com/lindaunobel (#lindauecon14)

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WELCOME



With 19 Laureates and approximately 460 young scientists from more than 86 countries, the 5<sup>th</sup> Lindau Meeting on Economic Sciences is a landmark on the agenda of the international scientific dialogue. The most esteemed economists of our times and promising young talents will share their enthusiasm for economic sciences, discuss the latest research findings, and help expand a community across generations, cultures and disciplines. It is a great pleasure for the Council for the Lindau Nobel Laureate Meetings and the Foundation Lindau Nobel Laureate Meetings to welcome our appreciated guests.

Since 1951, Nobel Laureates in physiology or medicine, physics, and chemistry have gathered annually in Lindau to mentor and inspire the next generation of excellent scientists. From their beginnings six decades ago, the Lindau Meetings have evolved into an international forum for global debate.

In 2004, meetings on economic sciences have completed the set of Nobel disciplines in Lindau. Prior to that, several Nobel Economists participated in meetings dedicated to the other disciplines: Ragnar Frisch, who shared the first Prize in Economics with Jan Tinbergen in 1969, began the tradition just two years later in 1971, followed by Gunnar Myrdal in 1976. Friedrich August von Hayek, who attended six meetings in total, James E. Meade, and Bertil Ohlin came in 1978; Leonid V. Kantorovich in 1979; Meade returned in 1982, joining Tjalling C. Koopmans and Paul A. Samuelson that year. Gérard Debreu and Herbert A. Simon were guests in 1986, and James M. Buchanan Jr. attended in 1989.

For the 5<sup>th</sup> Lindau Meeting on Economic Sciences, once again, Winners of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel have been invited to lecture on a topic of their deliberate choice and showcase the wide range of research fields. One particular highlight will be the lecture by Nobel Writer Mario Vargas Llosa.

The Lindau Nobel Laureate Meetings have always encouraged promising and passionate young scientists from around the globe not only to strive for excellence in their fields of research but also to look beyond their actual research.

This year's meeting will again stimulate the valuable exchange of knowledge and ideas. Our leitmotif "Educate. Inspire. Connect." embodies a holistic and therefore sustainable understanding of the concept of learning. At the Lindau Nobel Laureate Meetings, education means more than learning from textbooks. It should be part of everyone's education to make inspiring and lasting experiences and share them with others. This approach distinguishes the Lindau Meetings from common scientific conferences.

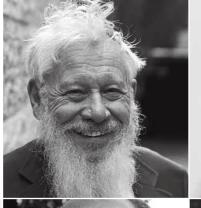
In order to foster the understanding of science in society, our "Mission Education" comprises various initiatives and projects, including the Lindau Mediatheque, educational films, the initiative Teaching Spirit and the travelling exhibition "Sketches of Science". They all have the potential to generate public awareness of the importance and fascination of science and research.

The council and the foundation would like to express their gratitude to the participating Laureates, this meeting's scientific chairs, our academic partners from all continents, the donors and benefactors as well as all supporters for their continuous commitment to our Mission Education.

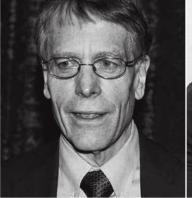
We welcome you to join and share an unforgettable experience.

Council for the Lindau Nobel Laureate Meetings Foundation Lindau Nobel Laureate Meetings







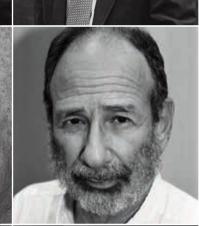












# PARTICIPATING LAUREATES

ROBERT J. AUMANN PETER A. DIAMOND

LARS PETER HANSEN FINN E. KYDLAND

ERIC S. MASKIN DANIEL L. MCFADDEN

ROBERT C. MERTON JAMES A. MIRRLEES

ROGER B. MYERSON JOHN F. NASH JR.

EDMUND S. PHELPS EDWARD C. PRESCOTT

ALVIN E. ROTH REINHARD SELTEN

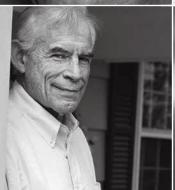
WILLIAM F. SHARPE CHRISTOPHER A. SIMS

VERNON L. SMITH JOSEPH E. STIGLITZ

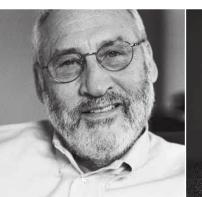
MARIO VARGAS LLOSA









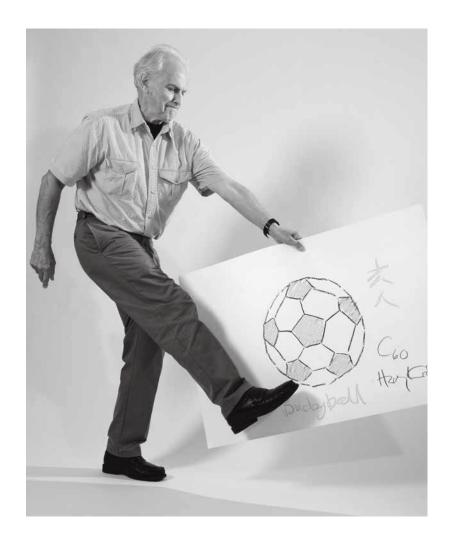




# PROGRAMME OVERVIEW

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	Tuesday, 19 August	Wednesday, 20 August	Thurso	day, 21 August	Friday,	22 August	Saturday, 23 August	
07.00			Science Bred Scien	akfast nce Breakfast hosted by		e Breakfast  posted by		07.00
08.00		Lecture Hansen		Mars, Incorporated	SAP SE	UBS AG	<b>Boat Trip</b> to Mainau Island supported by	08.00
09.00		Lecture Roth Lecture Phelps	Lecture Lecture	Stiglitz Maskin	Lecture Lecture	Merton McFadden	SAP SE	09.00
10.00		Coffee Break	Lecture Lecture	Kydland	Lecture	Mirrlees		10.00
11.00		Lecture Sims  Lecture Smith		Aumann offee Break		ee Break	Closing Panel Discussion	11.00
12.00			Lecture  Lecture	Nash Selten	Lecture  Lecture	Myerson Prescott	How Useful is Economics – How is Economics Useful? Diamond, Merton, Roth	12.00
13.00		Lunch Break	ecctore	Sharpe	Lecture	Diamond		13.00
14.00		Opening Ceremony	Lu	unch Break	Lun	ch Break	Lunch Break	14.00
15.00	Registration 12 - 20 hrs	Break		f Econometrics: Structural Parametric Methods and	Panel Discussion Strategic Be and Mec	havior, Incentives,	Farewell Ceremony	15.00
16.00		Discussions  Hansen   Phelps	Hanse	Big Data en, McFadden, Sims  Break		irrlees, Myerson Break		16.00
17.00		Roth   Sims   Smith	Discussions  Aumann   Kyd  Maskin   Na	dland Hansen		AcFadden   Merton Airrlees	Boat Trip to Lindau supported by	17.00
18.00		Break	Selten Sharpe   Stig	Myerson	Myers	on   Prescott Break	SAP SE	18.00
19.00	Social Function	DIEGK	<i>Lecture</i> Mario	o Vargas Llosa	Meeting Childh	ood Award entations		19.00
20.00	Dinner	Social Function	Social Funct		Social Function	1		20.00
21.00		C. I. T. v. II. v.		Dinner	suppo	an Evening orted by the		21.00
22.00		Get-Together	Fr	ree Evening	Free Sta	te of Bavaria		22.00



# SKETCHES OF SCIENCE

Exhibition

Japan, Tohoku University | 30 July – 31 August 2014 South Korea, National Science Museum, Seoul | 13 October – 30 November 2014 USA, UC Davis | December – February 2015 Germany, Hannover Messe | April – Mai 2015

# TUESDAY, 19 AUGUST

<b>12.00</b> Registration Inselhalle	Meeting Registration from 12.00 – 20.00 hrs continuously
<b>19.00</b> Catering Tent	<b>Dinner</b> Access: young scientists only

