



69th Lindau Nobel Laureate Meeting
Programme



LINDAU
NOBEL LAUREATE
MEETINGS

MEETING APPS

The Lindau Meetings offer three different apps, available on Android and Apple app stores:



Lindau Nobel Laureate Meetings

The meeting guide

- Up-to-date programme info & details
- Session abstracts and poster abstracts
- Ask questions during panel discussions
- Participate in surveys
- Interactive maps
- Social media integration



Lindau Alumni Network

Stay in contact with your peers

- News
- Direct messages
- Participant profiles
- Alumni events

All young scientists have been invited to join the Lindau Alumni Network.



Lindau Science Trail

Explore the Lindau Science Trail

- Interactive map
- Rich content & detailed background information
- Tours & quizzes

TABLE OF CONTENTS

Scientific Programme	<i>page 10</i>
About the Meetings	<i>page 37</i>
Supporters	<i>page 42</i>
Maps	<i>page 50</i>
Good to Know	<i>page 62</i>

WELCOME



LINDAU NOBEL LAUREATE MEETINGS

In 1951, the idea of two doctors from the small town of Lindau became reality: They had the vision of reuniting European scientists after years of separation during World War II. Together with Count Lennart Bernadotte from nearby Mainau Island, Franz Karl Hein and Gustav Wilhelm Parade realised the first “European Meeting of Nobel Laureates” with seven Nobel Laureates. Only two years later, the first students were invited – the rest is history.

This summer, 39 Nobel Laureates and 580 young scientists from 89 countries will join the 69th Lindau Nobel Laureate Meeting. Never before have so many countries been represented in this extraordinary exchange. All you excellent scientists from around the world have one thing in common: your passion for physics. We hope you will experience the special “Lindau Spirit” – as more than 30.000 Lindau Alumni did before you.

Around 400 Nobel Laureates have attended the Lindau Nobel Laureate Meetings since its foundation. The Lindau Nobel Laureate Pier was built in their honour, and its opening is going to mark a highlight of this week. The guardrails of the pier not only bear the name, the year of the award and the discipline but also the year of the first visit to the Lindau Meeting. With 1000 individual metal bars, there is enough space for future Nobel Laureates who will attend in the years to come.

The Nobel Laureates were awarded the Nobel Prize for not only giving the right answers to important issues of their time. Prior to that, they had to ask the right questions. This week in Lindau is not only about answers, but questions. Scientific questions, but also: What are the big questions for society? How can science change the world for the better?

WELCOME

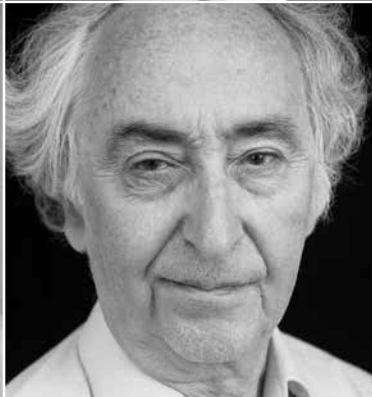
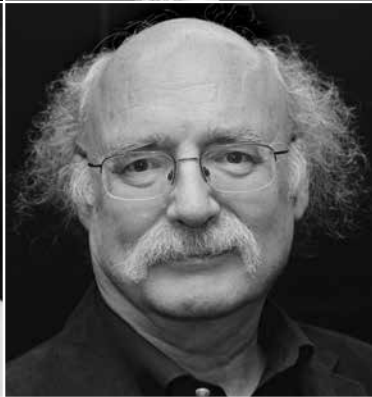
Issues like these will be discussed during the opening lecture as well as the closing panel, in a variety of sessions, and, of course, throughout the week by all of you.

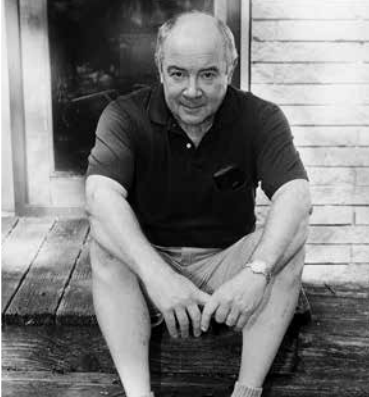
This aspiration is constantly challenging science as times are changing. Last year, Nobel Laureate Elizabeth Blackburn made a compelling appeal in Lindau for a new approach to global, sustainable, cooperative open science. There are certainly numerous accomplishments in science in history by individual nations. But problems facing humanity nowadays cannot be solved on a national basis anymore. Climate crisis, emerging infectious diseases and the need for alternative energy sources are pressing issues of our time to name but a few that need international and global answers.

Therefore, the core of the Lindau Meetings is to connect. Not only to connect the right thoughts and concepts in order to foster new scientific discoveries. But above all to connect people, hence knowledge can be multiplied all over the globe. Thus, we want to encourage you to use this opportunity to ask all your questions, to debate, to exchange views, to discuss beliefs and to learn from each other. After all, we hope you not only feel educated and inspired but first and foremost connected.

We wish you a most rewarding week in Lindau!

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





39 NOBEL LAUREATES

J. GEORG BEDNORZ STEVEN CHU

CLAUDE COHEN-TANNOUJDI JOHANN DEISENHOFER ALBERT FERT

JOACHIM FRANK DAVID J. GROSS F. DUNCAN M. HALDANE

THEODOR W. HÄNSCH SERGE HAROCHE HARALD ZUR HAUSEN

STEFAN W. HELL ROBERT HUBER BRIAN D. JOSEPHSON

TAKAAKI KAJITA TAWAKKOL KARMAN WOLFGANG KETTERLE

KLAUS VON KLITZING J. MICHAEL KOSTERLITZ JOHN C. MATHER

ARTHUR B. MCDONALD HARTMUT MICHEL WILLIAM E. MOERNER

GÉRARD A. MOUROU SIR KONSTANTIN S. NOVOSELOV

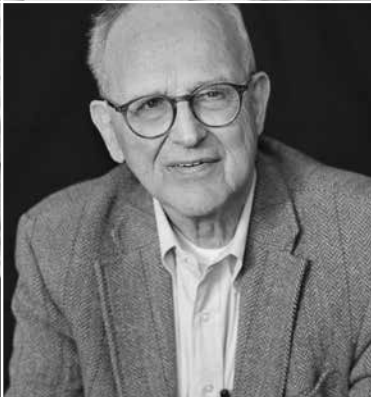
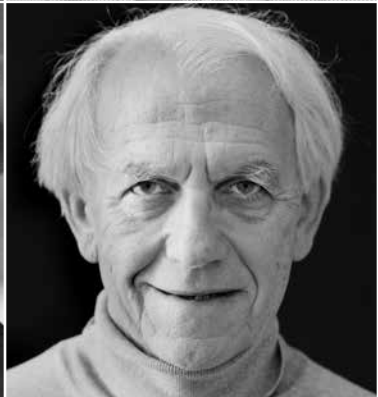
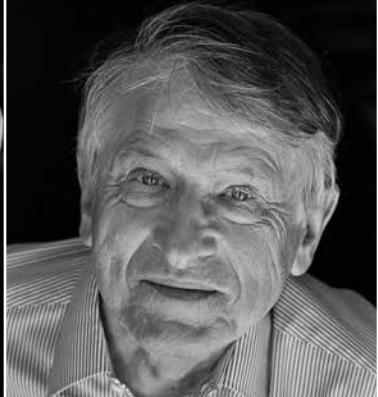
WILLIAM D. PHILLIPS ADAM G. RIESS CARLO RUBBIA

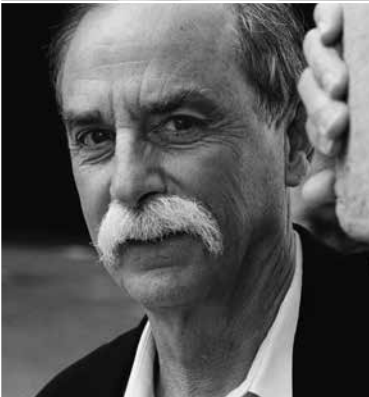
BRIAN P. SCHMIDT DAN SHECHTMAN GEORGE F. SMOOT

DONNA STRICKLAND JOSEPH H. TAYLOR MARTINUS J.G. VELTMAN

RAINER WEISS CARLE E. WIEMAN DAVID J. WINELAND

KURTH WÜTHRICH ADA E. YONATH





PROGRAMME OVERVIEW

	Sunday, 30 June	Monday, 1 July	Tuesday, 2 July
07.00		PE Partner Breakfast hosted by South Africa	PE Partner Breakfast in parallel, hosted by Mars, Inc. Rolex SA
08.00			
09.00		LE Strickland	LE Kajita
		LE Mourou	LE McDonald
10.00	Registration 10–20 hrs	Break	Break
		AT Moerner Phillips	AT Bednorz Haroche & Wineland
11.00		Break	Break
		AT Hell Wieman	AT Chu Mather & Smoot
12.00		Break	Break
		LE Novoselov	LE Taylor
13.00		LE Yonath	LE Weiss
		LE Frank	LE Riess
14.00		Lunch Break	Lunch Break
15.00	SE Opening Ceremony		LL Laureate Lunches PS Poster Session
16.00	SE Opening Concert	OE Frank Hell Moerner Mourou Novoselov Phillips Strickland Wiemann Yonath	PD The Dark Side of the Universe
17.00		SW Gross Haldane Kajita Ketterle von Klitzing Mather McDonald Riess Weiss	
18.00		PF Poster Flashes by 30 selected young scientists	OE Bednorz Chu Haroche & Wineland Kajita Mather & Smoot McDonald Riess Taylor Weiss MC Fert Wieman
19.00	SE Dinners at various locations		
20.00		SE International Get-Together hosted by South Africa	SE Academic Dinners at various locations hosted by Academic Partners or Grill & Chill hosted by Council & Foundation
21.00			
22.00			

Key

- | | | | |
|--------------------------|-----------------------------|--------------------------|----------------------------|
| AT Agora Talks | MC Master Classes | PE Partner Events | LL Laureate Lunches |
| LE Lecture | PD Panel Discussion | PF Poster Flashes | SE Social Events |
| OE Open Exchanges | SB Science Breakfast | PS Poster Session | SW Science Walks |