# WEDNESDAY, 20 AUGUST

# WEDNESDAY, 20 AUGUST

<b>08.30</b> Plenary Lecture Inselhalle	Lars Peter Hansen Uncertainty and Valuation
<b>09.00</b> Plenary Lecture Inselhalle	Alvin E. Roth Repugnant Markets and Prohibited Transactions
<b>09.30</b> Plenary Lecture Inselhalle	Edmund S. Phelps Bringing Dynamism, Homegrown Innovation and Human Flourishing into Economics
10.00	Coffee Break
10.30 Plenary Lecture Inselhalle	Christopher A. Sims Inflation, Fear of Inflation, and Public Debt
<b>11.00</b> Plenary Lecture Inselhalle	Vernon L. Smith Rethinking Market Experiments in the Shadow of Recessions: The Good and the Sometimes Ugly; Propositions on Recessions
<b>11.30</b> Catering Tent	Lunch Break Access: young scientists and media only
	Note:  Due to security reasons, no participants are admitted to the conference venue Inselhalle between 11.45 hrs and 13.00 hrs.
	Please be aware that upon re-entry for participation in the Open-
	ing Ceremony, all participants are required to identify themselves with a photo ID, even if they have done so earlier already.
	with a photo ID, even if they have done so earlier already.  Kindly note that there are dedicated entrances for young scientists (rear entrance of the Inselhalle), guests (front side entrance) and

13.45	Seats for the Opening Ceremony need to be taken by 13.45 hrs at the latest. Strictly no access after 13.45 hrs.
14.00	Opening Ceremony
Opening Ceremony Inselhalle	Welcome  Countess Bettina Bernadotte  President of the Council
	Welcome Address  Lars Heikensten  Executive Director, Nobel Foundation, Sweden
	Induction of a New Member to the Honorary Senate of the Foundation Lindau Nobel Laureate Meetings  Walter B. Kielholz Chairman, Swiss Re, Switzerland
	Keynote Address  Angela Merkel  Chancellor of the Federal Republic of Germany
	Master of Ceremony: Till Nassif
	Access: all registered participants
15.00	Break

# WEDNESDAY, 20 AUGUST

# THURSDAY, 21 AUGUST

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<b>16.00</b> Discussion Altes Rathaus	Lars Peter Hansen Discussion with young scientists
<b>16.00</b> Discussion Forum am See	Edmund S. Phelps Discussion with young scientists
<b>16.00</b> Discussion Hotel Bay. Hof	Alvin E. Roth Discussion with young scientists
<b>16.00</b> Discussion Landratsamt	Christopher A. Sims Discussion with young scientists
<b>16.00</b> Discussion Hotel Bayr. Hof	Vernon L. Smith Discussion with young scientists
17.30	Break
20.00 Social Function Inselhalle	<b>Get-Together</b> Access: all participants

# HAVING A BRILLIANT THOUGHT?

Share it with us on twitter.com (#lindauecon14)



<b>O7.00</b> Science Breakfast Forum am See	Paths to Innovation: Restoring Grassroots Dynamism to Address Global Challenges
	hosted by Mars, Incorporated
	Ralph Jerome Vice President, Corporate Innovation, Mars, Incorporated
	Edmund S. Phelps Department of Economics, Columbia University
	Young scientist (tbd)
	Moderator: Romesh Vaitilingam VoxEU.org
	Access: with online pre-registration only
<b>09.00</b> Plenary Lecture Inselhalle	Joseph E. Stiglitz Inequality, Wealth, and Growth: Why Capitalism is Failing
<b>09.30</b> Plenary Lecture Inselhalle	Eric S. Maskin Why Haven't Global Markets Reduced Inequality in Developing Economies?
10.00 Plenary Lecture Inselhalle	Finn E. Kydland Economic Policy and the Growth of Nations
10.30 Plenary Lecture Inselhalle	Robert J. Aumann Collectives as Individuals
11.00	Coffee Break
11.30	John F. Nash Jr.
Plenary Lecture Inselhalle	Artificial Intelligence and Cooperative Games
12.00	Reinhard Selten
Plenary Lecture Inselhalle	How Does One Learn by Experience?
<b>12.30</b> Plenary Lecture Inselhalle	William F. Sharpe Economic Analysis of Retirement Income Strategies

# THURSDAY, 21 AUGUST

# THURSDAY, 21 AUGUST

<b>13.00</b> Catering Tent	Lunch Break
catering rent	Access: young scientists and media only
<b>15.00</b> Panel Discussion Inselhalle	Panel Discussion: The Future of Econometrics: Structural Restrictions, Parametric Methods and Big Data
	Lars Peter Hansen Becker Friedman Institute for Research in Economics, The University of Chicago
	Daniel L. McFadden The G.W. Hooper Research Foundation, University of California
	Christopher A. Sims Department of Economics, Princeton University
	Moderator: Peter Englund Department of Finance, Stockholm School of Economics
16.30	Break
17.00 Discussion Evang. Hospital	Robert J. Aumann Discussion with young scientists
<b>17.00</b> Discussion Altes Rathaus	Finn E. Kydland Discussion with young scientists
<b>17.00</b> Discussion Altes Rathaus	Eric S. Maskin Discussion with young scientists
<b>17.00</b> Discussion Hotel Bayr. Hof	John F. Nash Jr. Discussion with young scientists
<b>17.00</b> Discussion Hotel Bayr. Hof	Reinhard Selten Discussion with young scientists
17.00 Discussion Landratsamt	William F. Sharpe Discussion with young scientists

<b>17.00</b> Discussion Forum am See	Joseph E. Stiglitz Discussion with young scientists
<b>17.00</b> Master Class Inselhalle	Master Class with Roger B. Myerson Game Theory and Mathematical Economics young scientists (tbd) Access: with online pre-registration only
<b>17.00</b> Master Class Inselhalle	Master Class with Lars Peter Hansen Macro Finance young scientists (tbd) Access: with online pre-registration only
18.30	Break
<b>19.00</b> Lecture City theatre	Mario Vargas Llosa A Panoramic View on the Situation and Perspectives in Latin America Access: all participants
<b>20.00</b> Dinner Various locations	<b>Dinner</b> Please see your personal agenda for details.

**Partner Event** 

07.00

Science Breakfast Forum am See

Innovation from the Edge –

How could we possibly solve the "Innovator's Dilemma" through the Power of Diversity?

hosted by SAP SE

Robert D. Austin

Management of Creativity and Innovation,

Copenhagen Business School

Joseph E. Stiglitz

School of International and Public Affairs,

Columbia University

Anka Wittenberg

Head of People Sustainability, Chief Diversity & Inclusion Officer,

SAP SE

Young scientist (tbd)

Moderator: Vlasta Dusil HR Director SAP (Switzerland) AG

Access: with online pre-registration only

Partner Event

07.00

Science Breakfast Hotel Bay. Hof Banking and Banking Regulation after the Financial

Crisis

hosted by UBS AG

Mark Haefele

Global Chief Investment Officer, UBS AG

Martin Hellwia

Director, Max Planck Institute for Research on Collective Goods,

Bonn (Germany)

Roger B. Myerson

Department of Economics, University of Chicago

Young scientist (tbd)

Access: with online pre-registration only

<b>09.00</b> Plenary Lecture Inselhalle	Robert C. Merton Measuring the Connectedness of the Financial System: Implications for Systemic Risk Measurement and Management
<b>09.30</b> Plenary Lecture Inselhalle	Daniel L. McFadden The New Science of Pleasure
10.00 Plenary Lecture Inselhalle	James A. Mirrlees Some Interesting Taxes and Subsidies
10.30	Coffee Break
<b>11.30</b> Plenary Lecture Inselhalle	Roger B. Myerson  Moral-Hazard Credit Cycles with Risk-Averse Agents
<b>12.00</b> Plenary Lecture Inselhalle	Edward C. Prescott Innovation in Neoclassical Growth Theory
12.30 Plenary Lecture Inselhalle	Peter A. Diamond Unemployment
<b>13.00</b> Catering Tent	Lunch Break Access: young scientists and media only
<b>15.00</b> Panel Discussion City Theatre	Panel Discussion: Strategic Behavior, Incentives, and Mechanism Design  Eric S. Maskin Department of Economics, Harvard University
	James A. Mirrlees The Chinese University of Hong Kong
	Roger B. Myerson Department of Economics, University of Chicago
	Moderator: Martin Hellwig Director, Max Planck Institute for Research on Collective Goods
16.30	Break