Wednesday, 3 July

SB **Science Breakfast**
hosted by
Lindau Nobel Laureate Meetings

LE Kosterlitz

LE Haldane

Break

AT Josephson
Veltman

Break

LE Rubbia

LE Gross

LE Wüthrich

Lunch Break

LL Laureate Lunches **PS** Poster Session

PD **Student, Postdoc, and Then? – Aiming for a Career in Science**

OE Gross Haldane Josephson Kosterlitz Rubbia Veltman Wüthrich	MC Haroche & Wineland Schmidt
--	---

LE Heidelberg Lecture
Hellman

SE **Dinner**

Thursday, 4 July

PE **Partner Breakfasts**
hosted by
Austrian Federal Ministry of
Education, Science and Research

LE Ketterle

LE Hänsch

Break

AT Deisenhofer
Huber

Break

AT zur Hausen
Michel

Break

LE Shechtman

LE von Klitzing

LE Cohen-Tannoudji

Lunch Break

LL Laureate Lunches **PS** Poster Session

OE Cohen-Tannoudji Deisenhofer Hänsch zur Hausen Huber Ketterle von Klitzing Michel Shechtman	SW Frank Hell Josephson Kosterlitz Moerner Phillips Schmidt Strickland Taylor Yonath
---	--

Break

SE **Bavarian Evening**
hosted by
Free State of Bavaria

Friday, 5 July

SE 07.00

Baden-Württemberg Boat Trip

to Mainau Island

hosted by the
State of Baden-Württemberg

08.00

09.00

10.00

PD 11.00

How Can Science Change the World for the Better?

12.00

13.00

Science Picnic on the Aboretum Lawn

hosted by the
Ministry of Science, Education
and the Arts,
State of Baden-Württemberg

14.00

15.00

SE **Farewell Ceremony**

16.00

SE **Baden-Württemberg Boat Trip**

to Lindau

hosted by the
State of Baden-Württemberg

17.00

18.00

19.00

20.00

21.00

22.00

SUNDAY, 30 JUNE

10.00

Registration
Inselhalle

Meeting Registration

from 10.00–20.00 hrs continuously

14.45

Seats for the Opening Ceremony need to be taken by 14.45 hrs at the latest. Strictly no access after 14.45 hrs.

15.00

Opening
Ceremony
Inselhalle

Opening Ceremony

Welcome & Interview

Countess Bettina Bernadotte

President, Council for the Lindau Nobel Laureate Meetings

Greetings from Stockholm

Lars Bergström

Member of the Board of the Nobel Foundation (2011–2017), Sweden
Secretary of the Nobel Committee for Physics (2004–2015), Sweden

Address

Anja Karliczek

Federal Minister of Education and Research, Germany

Opening Speech:

Big Questions for Society, Big Questions for Research

Brian P. Schmidt

Nobel Laureate in Physics 2011

The Australian National University, Australia

Interview

Lars Bergström

Scientific Chairperson, 69th Lindau Nobel Laureate Meeting

Rainer Blatt

Scientific Chairperson, 69th Lindau Nobel Laureate Meeting

Master of Ceremony

Adriana Marais

Head of Innovation, SAP Africa

Director, Foundation for Space Development, South Africa

Lindau Alumna 2016

Access: Nobel Laureates, young scientists, guests, journalists

16.15

Break

16.30

Social Event
Concert
Stadttheater

Reception

Reception upon invitation of the Federal Ministry of Education, Science and Research, Austria

Access: Nobel Laureates, young scientists, journalists
Access for guests: with online pre-registration only

Concert

Ensemble of the Vienna Philharmonic Orchestra

Welcome

Barbara Weitgruber

Director General for Scientific Research and International Relations,
Federal Ministry of Education, Science and Research, Austria

Access: Nobel Laureates, young scientists, journalists
Access for guests: with online pre-registration only

18.00–22.00

Social Event
Various Locations



Dinner

Access Inselhalle: young scientists

Please see your personal agenda for details.

MONDAY, 1 JULY

Partner Event**07.00**Partner Breakfast
Hotel Bayer. Hof**Global Science in Reaching for the Stars**

hosted by South Africa

Frank Bradley

Senior Developer – Project Lead, South African Radio Astronomical Observatory, South Africa

Thebe Medupe

Deputy Dean, Community Engagement and Stakeholder Relations, North-West University, South Africa

Brian P. Schmidt

The Australian National University, Australia

Buyisiwe Sondezi

Lecturer in Physics, University of Johannesburg, South Africa

Moderator: Beverley Damonse

Group Executive, Science Engagement and Corporate Relations, National Research Foundation, South Africa

Access: with online pre-registration only

09.00Lecture
Inselhalle*Donna Strickland***From Nonlinear Optics to High-Intensity Laser Physics**

09.30Lecture
Inselhalle*G rard A. Mourou***Passion for Extreme Light**


10.00**Break**

10.15Agora Talk
Inselhalle
Conf. Room L1–L2*William E. Moerner***What Can You Learn From Single Molecules, Even When Trapped Without Optical Forces?***Moderator: G nter Werth*

Johannes Gutenberg University Mainz, Germany

10.15Agora Talk
Inselhalle
Conf. Room 1–3*William D. Phillips***The New International System of Units: Our Metric System is Experiencing its Greatest Revolution Since the French Revolution***Moderator: Rainer Blatt*Scientific Chairperson, 69th Lindau Nobel Laureate Meeting

10.55**Break**

<p>11.05 Agora Talk Inselhalle Conf. Room 1–3</p>	<p><i>Stefan W. Hell</i> Reaching Molecular Size Resolution in Lens-Based Microscopy: the Diffraction Limit Blown Away <i>Moderator: Anna Sjöström-Douagi</i> Vice President Science & Programs, Nobel Prize Museum, Sweden</p>
<p>11.05 Agora Talk Inselhalle Conf. Room L1–L2</p>	<p><i>Carl E. Wieman</i> Taking a Scientific Approach to Physics Teaching and Learning <i>Moderator: Laura Sprechmann</i> Acting CEO, Nobel Media, Sweden</p>
<p>11.45</p>	<p>Break</p>
<p>12.00 Lecture Inselhalle</p>	<p><i>Sir Konstantin S. Novoselov</i> Materials of the Future</p>
<p>12.30 Lecture Inselhalle</p>	<p><i>Ada E. Yonath</i> The Ribosome – a Connection Between the Prebiotic Origin of Life and Next Generation Antibiotics</p>
<p>13.00 Lecture Inselhalle</p>	<p><i>Joachim Frank</i> Visualising Short-Lived States of Biological Molecules by Cryo-Electron Microscopy</p>
<p>13.30 Lunch Break Inselhalle </p>	<p>Lunch Break hosted by South Africa Access: Nobel Laureates, young scientists, guests, journalists</p>
<p>15.15 Science Walks</p>	<p>Science Walks Meeting point: main entrance of the Inselhalle Access: Nobel Laureates, young scientists with online pre-registration only Please see your personal agenda for details.</p>
<p>15.30 Open Exchange Inselhalle</p>	<p><i>Joachim Frank</i> Discussion With Young Scientists</p>

MONDAY, 1 JULY

15.30 *Stefan W. Hell*
Open Exchange
Hotel Bayer. Hof
Discussion With Young Scientists

15.30 *William E. Moerner*
Open Exchange
Hotel Bayer. Hof
Discussion With Young Scientists

15.30 *Gérard A. Mourou*
Open Exchange
Inselhalle
Discussion With Young Scientists

15.30 *Sir Konstantin S. Novoselov*
Open Exchange
Inselhalle
Discussion With Young Scientists

15.30 *William D. Phillips*
Open Exchange
Hotel Bayer. Hof
Discussion With Young Scientists

15.30 *Donna Strickland*
Open Exchange
Inselhalle
Discussion With Young Scientists

15.30 *Carl E. Wieman*
Open Exchange
Hotel Bayer. Hof
Discussion With Young Scientists

15.30 *Ada E. Yonath*
Open Exchange
Forum am See
Discussion With Young Scientists

17.00 **Break**

17.30 **Poster Flashes**
Stadttheater
30 young scientists will present their poster in a short, 2-minute presentation each. All posters can be viewed on Tuesday and Wednesday 09.00–18.30 hrs and on Thursday 09.00–15.00 hrs in the basement and foyer of the Inselhalle.
Access: all participants

19.00 **Break**

MONDAY, 1 JULY

19.00–19.30

Social Event
Inselhalle

Musical Greeting

Marimboz

19.30–23.30

Social Event
Inselhalle



International Get-Together

hosted by South Africa

Welcome

Countess Bettina Bernadotte

President, Council for the Lindau Nobel Laureate Meetings

Welcome Address

Representative of the South African Government

Cultural Performance

Nomfusi

Dinner

Access: Nobel Laureates, young scientists, journalists

Access for guests: by invitation only

MISSED SOMETHING?

Watch it online at

mediatheque.lindau-nobel.org



TUESDAY, 2 JULY

Partner Event**07.00**Partner Breakfast
Hotel Bayer. Hof**Excellence in Science and Exploration**

hosted by Rolex SA

John C. Mather

Goddard Space Flight Center, NASA, United States of America

Andrew McGonigle

The University of Sheffield, Department of Geography, United Kingdom

Moderator: Francesco Raeli

Rolex SA

Access: with online pre-registration only

Partner Event**07.00**Partner Breakfast
Forum am See**Physics, Oceans and Our Future**

hosted by Mars, Incorporated

Sylvia Earle

Marine Biologist, Explorer, Author, and Lecturer, United States of America

Donna Strickland

Department of Physics and Astronomy, University of Waterloo, Canada

*Young Scientist (tbd)**Moderator (tbd)*

Access: with online pre-registration only

09.00Lecture
Inselhalle*Takaaki Kajita***Oscillation of Atmospheric Neutrinos****09.30**Lecture
Inselhalle*Arthur B. McDonald***Direct Detection of Dark Matter With Liquid Argon****10.00****Break****10.15**Agora Talk
Inselhalle
Conf. Room L1–L2*J. Georg Bednorz***Career Planning in Science – Dreaming Allowed?***Moderator: Laura Sprechmann*