# FRIDAY, 22 AUGUST

# SATURDAY, 23 AUGUST

<b>17.00</b> Discussion Forum am See	Peter A. Diamond Discussion with young scientists
<b>17.00</b> Discussion Hotel Bay. Hof	Daniel L. McFadden Discussion with young scientists
<b>17.00</b> Discussion Altes Rathaus	Robert C. Merton Discussion with young scientists
<b>17.00</b> Discussion Hotel Bay. Hof	James A. Mirrlees Discussion with young scientists
<b>17.00</b> Discussion Evang. Hospital	Roger B. Myerson Discussion with young scientists
17.00 Discussion Altes Rathaus	Edward C. Prescott Discussion with young scientists
18.30	Break
Partner Event 19.00 Meeting Hotel Bay. Hof	Students' Final Childhood Award Presentations hosted by the World Childhood Foundation founded by H. M. Queen Silvia of Sweden Access: upon invitation only
<b>20.00</b> Social Function Inselhalle	Bavarian Evening supported by the Free State of Bavaria
	Bavarian Music & Folk Dance
	Bavarian Buffet Dinner
	Access: all participants

<b>07.15</b> MS Sonnenkönigin	Boat Trip to Mainau Island supported by SAP SE Access: all participants
<b>07.15</b> Lindau Harbour	Check in (Lindau)
<b>07.45</b> Lindau Harbour	Departure (Lindau)
<b>08.00</b> Bad Schachen	Arrival (Hotel Bad Schachen)
<b>08.15</b> Bad Schachen	Departure (Hotel Bad Schachen)
	Welcome
	Countess Bettina Bernadotte President of the Council
	Anka Wittenberg Head of People Sustainability, Chief Diversity & Inclusion Officer, SAP SE
<b>10.20</b> Mainau Island	Arrival (Mainau Island)

# MISSED SOMETHING?

Watch it online at mediatheque.lindau-nobel.org



# SATURDAY, 23 AUGUST

# SATURDAY, 23 AUGUST

#### 11.00

Closing Session Mainau Island Castle Meadow

#### Welcome

Count Björn Bernadotte af Wisborg Countess Bettina Bernadotte af Wisborg

#### Welcome Address

H. M. Queen Silvia of Sweden

### **Award Ceremony**

Global Childhood Challenge "Your Big Ideas will Help Small People"

Panel Discussion: How Useful is Economics - How is Economics Useful?

Peter A. Diamond

Department of Economics,

Massachusetts Institute of Technology

Robert C. Merton

Sloan School of Management,

Massachusetts Institute of Technology

Alvin E. Roth

Department of Economics, Stanford University

Moderator: Torsten Persson

Institute for International Economic Studies, Stockholm University

Access: all participants

<b>13.00</b> Lunch Break Mainau Island	Lunch Break									
<b>15.15</b> Castle Courtyard	Conclusion & Farewell  Countess Bettina Bernadotte  President of the Council									
<b>16.15</b> Mainau Harbour	Boat Trip to Lindau Departure (Mainau Island) supported by SAP SE Access: all participants									
<b>18.15</b> Bad Schachen	Arrival (Hotel Bad Schachen)									
<b>18.30</b> Lindau Harbour	Arrival (Lindau)									
	Note:									
	For all participants departing on Saturday and not returning to their hotel: No travel luggage may be taken on the boat. Two luggage buses will be available; please place your luggage accordingly.									
	Bus 1: to "Mainau Island": for those not returning to Lindau. Pick-up at main entrance on Mainau Island.									
	Bus 2: to "Lindau": for those leaving directly after their return to Lindau. Pick-up at Lindau harbour.									
	Certificates of Attendance will only be available on the boat.									

#### LECTURE ABSTRACTS (in alphabetical order by last name)

#### Robert J. Aumann

#### Collectives as Individuals

Session: Thursday, 21 August, 11.00 hrs

In many applications of Game Theory, a player is a collective such as a household, team, political party, country or the like. Usually, this is understood as an idealization. In games where, say, countries are modeled as players, the "real" players are the individual citizens, with their individual goals and individual decisions and individual free will. It's only because this "true" game is too big and unwieldy to analyze that, it is held, game theorists model players as they do.

Here, we advance the thesis that it \*IS\* really that way: that in large part, collectives are like individual people, and may be thought of as such. And, perhaps, not only in Game Theory.

#### Peter A. Diamond

### Unemployment

Session: Friday, 22 August, 12.30 hrs

Debates about higher structural unemployment occur when unemployment has stayed high. With monthly publication of the US Beveridge curve (the relationship between the unemployment and vacancy rates), the recent debate has focused on the shift in the Beveridge curve and whether the shift will be lasting long enough to move the full-employment point. The curve appears stable through the NBER identified business cycle through in June 2009 or possibly the month of the maximal unemployment rate in October 2009. This shift in the Beveridge curve, with the economy experiencing a higher level of unemployment than before for the same level of the vacancy rate, suggests a deterioration in the matching/hiring process in the economy. It is tempting to interpret this decline as a structural change in the way that the labor market works and thus assume that it is orthogonal to changes in aggregate demand. Indeed, an assumption that a shift in

the curve is structural has been a staple of the academic literature since at least 1958. This interpretation has an obvious policy implication: however useful aggregate stabilization policies while unemployment is very high, they are likely to fail in lowering the unemployment rate all the way to the levels that prevailed before the recession, since the labor market is structurally less efficient than before in creating successful matches. This lecture reviews the theory underlying the Beveridge curve and US evidence on the ability to draw an inference of structural change from its shift or a shift in the hiring (matching) function.

#### Lars Peter Hansen

# **Uncertainty and Valuation**

Session: Wednesday, 20 August, 08.30 hrs

I will explore how alternative sources of uncertainty have an impact on asset valuation. I will show how decision theory, control theory and statistical theory provide valuable tools to model investor behavior and to reveal how uncertainty is reflected in security market prices. In intertemporal environments, risk-return tradeoffs depend on the payoff or investment horizon. To study these tradeoffs, I will construct pricing counterparts to impulse response functions. Recall that impulse response functions measure the importance of next-period shocks for future values of a time series. The asset-pricing counterparts are shock elasticities which measure the expected contribution to a cash flow from a shock in the next period shock and the price of that shock.

### Finn E. Kydland

# Economic Policy and the Growth of Nations

Session: Thursday, 21 August, 10.00 hrs

The business environment in large parts of the world today is characterized by an extent of uncertainty that is unprecedented over the past several decades. The main reason is lack of clarity in economic policy making. In order to be properly informed and well founded, important business decisions, such as innovative activity, investment in new productive capacity,

the choice of new markets, and so on, require an assessment — an expectation — of the policy environment years into the future. Among the important policy dimensions are tax policy, especially as it affects businesses, spending and debt policy, extent of trade restrictions, and the regulatory environment in general. Based on economic theory, the increase in policy uncertainty over the past half-dozen years was quite predictable. The talk will expound on the fundamental reasons and on the prospects for more clarity for the next few years. Contexts include China, the Euro Zone (with a special visit to Ireland), the United States, Canada, and parts of Latin America.

#### Eric S. Maskin

# Why Haven't Global Markets Reduced Inequality in Developing Economies?

Session: Thursday, 21 August, 09.30 hrs

The theory of comparative advantage predicts that globalization should cause income inequality in emerging economies to fall. However, this has not happened in the current era of increasing international trade (although the prediction held up well for previous globalizations). In this lecture, I sketch an alternative theory - developed in collaboration with Michael Kremer - that seems to fit recent history well. Our model conceives of globalization as an increase in international production (Computers provide a good example: they may, for instance, be designed in the U.S., programmed in Europe and assembled in China). We show that when the barriers to international production come down, moderately-skilled workers in emerging economies get new employment opportunities and unskilled workers don't. It is this disparity, we argue, that accounts for rising inequality in many developing countries.

#### Daniel L. McFadden

#### The New Science of Pleasure

Session: Friday, 22 August, 09.30 hrs

At the base of economic analysis is the consumer, whose behavior and well-being motivate a whole gamut of questions spanning demand analysis, in-

centive theory and mechanism design, project evaluation, and the introduction and marketing of private and public goods and services. Understanding and modeling consumer welfare was central in early economics, and remains so, with a continuing tension between elements of illusion, temperament, and subjectivity in consumer behavior, and the need for stable, predictive indicators for demand and well-being. The neoclassical model of the individualistic utility-maximizing consumer that forms the basis of most economic analysis is largely a finished subject, but new studies of consumer behavior and interesting new measurements are coming into economics from cognitive psychology, sociology, anthropology, market science, evolutionary biology, and neurology. This behavioral revaluation challenges the neoclassical conclusion that unconcentrated self-organized markets place consumers on a welfare frontier, and suggests new directions for the continuing development of consumer theory. This talk gives a broad, brief survey of behavioral consumer theory, and places its findings in the context of the early writings of economists on the science of pleasure.