Acting CEO, Nobel Media, Sweden

TUESDAY, 2 JULY

10.15 Agora Talk Inselhalle Conf. Room 1–3	<i>Serge Haroche & David J. Wineland</i> Future Quantum Technologies <i>Moderator: Günter Werth</i> Johannes Gutenberg University Mainz, Germany
10.55	Break
11.05 Agora Talk Inselhalle Conf. Room L1–L2	<i>Steven Chu</i> Non-Thermal Equilibrium Transport by Dynein Molecular Motors in Live Neurons, and Breakthroughs in Linear and Non-Linear Ultrasound Imaging <i>Moderator: Adam Smith</i> Chief Scientific Officer, Nobel Media, Sweden
11.05 Agora Talk Inselhalle Conf. Room 1–3	<i>John C. Mather & George F. Smoot</i> From the Big Bang to Intelligent Life <i>Moderator: Lars Bergström</i> Scientific Chairperson, 69 th Lindau Nobel Laureate Meeting
11.45	Break
12.00 Lecture Inselhalle	<i>Joseph H. Taylor</i> The Long Tortuous Path to Gravitational Waves
12.30 Lecture Inselhalle	<i>Rainer Weiss</i> Gravitational Wave Astronomy
13.00 Lecture Inselhalle	<i>Adam G. Riess</i> The Expansion of the Universe, Faster Than We Thought
13.30 Lunch Break Inselhalle	Lunch Break Access: Nobel Laureates, young scientists, guests, journalists
13.30 Lunch Break Various Locations	Laureate Lunches Access: Nobel Laureates, young scientists with online pre-registration only Please see your personal agenda for details.



TUESDAY, 2 JULY

14.00

Inselhalle
Foyer

Poster Session

The poster session gives a selected number of young scientists the opportunity to present, describe and discuss their posters in the foyer of the Inselhalle.

15.30

Panel Discussion
Inselhalle

The Dark Side of the Universe

David J. Gross

Kavli Institute for Theoretical Physics, University of California,
Santa Barbara, United States of America

Kirsten Hall

Department of Physics and Astronomy, Johns Hopkins University,
United States of America

Adam G. Riess

Department of Physics and Astronomy, Johns Hopkins University,
United States of America

Brian P. Schmidt

The Australian National University, Australia

George F. Smoot

Lawrence Berkeley National Laboratory, University of California,
United States of America

Moderator: Jan-Martin Wiarda

Journalist for Education and Research, Germany

17.00

Break

17.30

Open Exchange
Inselhalle

J. Georg Bednorz

Discussion With Young Scientists

17.30

Open Exchange
Hotel Bayer. Hof

Steven Chu

Discussion With Young Scientists

17.30

Open Exchange
Forum am See

Serge Haroche & David J. Wineland

Discussion With Young Scientists

17.30

Open Exchange
Inselhalle

Takaaki Kajita

Discussion With Young Scientists

<p>17.30 Open Exchange Hotel Bayer. Hof</p>	<p><i>John C. Mather & George F. Smoot</i> Discussion With Young Scientists</p>
<p>17.30 Open Exchange Inselhalle</p>	<p><i>Arthur B. McDonald</i> Discussion With Young Scientists</p>
<p>17.30 Open Exchange Inselhalle</p>	<p><i>Adam G. Riess</i> Discussion With Young Scientists</p>
<p>17.30 Open Exchange Inselhalle</p>	<p><i>Joseph H. Taylor</i> Discussion With Young Scientists</p>
<p>17.30 Open Exchange Inselhalle</p>	<p><i>Rainer Weiss</i> Discussion With Young Scientists</p>
<p>17.30 Master Class Hotel Bayer. Hof</p>	<p><i>Master Class With Albert Fert</i> Topology & Physics: Topological Materials, Skyrmions <i>Edoardo Albisetti</i> Politecnico di Milano, Italy <i>Kai Litzius</i> Massachusetts Institute of Technology (MIT), United States of America <i>Helena Reichlová</i> Technical University Dresden, Germany Access: Nobel Laureates, young scientists with online pre-registration only</p>
<p>17.30 Master Class Hotel Bayer. Hof</p>	<p><i>Master Class With Carl E. Wieman</i> Teaching Physics <i>Sarah Guerin</i> Bernal Institute, University of Limerick, Ireland <i>Sebastien Philippe</i> Harvard University, United States of America <i>Philine van Vliet</i> University of Amsterdam, Netherlands Access: Nobel Laureates, young scientists with online pre-registration only</p>
<p>19.00</p>	<p>Break</p>

TUESDAY, 2 JULY

19.30

Social Event

Various Locations



Academic Dinners

upon invitation of the academic partners

Access: by invitation only

19.30–23.00

Social Event

Toskanapark



Grill & Chill: Connecting Cultures

upon invitation of the Lindau Nobel Laureate Meetings

Access: by invitation only

HAVE A BRILLIANT THOUGHT?

Share it with us on

Twitter

@lindaunobel #LINO19



WEDNESDAY, 3 JULY

07.00

Science Breakfast
Inselhalle



Graphene

hosted by Lindau Nobel Laureate Meetings

Jari Kinaret

Director, Graphene Flagship Project, Chalmers University of Technology, Sweden

Sir Konstantin S. Novoselov

University of Manchester, United Kingdom
National University of Singapore, Singapore

Albert Fert

Unité Mixte de Physique CNRS/Thales, Université Paris-Sud, France

Moderator: Adam Smith

Chief Scientific Officer, Nobel Media AB, Sweden

Access: Nobel Laureates, young scientists, journalists

09.00

Lecture
Inselhalle

J. Michael Kosterlitz

Creating New Scientific Knowledge

09.30

Lecture
Inselhalle

F. Duncan Haldane

Entanglement and Topological Quantum Matter

10.00

Break

10.30

Agora Talk
Inselhalle
Conf. Room L1–L2

Brian D. Josephson

Will Twenty-First Century Physics Need Biology?

Moderator: Burkhard Fricke

Former Vice-President, Council for the Lindau Nobel Laureate Meetings, University of Kassel, Germany

10.30

Agora Talk
Inselhalle
Conf. Room 1–3

Martinus J.G. Veltman

The Future of Particle Physics

Moderator: Rolf-Dieter Heuer

Vice-President, German Physical Society (DPG), Germany

11.10

Break

11.30

Lecture
Inselhalle

Carlo Rubbia

Further Searches of the Higgs Scalar Sector

WEDNESDAY, 3 JULY

12.00

Lecture
Inselhalle

David J. Gross

The Future of Fundamental Physics

12.30

Lecture
Inselhalle

Kurt Wüthrich

NMR – From Physics to Biology and Medical Diagnosis

13.00

Lunch Break
Inselhalle

Lunch Break

Access: Nobel Laureates, young scientists, guests, journalists



13.00

Lunch Break
Various Locations

Laureate Lunches

Access: Nobel Laureates, young scientists with online pre-registration only
Please see your personal agenda for details.



13.30

Inselhalle

Poster Session

The poster session gives a selected number of young scientists the opportunity to present, describe and discuss their posters in the foyer of the meeting venue Inselhalle.

15.00

Panel Discussion
Inselhalle

Student, Postdoc, and Then? – Aiming for a Career in Science

Niamh Kavanagh

University College Cork, Ireland

Wolfgang Ketterle

Research Laboratory for Electronics, MIT Massachusetts Institute of Technology, United States of America

William D. Phillips

Laser Cooling and Trapping Group, National Institute of Standards and Technology (NIST), United States of America

Donna Strickland

Department of Physics and Astronomy, University of Waterloo, Canada

Maria Žurek

Lawrence Berkeley National Laboratory, United States of America

Moderator: Alaina Levine

President, Quantum Success Solutions, United States of America

WEDNESDAY, 3 JULY

16.30	Break
17.00 Open Exchange Forum am See	<i>David J. Gross</i> Discussion With Young Scientists
17.00 Open Exchange Inselhalle	<i>F. Duncan Haldane</i> Discussion With Young Scientists
17.00 Open Exchange Hotel Bayer. Hof	<i>Brian D. Josephson</i> Discussion With Young Scientists
17.00 Open Exchange Inselhalle	<i>J. Michael Kosterlitz</i> Discussion With Young Scientists
17.00 Open Exchange Inselhalle	<i>Carlo Rubbia</i> Discussion With Young Scientists
17.00 Open Exchange Inselhalle	<i>Martinus J.G. Veltman</i> Discussion With Young Scientists
17.00 Open Exchange Hotel Bayr. Hof	<i>Kurt Wüthrich</i> Discussion With Young Scientists
17.00 Master Class Hotel Bayer. Hof	<i>Master Class With Serge Haroche & David J. Wineland</i> Manipulation of Individual Quantum Systems <i>Jan Goetz</i> Aalto University, Finland <i>Elena Jordan</i> National Institute of Standards and Technology (NIST), United States of America <i>Aishwarya Kumar</i> The Pennsylvania State University, United States of America <i>Guoji Zheng</i> Delft University of Technology, Netherlands Access: Nobel Laureates, young scientists with online pre-registration only

WEDNESDAY, 3 JULY

17.00

Master Class
Hotel Bayer. Hof

Master Class With Brian P. Schmidt

The Transient Universe

Vivien Bonvin

École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Marilyn Cruces

Max Planck Institute for Radioastronomy, Germany

Hester Schutte

Northwest University, United States of America

Sebastian Völkel

University of Tübingen, Germany

Access: Nobel Laureates, young scientists with online pre-registration only

18.30

Break

19.00

Heidelberg Lecture
Inselhalle

Martin E. Hellman

The Technological Imperative for Ethical Evolution

In accordance with Klaus Tschira's idea, the Heidelberg Laureate Forum where Abel, Fields and Turing Laureates meet the next generation was modelled after the Lindau Nobel Laureate Meetings. The Lindau and Heidelberg Lecture series show the strong affiliation.

Martin E. Hellman was awarded the ACM A.M. Turing Award in 2015.

19.30–21.30

Social Event
Inselhalle

Dinner

Access: young scientists, journalists

Dinner starts after the preceding lecture.



Partner Event

07.00

Partner Breakfast
Hotel Bayer. Hof



Big Science. Is There Still Room for the One Bright Idea?

hosted by Austrian Federal Ministry of Education, Science and Research

Rainer Weiss

LIGO MIT, United States of America

Rebecca Meißner

Institute for Ion Physics and Applied Physics, University of Innsbruck, Austria

Moderator: Olaf Reimer

Institute of Astro- and Particle Physics, University of Innsbruck, Austria

Access: with online pre-registration only

09.00

Lecture
Inselhalle

Wolfgang Ketterle

New Forms of Matter Near Absolute Zero Temperature

09.30

Lecture
Inselhalle

Theodor W. Hänsch

Laser Spectroscopy of Hydrogen and the Proton Radius Puzzle

10.00

Break

10.15

Agora Talk
Inselhalle
Conf. Room 1–3

Johann Deisenhofer

Photosynthesis – Structural Biology and Evolution

Moderator: Paul Kennedy

Academy of Science of South Africa, South Africa

10.15

Agora Talk
Inselhalle
Conf. Room L1–L2

Robert Huber

Proteases for Drug Design and Development, My Experience

Moderator: Tobias Maier

Deputy Director, National Institute for Science Communication (NaWik), Germany

10.55

Break

11.05

Agora Talk
Inselhalle
Conf. Room 1–3

Harald zur Hausen

Bovine Origin of Infections Linked to Colon and Breast Cancers

Moderator: Alaina Levine

President, Quantum Success Solutions, United States of America

THURSDAY, 4 JULY

11.05

Agora Talk
Inselhalle
Conf. Room L1–L2

Hartmut Michel

Structures of Terminal Oxidases: A Comparison of Structure Determinations by X-Ray Crystallography and Electron Microscopy