#### Reference

D. McFadden, "The New Science of Pleasure", NBER Working Paper No. 18687, February 2013, forthcoming in Handbook of Choice Modelling, S. Hess and A. J. Daly, (eds.), Edward Elgar, 2014.

#### Robert C. Merton

# Measuring the Connectedness of the Financial System: Implications for Systemic Risk Measurement and Management

Session: Friday, 22 August, 09.00 hrs

Macrofinancial systemic risk is an enormous issue for both governments and large asset pools. The increasing globalization of the financial system, while surely a positive for economic development and growth, does increase the potential impact of systemic risk propagation across geopolitical borders, making its control and repairing the damage caused a more complex and longer process. As we have seen, the impact of the realization of systemic risk can be devastating for entire economies. The Financial Crisis of 2008-2009 and the subsequent European Debt Crisis were centered around credit

risk, particularly credit risk of financial institutions and sovereigns, and the interplay of the two. The propagation of credit risk among financial institutions and sovereigns is related to the degree of "connectedness" among them. The effective measurement of potential systemic risk exposures from credit risk may allow the realization of that risk to be avoided through policy actions. Even if it is not feasible to avoid the systemic effects, the impact of those effects on the economy may be reduced by dissemination of that information and subsequent actions to protect against those effects and to subsequently repair the damage more rapidly. This paper applies the structural credit models of finance to develop a model of systemic risk propagation among financial institutions and sovereigns. Tools for applying the model for measuring connectedness and its dynamic changes are presented using network theory and econometric techniques. Unlike other methods that require accounting or institutional positions data as inputs for determining connectedness, the approach taken here develops a reduced-form model applying only capital market data to implement it. Thus, this model can be refreshed almost continuously with "forward-looking" data at low cost and therefore, may be more effective in identifying dynamic changes in connectedness more rapidly than the traditional models. This new research is still in progress. The basic approach and the empirical findings are encouraging and it would seem that at a minimum, this approach will provide "good "questions, if not always their answers, so that overseers and policy makers know better where to look and devote resources to discovery among the myriad of places within the global financial system. In particular, it holds promise for creating endogenously specified stress test formulations. The talk closes with some discussion of the importance of a more integrated approach to monetary, fiscal and stability policies so as to better recognize the unintended consequences of policy actions in one of these on the others.

### Background reading

Merton, R.C., 1977, "An Analytical Derivation of the Cost of Deposit Insurance and Loan Guarantees," Journal of Banking and Finance, vol. 1 (June); pp. 3-11.

Gray, D. F., Merton R. C. and Z. Bodie, 2007, "Contingent Claims Approach to Measuring and Managing Sovereign Credit Risk", Journal of Investment Management, Vol. 5, No. 4, pp. 5-28.

#### James A. Mirrlees

#### Some Interesting Taxes and Subsidies

Session: Friday, 22 August, 10.00 hrs

There are situations where marginal tax rates of 100% or nearly 100% may be justified. Three models will be sketched, using indifference curves. One, which makes unusual assumptions about preferences for labour, can justify income subsidies of low incomes with implicit marginal tax rate of 100%. The second, assuming high substitutability between consumption and work, might justify marginal tax rates approaching 100% on the highest incomes. The last, with competition between skilled workers (such as sportsmen or inventors) for market share, might justify marginal rates of 100% on high incomes of a particular type. The assumptions under which these conclusions follow may not hold in actual economies, but they might sometimes. In any case, extreme results, and the reasons for them, can help us understand how incentives work and their implications for taxation.

### Roger B. Myerson

### Moral-Hazard Credit Cycles with Risk-Averse Agents

Session: Friday, 22 August, 11.30 hrs

We consider a simple overlapping-generations model with risk-averse financial agents subject to moral hazard. Efficient contracts for such financial intermediaries involve back-loaded late-career rewards. Compared to the analogous model with risk-neutral agents, risk aversion tends to reduce the growth of agents' responsibilities over their careers. This moderation of career growth rates can reduce the amplitude of the widest credit cycles, but it also can cause small deviations from steady state to amplify over time in rational-expectations equilibria. We find equilibria in which fluctuations increase until the economy enters a boom/bust cycle where no financial agents are hired in booms.

#### John F. Nash Jr.

#### **Artificial Intelligence and Cooperative Games**

Session: Thursday, 21 August, 11.30 hrs

Recently I have been researching in the area of "cooperative games" with the stimulation of an idea which effectively enables the theoretical reduction of a cooperative game to a non-cooperative game of a special sort or variety, specifically the sort of game which arises when several players COULD do well, playing among themselves with legitimate "game moves", but where, if they were not given some mechanism that would tend to induce them to take game actions relatively favorable for the joint welfare of all of them together, then they might naturally behave so badly in relation their possible mutual best interests that that would be like the simple non-cooperative equilibrium in a prisoners' dilemma game.

One of the observations that can be made here is that a human player playing in a game and strictly following a completely detailed game strategy becomes equivalent to a robot and behaves as if he were an "artificial intelligence".

So we have the possibility of gaining understanding of "cooperative games" through gaining understanding of how a good class of model "artificial intelligences" might naturally play them.

The class of cooperative games introduced by Von Neumann and Morgenstern in their book still provides a good and stimulating challenge to game theorists.

Perhaps nothing like a set of points, or a class of sets of points, nor sometimes any single point would be the ideal concept that we would like to find and appreciate relating to these games (which have transferable utility (like a conveniently transferable utility) usable as businesses use money). But there is the natural psychology to appreciate something that might seem comparable to the solution of a classical "chess problem".

I have myself been involved with studies which have considered games of three players that are DEFINED by a "characteristic function" (and which correspondingly involve "transferable utility"). Such a basic type of three-person game is completely defined by its "characteristic function" specifying v(0)=0, v(1)=k1, v(2)=k2, v(3)=k3, v(1,2)=j12, v(1,3)=j13, v(2,3)=j23, and v(1,2,3)=m123. (And usually the characteristic function is presumed to be "super-additive".)

My first involvement in these studies led to a program of calculations which developed as sponsored research and led to a publication in "The International Game Theory Review". An experimental games study deriving from that work attempts to study cooperative games and cooperation in games through the device of "the method of agencies" which provides a standard means for the formation of effective coalitions and the enabling of cooperation.

(The second publication has four co-authors and appeared recently in the Proceedings of the National Academy of Sciences (USA).)

### Edmund S. Phelps

# Bringing Dynamism, Homegrown Innovation and Human Flourishing into Economics

Session: Wednesday, 20 August, 09.30 hrs

The economics practiced today is basically neoclassical with an overlay of Keynesian theory from which the unknowable, animal spirits and long-term expectations have been removed. Abstraction is always fruitful. But this standard amalgamated economics, which met many earlier problems, seems not to meet the syndrome of problems faced by the West in our time; nor some old problems faced by historians. That is because the standard economics excludes the heart of these problems – the sources are hidden in some variables interpreted as "shocks" or some time trend. As a result, this economics offers us the policy tools of the standard models with which we can hope to obtain symptomatic relief from our illness, but cannot expect a cure.

In my theory, prevailing values, or felt needs, are basic to an economy. In any nation there are people who feel the need for individual expression – to

exercise their curiosity, ingenuity or creativity; whose vitalism stirs them to "act on the world" and make a difference: and who need careers that are a journey into the unknown - a voyage in which, as they form ideas, create and discover outcomes, they test, discover and create themselves. Such needs fuel a desire to innovate: The extent and intensity of this desire, together with the capacity and talent of people to hit upon new products that would be adopted, and the latitude society is willing to give to innovations, constitute a nation's dynamism – its ability, or propensity, to innovate. This dynamism largely determines the nation's homegrown innovation – the supply of it, to be precise, while various market forces impact on the actual innovation achieved. And the nation's rate of innovation is the main source of the prosperity there - in all its dimensions, including what is called flourishing. By the 1800s, the accretion of modern values gave birth to the dynamism sparking the epoch of innovation in Britain and America, later Germany and France. Now, losses of dynamism have cost us much of our prosperity.