Moderator: Tobias Maier

Deputy Director, National Institute for Science Communication (NaWik), Germany

11.45

Break

12.00

Lecture
Inselhalle

Dan Shechtman

Scientific Blunder

12.30

Lecture
Inselhalle

Klaus von Klitzing

Quantum Hall Effect and the New SI System

13.00

Life Lecture
Inselhalle

Claude Cohen-Tannoudji

A Brief Description of My Personal and Scientific Itinerary

13.30

Lunch Break
Inselhalle

Lunch Break

Access: Nobel Laureates, young scientists, guests, journalists



13.30

Lunch Break
Various Locations

Laureate Lunches

Access: Nobel Laureates, young scientists with online pre-registration only
Please see your personal agenda for details.



14.00

Inselhalle
Foyer

Poster Session

The poster session gives a selected number of young scientists the opportunity to present, describe and discuss their posters in the foyer of the Inselhalle.

THURSDAY, 4 JULY

15.15 Science Walks	Science Walks Meeting point: main entrance of the Inselhalle Access: Nobel Laureates, young scientists with online pre-registration only Please see your personal agenda for details.
15.30 Open Exchange Forum am See	<i>Claude Cohen-Tannoudji</i> Discussion With Young Scientists
15.30 Open Exchange Hotel Bayer. Hof	<i>Johann Deisenhofer</i> Discussion With Young Scientists
15.30 Open Exchange Hotel Bayer. Hof	<i>Theodor W. Hänsch</i> Discussion With Young Scientists
15.30 Open Exchange Hotel Bayer. Hof	<i>Harald zur Hausen</i> Discussion With Young Scientists
15.30 Open Exchange Hotel Bayer. Hof	<i>Robert Huber</i> Discussion With Young Scientists
15.30 Open Exchange Inselhalle	<i>Wolfgang Ketterle</i> Discussion With Young Scientists
15.30 Open Exchange Inselhalle	<i>Klaus von Klitzing</i> Discussion With Young Scientists
15.30 Open Exchange Inselhalle	<i>Hartmut Michel</i> Discussion With Young Scientists
15.30 Open Exchange Inselhalle	<i>Dan Shechtman</i> Discussion With Young Scientists
17.00	Break

THURSDAY, 4 JULY

19.00–22.00

Social Event
Inselhalle

Bavarian Evening

hosted by the Free State of Bavaria

Welcome

Countess Bettina Bernadotte

President, Council for the Lindau Nobel Laureate Meetings

Words of Welcome

Bernd Sibler

Bavarian State Minister of Science and the Arts, Germany

Bavarian Music & Folk Dance



Bavarian Dinner

Access: Nobel Laureates, young scientists, journalists
Access for guests with online pre-registration only



WANT TO DISCUSS SCIENCE?

Visit the meeting blog at
lindau-nobel.org/blog

07.15

Social Event

MS Sonnenkönigin



Baden-Württemberg Boat Trip to Mainau Island

hosted by the State of Baden-Württemberg

Access: Nobel Laureates, young scientists

Access for guests: with online pre-registration only

Access for journalists: pre-registration at Press Desk by Thursday

Note: For all participants departing on Friday and not returning to their hotel: No luggage may be taken on the boat. Two luggage lorries will be available at Lindau harbour; please place your luggage accordingly.

Lorry 1 to "Mainau Island": for those not returning to Lindau. Pick-up is at main entrance on Mainau Island until 17.00 hrs.

Lorry 2 to "Lindau": for those leaving directly after their return to Lindau. Pick-up is at Lindau harbour immediately after arrival.

07.15

Lindau Harbour

Check-In (Lindau)

07.45

Lindau Harbour

Departure (Lindau)

08.00

Bad Schachen

Arrival (Hotel Bad Schachen)

08.15

Bad Schachen

Departure (Hotel Bad Schachen)

Welcome

Ulrich Steinbach

Deputy Minister, Ministry of Science, Research and the Arts,
Government of the State of Baden-Württemberg, Germany

Lindau Nobel Laureate Meetings Poster Awards Ceremony

10.20

Mainau Island

Arrival (Mainau Island)

FRIDAY, 5 JULY

11.00

Mainau Island
Castle Meadow

Welcome on Mainau Island

Countess Bettina Bernadotte and Count Björn Bernadotte

11.05

Conversation

Tawakkol Karman

in Conversation with Adam Smith

Tawakkol Karman

Nobel Peace Laureate 2011

Tawakkol Karman Foundation, Yemen

Moderator: Adam Smith

Chief Scientific Officer, Nobel Media AB, Sweden

11.35

Closing Panel
Discussion

How Can Science Change the World for the Better?