#### Edward C. Prescott

# Innovation in Neoclassical Growth Theory

Session: Friday, 22 August, 12.00 hrs

Neoclassical growth theory is a theory that has been successfully used to quantitatively address many aggregate economic questions. These questions include the quantitative contribution of various factors to business cycle fluctuations and the large difference in hours worked across countries and over time. In the process of using the theory, deviations from the theory emerged, and in process of resolving these puzzling deviations, the theory was advanced. One major advance was figuring out a way to incorporate intangible capital produced and owned by businesses. The investment in this form of capital is known to be big and nearly all is expense and therefore most is not part of GDP. This extension resolved the puzzled of why the U.S. boomed in the 1990s even though GDP per hour and corporate profits were low. The model that resolved that puzzle also is consistent with the

2008-2009 recession and the subsequent depression that has persisted for over 5 years.

One major problem was how to account for intangible investment in this theory, which assumes competitive markets, and the aggregates reported in the national income and product accounts. McGrattan and Prescott (2009) developed a way, with technology capital that can be used at any location if permitted by policy. Locational rents, not monopoly rents are what provide the incentive to innovate. With this extension there is a reason for direct foreign investment (See McGrattan and Prescott 2010). The predicted gains from openness are three times bigger than the standard trade models predictions, but still only a third of what the empirics indicate. Other factors are important with the leading candidates being lowering of incentives to set barriers to more efficient production and increasing the rate at which knowledge useful in production diffuses. Determining the quantitative importance of these two factors are two major open problems in aggregate economic theory.

#### Readings

"Technology Capital and the U.S. Current Account," E. R. McGrattan and E. C. Prescott, American Economic Review, 100 (4), 1493-1522, September 2010.

#### Alvin E. Roth

# Repugnant Markets and Prohibited Transactions

Session: Wednesday, 20 August, 09.00 hrs

I'll speak about "repugnant transactions," which are transactions that some people want to do, and other people don't want them to do. That turns out to be a very broad class of transactions that include some things economists understand well (e.g. opposition to transactions with clear negative externalities to third parties), and other things we understand much less well (e.g. opposition to same sex marriage). I began to pay attention to repugnant transactions in connection with my work on kidney exchange: while no one opposes kidney transplantation, including living kidney donation,

<sup>&</sup>quot;Openness, Technology Capital, and Development," E. R. McGrattan and E. C. Prescott, Journal of Economic Theory 144, 2454–76, November 2009.

almost every country in the world has laws against paying for kidneys. The only exception I know of is the Islamic Republic of Iran, where kidneys can legally be bought and sold, although of course there are illegal black markets in many places. (It turns out that in Germany, even kidney exchange, of the kind my colleagues and I have helped establish in the U.S. and elsewhere, is illegal.)

I'll touch on a wide range of repugnant transactions, which have changed over time (e.g. interest on loans, markets for slaves) and are different in different places. I'll argue that these are important phenomena that we economists would do well to understand better.

#### **Suggested readings**

Roth, Alvin E. "Repugnance as a Constraint on Markets", Journal of Economic Perspectives, 21:3, Summer, 2007, pp. 37-58.

You can browse the many blog posts I've written about repugnant transactions at http://marketdesigner.blogspot.com/search/label/repugnance



### TOO ABSTRACT?

Visit the laureates in their labs: nobellabs.lindau-nobel.org

#### Reinhard Selten

### How Does One Learn by Experience?

Session: Thursday, 21 August, 12.00 hrs

No abstract available.

# William F. Sharpe

### **Economic Analysis of Retirement Income Strategies**

Session: Thursday, 21 August, 12.30 hrs

Percentages of older people are increasing in most countries. Moreover, in the United States and other countries there is a trend towards reliance on individuals' savings to supplement social retirement plans. This places a considerable burden on individual investors to choose appropriate strategies to use savings to efficiently provide income during their retirement years. This presentation will cover tools of economic analysis that can help inform such choices, including Monte Carlo analysis, equilibrium asset pricing theory, conditions for expected utility maximization and approaches for cost minimization. Their use will be illustrated in an analysis of a complex financial product in which an investment company and a life insurer jointly provide an investment fund with a guaranteed lifetime withdrawal benefit.

### Christopher A. Sims

### Inflation, Fear of Inflation, and Public Debt

Session: Wednesday, 20 August, 10.30 hrs

No abstract available.

#### Vernon L. Smith

# Rethinking Market Experiments in the Shadow of Recessions: The Good and the Sometimes Ugly; Propositions on Recessions

Session: Wednesday, 20 August, 11.00 hrs

In all economic recessions consumer non-durable expenditures are relatively stable, characteristics that have long applied to certain experimental markets. The supply and demand experiments of the 1960s and 1970s reliably and rap-

idly converged to the predicted equilibrium. These markets also were for non-durables: all sales were final; items could not be re-traded; subjects each knew their buyer (or seller) role in advance of entering the market.

In eleven of the last fourteen U.S. Recessions, new housing expenditure was a leading indicator of decline. Moreover, economic recovery is always associated with housing. The experimental asset markets of the 1980s and 1990s likewise exhibited unexpected and unpredictable tendencies to bubble and crash. The larger the endowments of cash or the greater the inflow of cash, the bigger is the bubble; housing bubbles are also associated with the inflow of mortgage credit money.

In the macroeconomic accounts, re-tradability, long durability, and credit inflow seem to be the key to instability.

### Joseph E. Stiglitz

### Inequality, Wealth, and Growth: Why Capitalism is Failing

Session: Thursday, 21 August, 09.00 hrs

Thomas Piketty's recent book has noted large increases in wealth and the wealth/income ratio. But there has not been the associated decline in interest rates or increases in wages that one might have expected. Indeed, in some countries, like the US, there has been wage stagnation. If we take "wealth" to be capital, it leads to a seeming paradox, a strong contradiction to the neoclassical model. At the same time, he suggests that high levels of inequality are a natural aspect of capitalism - with the short period of the few decades before 1980 representing an exception.

This lecture will resolve the seeming paradox, describe the centrifugal and centripetal forces that lead to increased and diminished inequality, show how the balance between these forces has been disturbed since 1980 to lead to a higher equilibrium level of inequality, and explain, however, that this level of inequality is not just the result of market forces, but of policies and politics, some of which have impeded the way that a well-functioning competitive market would have behaved. The final piece of the analysis links this growing inequality to our financial system and the credit-creation process.



# THE LINDAU MEETINGS: NOW AND THEN An Exhibition

5 April – 19 October 2014 | City Museum Lindau Free exhibition access with Young Scientist name badge

#### PANEL DISCUSSION ABSTRACTS

Hansen, McFadden, Sims

# The Future of Econometrics: Structural Restrictions, Parametric Methods and Big Data

Session: Thursday, 21 August, 15.00 hrs

There is a fundamental tension in empirical analysis in economics between relying on prior beliefs based on theory and empirical evidence - encoded in classical hypotheses or in Bayesian priors - and letting data speak "freely". To what extent can and should theory be used to impose restrictions on parameterized models? With the availability of ever larger data sets in many areas (financial transactions, medical records, consumer purchase histories etc.), these issues are becoming increasingly important. The panel will discuss new and old methods to meet these challenges.

### Maskin, Mirrlees, Myerson

### Strategic Behavior, Incentives, and Mechanism Design

Session: Friday, 22 August, 15.00 hrs

Economics has always been concerned with incentives. For a long time, however, most formal analyses of incentive issues were limited to the behavior of people or corporations in markets where the institutional environment was given. Since the 1960s, our understanding of incentives and incentive problems has been revolutionized by research contributions that identified asymmetric information and strategic interdependence as root causes of incentive problems and provided fundamental insights about the scope and the limits for dealing with these problems by institution design. The importance of this research was recognized by the award of the Prize in 1996 to Sir James Mirrlees and William Vickrey for their "fundamental contributions to the economic theory of incentives under asymmetric information" and in 2007 to Leonid Hurwicz, Eric Maskin, and Roger Myerson "for having laid the foundations of mechanism design theory". The panel will discuss the underlying ideas and their development.

#### Diamond, Merton, Roth

#### How Useful is Economics - How is Economics Useful?

Session: Saturday, 23 August, 11.00 hrs

Economics is often abstract. Economic models are formulated in general terms, without reference to any particular economy. Theorizing involves assumptions that are patently unrealistic. Laboratory experiments involve artificial environments that may be quite different from real-world situations. Econometric studies often exploit specific data sets that allow the researcher to identify certain effects. But we are not interested in models, experiments, or econometric regressions for their own sake, but for the insights they provide about the economy at large and for the uses to which they may put in dealing with real-world problems. Relying on the experience of the participating laureates, the panel will discuss why and under what conditions the insights gained from models, experiments, or econometric regressions can be used outside these narrow domains and how they contribute to dealing with real-world problems.

#### SCIENCE BREAKFAST ABSTRACTS

Science Breakfast hosted by Mars, Incorporated

# Paths to Innovation: Restoring Grassroots Dynamism to Address Global Challenges

Session: Thursday, 21 August, 07.00 hrs

While the idea of innovation is often associated with an invention or an inventor, this is actually only the beginning of the complex process that Edmund Phelps (Economics Nobel Laureate, 2006) describes as a "new method or a new product becoming a new practice". At the Mars, Incorporated Science Breakfast, Romesh Vaitilingam (VoxEU.org) will moderate a panel discussion focusing on this process and what is needed to restore the grassroots dynamism that can drive transformational innovation for better lives – or what Professor Phelps calls 'mass flourishing'.

The panel will feature contributions from Edmund Phelps and Ralph Jerome (Vice President of Corporate Innovation at Mars, Incorporated) as well as a selected young economist.

Edmund Phelps was awarded the Nobel Prize for Economics in 2006 for his analysis of inter-temporal tradeoffs in macroeconomics. He is McVickar Professor of Political Economy at Columbia University and Director of Columbia's Center on Capitalism and Society. In his latest book, 'Mass Flourishing: How Grassroots Innovation Created Jobs, Challenge, and Change' (2013), Professor Phelps outlines what makes nations prosper and why the sources of that prosperity are under threat today. He argues that most innovation is not driven by a few isolated visionaries, but rather by "dynamism" on a mass scale: millions of people empowered to think of, develop, and market new products and processes.

Ralph Jerome has been the Vice President of Corporate Innovation at Mars, Incorporated since establishing a dedicated transformational innovation function at the company in 2013. The Mars Corporate Innovation function was set up as a flexible and interconnected organization linked to a global network of top-class collaborators. In this context, Jerome has led the adop-

tion of a "grand challenge" approach at Mars to target breakthroughs that address the critical food, agriculture, and health issues faced by industry and society as a whole.

The Mars, Incorporated Science Breakfast will bring together the views of Laureates, industry practitioners and young economists—both on the panel and in the audience—to trigger robust discussion on the role of innovation in addressing the great global challenges.

### Science Breakfast hosted by SAP SE

# Innovation from the Edge – How could we possibly solve the "Innovator's Dilemma" through the Power of Diversity?

Session: Friday, 22 August, 07.00 hrs

The book "The Innovator's Dilemma" by Clayton M. Christensen is describing how good companies fail because they keep focusing on things they are already doing well and they deliver higher performance in the dimensions that existing customers value. These companies are incapable to deliver disruptive innovation as they rely on proven practices and established processes. According to Prof. Robert Austin from the Copenhagen Business School, the 21st century value creation challenge is to produce value not by generating similar outputs efficiently, but by generating novel (different) outputs more valuable than their predecessors.

Differences that are potentially valuable arise from different perspectives, different ways of thinking, different ways of being.

SAP believes that diversity is a source of innovative strength that allows the company to better meet and understand the needs of its customers. Being dedicated to make the world run better, focusing on a diverse and inclusive environment, gives us the foundation to ensure that we deliver innovative solutions for challenges our customers and society as a whole are facing today and in the future. We value an open company culture and are proud of the unique contribution each individual makes at SAP. Our diverse human capital is the essence of our success. Thus, more than 67,000 employees

from over 120 nationalities contribute and build with their uniqueness the sustainable success of SAP.

But is this enough? Not according to Christensen. So, can we create edges as source of innovation in the corporate world by employing people who think differently and who are not considered to be part of the mainstream movements? An important success criterion for SAP will be to bring 'outliers' into environments where they can spark innovation which will enhance the competitive edge of SAP. These 'outliers' must not be assimilated by the existing corporate culture and ways of thinking but carry a strong inherent value system that will evolutionize the company itself. Can talent from the edge change a company to embrace disruptive innovation? Is the power of diversity a way to solve "The Innovator's Dilemma"?

Join us for the discussion of highest concern – because Innovation is the business challenge – for all current market leaders that want to stay ahead.

### Science Breakfast hosted by UBS AG

# Banking and Banking Regulation after the Financial Crisis

Session: Friday, 22 August, 07.00 hrs

Whereas the economies of many countries are still experiencing the fallout from the financial from crisis, regulatory reform seems to have settled down. The industry and some economists complain about over-regulation, other economists complain about under-regulation, a continuation of regulatory practices that contributed to the crisis. Discussion at the science breakfast should try to disentangle what the issues are and what is at stake. What has been the contribution of regulation to crisis developments in 2007-2009 and again since 2010? What has changed and what does this change mean? What needs to be done to get out of the malaise in which many financial systems currently are? What needs to be done to avoid a recurrence of financial crises on a global scale?



# VARIATION – IMPROVISATION by Henri Matisse

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# ABOUT THE MEETINGS

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### The Meetings

The Lindau Nobel Laureate Meetings — established in 1951 — provide globally recognised forums for the exchange of knowledge between Nobel Laureates and young scientists. They inspire scientific generations and build sustainable networks of young scientists from around the world.

The participants at the Lindau Meetings are characterised by diversity. They all come from a variety of national and scientific backgrounds and have very different ways of communicating. This makes the Lindau Nobel Laureate Meetings unique in the world and a model of the kind of visionary cooperation which science will increasingly need in the future. Furthermore, scientific progress will need to be firmly anchored in international and interdisciplinary networks of individuals working together. Lindau provides the stimulus for such networks to take root and grow.

The original idea of the meetings goes back to the two Lindau physicians Dr. Franz Karl Hein and Professor Dr. Gustav Wilhelm Parade as well as Count Lennart Bernadotte af Wisborg, a member of the Swedish royal family who quickly became the spiritus rector of the Lindau Meetings. It was him who recognised the significance of the meetings for the reconciliation of the peoples of post-war Europe early and thus systematically developed it to an international forum for the exchange of knowledge between nations, cultures and disciplines.

### The Organisers

The Council for the Lindau Nobel Laureate Meetings and the Foundation Lindau Nobel Laureate Meetings organise the annual meetings. The Executive Secretariat is responsible for their planning and realisation.

Countess Bettina Bernadotte af Wisborg is president of the council, which sets the course for the Lindau Meetings' concept and programme. Internationally accredited scientists from the fields of medicine, physics, chemistry and the economic sciences are members of the council. The work of the council benefits from the commitment of the secretaries of the assemblies

responsible for awarding the Nobel Prizes: at least one of the two scientific chairpersons of each conference is a member of the institutions that select the Nobel Laureates.

The foundation was founded in the year 2000 by the council and the Bernadotte family on the initiative of 50 Nobel Laureates. Prof. Dr. h.c. Wolfgang Schürer serves as the chairman of the board of the foundation. Joint initiatives regarding the advancement of the Lindau Meetings and the establishment of an international network of academic partners are key priorities besides ensuring sustainable funding.

The Lindau Meetings enjoy widespread support. More than 270 Nobel Laureates are members of the founders' assembly of the foundation and demonstrate – through their membership and their participation in the Lindau Dialogue – their support for the principle of the Lindau Nobel Laureate Meetings. Personalities from the worlds of science, politics and industry have been inaugurated into the foundation's honorary senate in recognition of the special commitment they have shown towards scientific excellence and the promotion of young scientists.

### Funding of the Lindau Nobel Laureate Meetings

The Lindau Nobel Laureate Meetings are enabled thanks to the support received from companies, associations and private patrons, on the one hand, and from national and state ministries, the International Lake Constance Conference and the European Commission on the other.

International companies, selected foundations, associations and private patrons assure the material basis for the Lindau Meetings by making donations to the assets of the Foundation Lindau Nobel Laureate Meetings. Interest earned on the endowment, plus additional annual contributions by benefactors cover the budget of the Lindau Meetings. Donations in kind also play an important role in raising the professional level of the Meetings. The success of the Lindau Meetings can also be attributed not least to the commitment shown by the Nobel Laureates, members of the council and the board of the foundation during the preparation, realisation and evaluation

# ABOUT THE MEETINGS

ABOUT THE MEETINGS

of the meetings. They all give their support on a pro bono basis.

A full list of supporters is enclosed in this programme.

#### The Academic Partners Network

The Lindau Nobel Laureate Meetings interact closely with a global network of academic partners to identify highly-talented young scientists and professionals and to nominate them for participation. Partners include national academies of science, ministries, research institutions, top-ranking universities, foundations, international scientific organisations and central banks. Without this support, the Lindau Nobel Laureate Meetings would not be able to identify and invite the most gifted scientific talents world-wide.

The world's best young scientists of tomorrow submit applications to attend the Lindau Nobel Laureate Meetings. An international, multi-stage selection process makes sure that the scientific elite of the future is able to come together with the Nobel Laureates in Lindau. Every year, several thousand young scientists worldwide apply.

A full list of academic partners can be found in the Participant Directory.

# Lanyard Color Key

Turquoise Laureates

Grey Young Scientists

Red Guests Yellow Journalists

White Lindau Alumni (from 1986)
Brown Contractors of Third Parties

Orange Contractors

Green Council & Foundation

Black Staff of the Executive Secretariat

### Programme Session Types

The 5<sup>th</sup> Lindau Meeting on Economic Sciences features a variety of session formats. In general, the mornings usually offer plenary formats, while the afternoons add more interactive elements.

#### Plenary Lecture

Plenary lectures are given by Laureates only. They may choose a topic of their liking – be it their Prize research, be it something else. As the time is limited to thirty minutes, there is usually no discussion.

### Plenary Panel Discussion

In a plenary panel discussion, several panelists jointly discuss one topic. This year, three discussions are offered: on Thursday ("The Future of Econometrics: Structural Restrictions, Parametric Methods and Big Data"), on Friday ("Strategic Behavior, Incentives, and Mechanism Design") and on Saturday ("How Useful is Economics - How is Economics Useful?").

#### **Discussion Sessions**

In the afternoon, all lectures held in the morning can be discussed in a separate discussion session. These research-oriented discussions are strictly limited to Laureates and young scientists, and switching between sessions should be avoided.

#### Master Class

This format will offer a most intense exchange between young scientists and Laureates, as selected young scientists present their research and then engage in an in-depth discussion with a Laureate. Attendance requires online pre-registration.

#### Science Breakfasts

Science breakfasts are additional options for a more informal exchange. They are organised by Lindau's partners, featuring talks, discussions and a joint breakfast with a Laureate. Attendance requires online pre-registration.

The Lindau Nobel Laureate Meetings would like to thank all maecenates, patrons and donors for their contributions to the endowment of the foundation.

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### WANT TO DISCUSS SCIENCE?







# BUS LINES & TIME TABLE



#### Special Operating Hours during the Meeting

On Wednesday night, 20 August, the last buses leave at 00.10 hrs from the central connection point (ZUP) and serve all stops along their lines.

On Friday night, 22 August the last buses leave at 23.40 hrs from the central connection point (ZUP) and serve all stops along their lines.

#### How to Read the Time Table

The time table on the opposite page shows operating hours and departure times for all four lines and both directions. The first three columns (earliest, Saturday, Sunday) indicate when the earliest bus runs from each stop, while the last columns show the last service. The two middle columns (every hour at) show when buses depart between the first and last service. Example: 24/54 means that this bus departs from the station every hour at minute 24 and 54 (e.g. at 15.24 hrs and 15.54 hrs).

Bus Line #1 from Oberhoch	stog via	71 ID to M	lain Ctati	on /Icla	nd\		Bus Line #1 from Main Station (Island) via ZUP to Oberhochsteg								
bus Line #1 Hom Obernoch	steg via	ZUP LU IV	Idili Stat	1011 (1516	iliu)		bus tille #1 110111 Maill Sta	lion (isiai	iu) via Zi	JP LO OD	ernochs	ileg			
Oberhochsteg	5.24	6.24	7.24	24	54	22.24	Hauptbahnhof/Insel	5.21	6.21	7.21	21	51	22.21		
Rickenbach	5.25	6.25	7.25	25	55	22.25	Altes Rathaus	5.28	6.28	7.28	28	58	22.28		
Bayerstraße	5.26	6.26	7.26	26	56	22.26	Stadttheater	5.30	6.30	7.30	30	00	22.30		
Nóbelstraße	5.27	6.27	7.27	27	57	22.27	Maxhof	5.31	6.31	7.31	31	01	22.31		
Wannental	5.28	6.28	7.28	28	58	22.28	Toskana	5.33	6.33	7.33	33	03	22.33		
Lugeck	5.29	6.29	7.29	29	59	22.29	Langenweg	5.34	6.34	7.34	34	04	22.34		
Schule Reutin	5.30	6.30	7.30	30	00	22.30	Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.40		
Wiedemannstraße	5.31	6.31	7.31	31	01	22.31	Bodensee-Gymnasium	5.41	6.41	7.41	41	11	22.41		
Josefskirche	5.32	6.32	7.32	32	02	22.32	Blauwiese	5.42	6.42	7.42	42	12	22.42		
Köchlin	5.34	6.34	7.34	34	04	22.34	Köchlin	5.43	6.43	7.43	43	13	22.43		
Blauwiese	5.35	6.35	7.35	35	05	22.35	Josefskirche	5.44	6.44	7.44	44	14	22.44		
Bodensee-Gymnasium	5.36	6.36	7.36	36	06	22.36	Wiedemannstraße	5.45	6.45	7.45	45	15	22.45		
Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.40	Schule Reutin	5.46	6.46	7.46	46	16	22.46		
Langenweg	5.41	6.41	7.41	41	11	22.41	Lugeck	5.47	6.47	7.47	47	17	22.47		
Toskana	5.42	6.42	7.42	42	12	22.42	Wannental	5.48	6.48	7.48	48	18	22.48		
Heidenmauer	5.43	6.43	7.43	43	13	22.43	Nobelstraße	5.49	6.49	7.49	49	19	22.49		
Inselhalle	5.44	6.44	7.44	44	14	22.44	Bayerstraße	5.50	6.50	7.50	50	20	22.50		
Hauptbahnhof/Insel an	5.46	6.46	7.46	46	16	22.46	Rićkenbach	5.51	6.51	7.51	51	21	22.51		
							Oberhochsteg an	5.53	6.53	7.53	53	23	22.53		

Bus Line #2 from Unterreit	Bus Line #2 from Main Station (Island) via ZUP to Unterreitnau												
Unterreitnau	5.24	6.24	7.24	24	54	22.24	Hauptbahnhof/Insel	5.26	6.26	7.26	26	56	22.26
Eggatsweiler	5.25	6.25	7.25	25	55	22.25	Altes Rathaus	5.28	6.28	7.28	28	58	22.28
Schönau	5.28	6.28	7.28	28	58	22.28	Stadttheater	5.30	6.30	7.30	30	00	22.30
Entenberg	5.29	6.29	7.29	29	59	22.29	Maxhof	5.31	6.31	7.31	31	01	22.31
Hoyren	5.30	6.30	7.30	30	00	22.30	Toskana	5.33	6.33	7.33	33	03	22.33
Hochbuch	5.32	6.32	7.32	32	02	22.32	Langenweg	5.34	6.34	7.34	34	04	22.34
Heimesreutin	5.33	6.33	7.33	33	03	22.33	Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.40
Gstäudweg	5.34	6.34	7.34	34	04	22.34	Christuskirche	5.41	6.41	7.41	41	11	22.41
Schloß Moos	5.35	6.35	7.35	35	05	22.35	Schloß Moos	5.42	6.42	7.42	42	12	22.42
Christuskirche	5.36	6.36	7.36	36	06	22.36	Gstäudweg	5.43	6.43	7.43	43	13	22.43
Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.40	Heimesreutin	5.44	6.44	7.44	44	14	22.44
Langenweg	5.41	6.41	7.41	41	11	22.41	Hochbuch	5.45	6.45	7.45	45	15	22.45
Toskana	5.42	6.42	7.42	42	12	22.42	Hoyren	5.47	6.47	7.47	47	17	22.47
Heidenmauer	5.43	6.43	7.43	43	13	22.43	Entenberg	5.48	6.48	7.48	48	18	22.48
Inselhalle	5.44	6.44	7.44	44	14	22.44	Schönau	5.49	6.49	7.49	49	19	22.49
Westliche Insel	5.45	6.45	7.45	45	15	22.45	Unterreitnau an	5.53	6.53	7.53	53	23	22.53
Hauptbahnhof/Insel an	5.50	6.50	7.50	50	20	22.50							

Bus Line #3 from Oberreitn	au Nord	via ZUP	to Grenz	siealun	g/Zech		Bus Line #3 from Grenzsie	ilung/Ze	ch via ZU	IP to Obe	erreitna	u Nord	
Oberreitnau Nord	5.23	6.23	7.23	23	53	22.23	Grenzsiedlung/Zech	5.25	6.25	7.25	25	55	22.25
Emersberg/Oberreitnau	5.24	6.24	7.24	24	54	22.24	Kunert	5.26	6.26	7.26	26	56	22.26
Marienplatz/Oberreitnau	5.25	6.25	7.25	25	55	22.25	Metzeler	5.27	6.27	7.27	27	57	22.2
Kapelle	5.26	6.26	7.26	26	56	22.26	Gewerbegebiet	5.29	6.29	7.29	29	59	22.29
Paradies	5.27	6.27	7.27	27	57	22.27	Von-Behring-Straße	5.30	6.30	7.30	30	00	22.30
Schönau	5.29	6.29	7.29	29	59	22.29	Stadtwerke	5.30	6.30	7.30	30	00	22.30
Entenberg	5.30	6.30	7.30	30	00	22.30	Kamelbuckel	5.31	6.31	7.31	31	01	22.3
Hoyren	5.31	6.31	7.31	31	01	22.31	Buttlerhügel	5.32	6.32	7.32	32	02	22.3
Kránkenhaus	5.33	6.33	7.33	33	03	22.33	Berliner Platz	5.33	6.33	7.33	33	03	22.3
Holbeinstraße	5.34	6.34	7.34	34	04	22.34	Jugendherberge/LIMARE	5.35	6.35	7.35	35	05	22.3
Am Torggel	5.35	6.35	7.35	35	05	22.35	Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.4
Aeschach	5.36	6.36	7.36	36	06	22.36	Aeschach	5.41	6.41	7.41	41	11	22.4
Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.40	Am Torggel	5.42	6.42	7.42	42	12	22.4
Jugendherberge/LIMARE	5.42	6.42	7.42	42	12	22.42	Holbeinstraße	5.43	6.43	7.43	43	13	22.4
Berliner Platz	5.43	6.43	7.43	43	13	22.43	Krankenhaus	5.44	6.44	7.44	44	14	22.4
Buttlerhügel	5.44	6.44	7.44	44	14	22.44	Hoyren	5.45	6.45	7.45	45	15	22.4
Kamelbuckel	5.45	6.45	7.45	45	15	22.45	Entenberg	5.46	6.46	7.46	46	16	22.4
Stadtwerke	5.46	6.46	7.46	46	16	22.46	Schönau	5.47	6.47	7.47	47	17	22.4
Von-Behring-Straße	5.46	6.46	7.46	46	16	22.46	Paradies	5.48	6.48	7.48	48	18	22.4
Gewerbegebiet	5.47	6.47	7.47	47	17	22.47	Kapelle	5.49	6.49	7.49	49	19	22.4
Metzeler	5.48	6.48	7.48	48	18	22.48	Marienplatz	5.50	6.50	7.50	50	20	22.5
Versöhnerkirche	5.49	6.49	7.49	49	19	22.49	Oberreitnau Nord an	5.52	6.52	7.52	52	22	22.5
Kopernikusplatz/Zech	5.52	6.52	7.52	52	22	22.52							
Leiblachstraße	5.52	6.52	7.52	52	22	22.52							
Grenzsiedlung/Zech an	5.55	6.55	7.55	55	25	22.55							

Bus Line #4 from Rehlings/	Weißen	berg via	ZUP to A	Alwind		Bus Line #4 from Alwind via ZUP to Rehlings/Weißensberg							
Rehlings/Weißensberg	5.23	6.23	7.23	23	53	22.23	Alwind	5.24	6.24	7.24	24	54	22.2
indenstraße/Weißensberg		6.25	7.25	25	55	22.25	Degelstein	5.25	6.25	7.25	25	55	22.2
Motzacher Wald	5.28	6.28	7.28	28	58	22.28	Ebnet	5.26	6.26	7.26	26	56	22.2
Motzach	5.29	6.29	7.29	29	59	22.29	Johannes d. Täufer	5.27	6.27	7.27	27	57	22.2
Inselbrauerei	5.30	6.30	7.30	30	00	22.30	Enzisweiler Post	5.28	6.28	7.28	28	58	22.2
Rotmoosstraße	5.31	6.31	7.31	31	01	22.31	Schachener Hof	5.30	6.30	7.30	30	00	22.3
Rennerle	5.33	6.33	7.33	33	03	22.33	Schwesternberg	5.31	6.31	7.31	31	01	22.3
Friedhof Aeschach	5.34	6.34	7.34	34	04	22.34	Giebelbach	5.32	6.32	7.32	32	02	22.
VHeider-Gymnasium	5.35	6.35	7.35	35	05	22.35	Wackerstraße	5.33	6.33	7.33	33	03	22.
Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.40	Musikschule	5.34	6.34	7.34	34	04	22.
ärche	5.41	6.41	7.41	41	11	22.41	Lärche	5.35	6.35	7.35	35	05	22.
Musikschule	5.42	6.42	7.42	42	12	22.42	Anheggerstraße (ZUP)	5.40	6.40	7.40	40	10	22.
Wackerstraße	5.43	6.43	7.43	43	13	22.43	VHeider-Gymnasium	5.41	6.41	7.41	41	11	22.
Giebelbach	5.44	6.44	7.44	44	14	22.44	Friedhof Aeschach	5.42	6.42	7.42	42	12	22.
Schwesternberg	5.45	6.45	7.45	45	15	22.45	Rennerle	5.43	6.43	7.43	43	13	22.
chachener Hof	5.46	6.46	7.46	46	16	22.46	Rotmoosstraße	5.45	6.45	7.45	45	15	22
Enzisweiler Post	5.48	6.48	7.48	48	18	22.48	Inselbrauerei	5.46	6.46	7.46	46	16	22.
ohannes d. Täufer	5.49	6.49	7.49	49	19	22.49	Hasenbank	5.47	6.47	7.47	47	17	22
Ebnet	5.50	6.50	7.50	50	20	22.50	Schönbühl	5.50	6.50	7.50	50	20	22
Degelstein	5.51	6.51	7.51	51	21	22.51	Niederhaus	5.51	6.51	7.51	51	21	22
Alwind an	5.53	6.53	7.53	53	23	22.53	Rehlings/Weißensberg an	5.52	6.52	7.52	52	22	22.

GOOD TO KNOW NOTES

### Opening Hours Registration Desk

Tuesday, 19 August 12.00 - 20.00

Wednesday, 20 August 7.30 - 13.30 (YS), 8.00 - 13.30 (guests, media)

Thursday, 21 August 08.30 - 18.30 Friday, 22 August 08.30 - 14.00

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Department of Finance, Stockholm School of Economics, Sweden Member of the Economic Sciences Prize Committee, Stockholm, Sweden

#### Martin Hellwig

Director, Max Planck Institute for Research on Collective Goods, Bonn, Germany

### Wolfgang Schürer

Chairman of the Foundation Lindau Nobel Laureate Meetings, Germany Vice-President of the Council for the Lindau Nobel Laureate Meetings, Germany

### **Future Meetings**

 $4^{\rm th}$  Interdisciplinary Lindau Nobel Laureate Meeting 28 June - 3 July 2015

66<sup>th</sup> Lindau Nobel Laureate Meeting (Physics) 26 June – 1 July 2016

67<sup>th</sup> Lindau Nobel Laureate Meeting (Chemistry)

25 June – 30 June 2017

6<sup>th</sup> Lindau Meeting on Economic Sciences 22 – 26 August 2017

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