Bernard Bigot

Director-General, ITER Organization, France

Vinton Cerf

VP and Chief Internet Evangelist, Google, Inc., United States of America

Steven Chu

Physics Department, Stanford University, United States of America

Adriana Marais

Head of Innovation, SAP Africa

Director, Foundation for Space Development, South Africa

Lindau Alumna 2016

Brian P. Schmidt

The Australian National University, Australia

Moderator: Karan Khemka

Director in Global Education Companies and Institutions,

Singapore & United Kingdom

13.00

Lunch Break
Mainau Island

Science Picnic on the Arboretum Lawn

hosted by the Ministry of Science, Research and the Arts, State of Baden-Württemberg



15.30

Mainau Island
Castle Courtyard

Conclusion & Farewell

Countess Bettina Bernadotte

President, Council for the Lindau Nobel Laureate Meetings

Ulrich Steinbach

Deputy Minister, Ministry of Science, Research and the Arts,
Government of the State of Baden-Württemberg, Germany

16.00

Mainau Harbour

Boarding

16.30

Mainau Harbour

Departure (Mainau Island)

Baden-Württemberg Boat Trip to Lindau & Alumni Party

hosted by the State of Baden-Württemberg

18.30

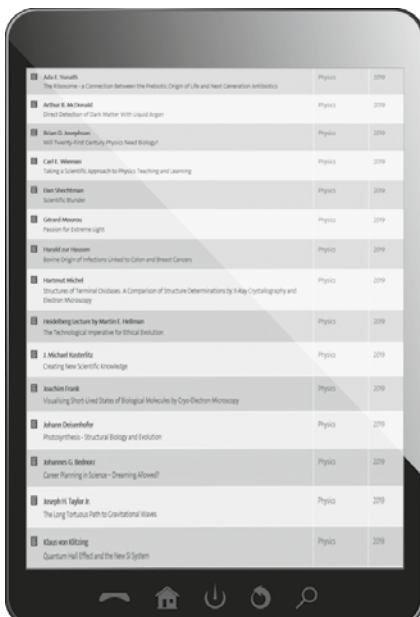
Bad Schachen

Arrival (Hotel Bad Schachen)

19.00

Lindau Harbour

Arrival (Lindau)



LOOKING FOR ABSTRACTS?

Session and poster abstracts
are available at
mediatheque.lindau-nobel.org
and in the Lindau Meeting app.

POSTER SESSION OVERVIEW

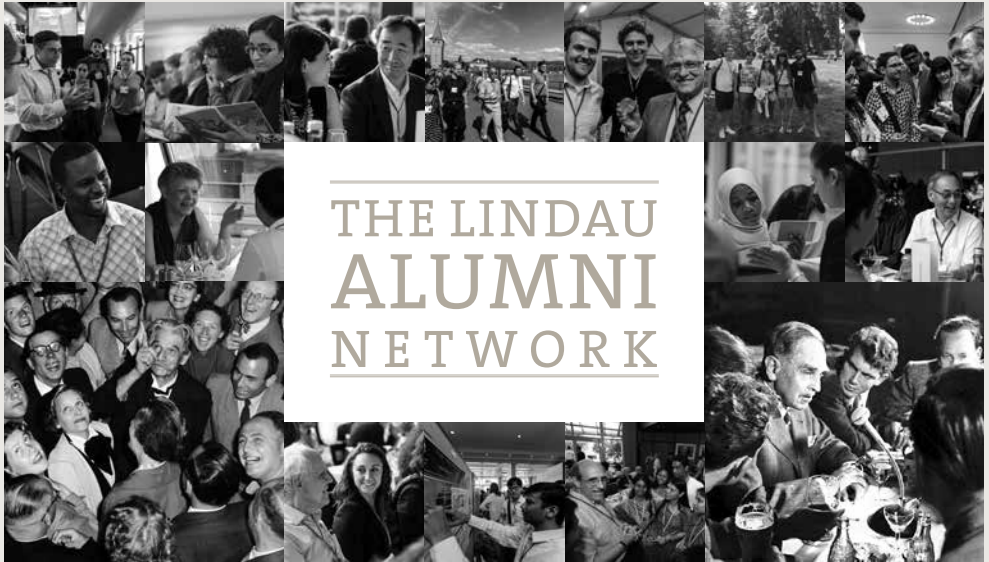
#	First Author	Title
Tuesday		
1	Caterina Vigliar	Arbitrary Graph State Generator in Silicon
2	Saverio Francesconi	Controlling Frequency Correlations and Biphoton Statistics in a Semiconductor Photonic Chip
3	Markus Parzefall	Optical Antennas Driven by Quantum Tunneling
4	Lars van der Wense	Paving the Way Towards a Nuclear Optical Clock
5	Aonan Zhang	Quantum and Classical Behaviours in Contextuality Tests
6	Ivo Straka	Quantum Features of Photon-Number States
7	Bruno Peaudecerf	Single-Atom Imaging of Fermionic Spin Mixtures in a Quantum-Gas Microscope
8	Tim Cornelissen	Switchable and Rectifying Bulk Conductivity in Molecular Ferroelectrics
9	Christine Maier	Variational Quantum Simulation with Trapped Ions
10	Ziqi Li	Multi-Gigahertz Monolithic Waveguide Laser Mode-Locked by Rhenium Diselenide Saturable Absorber
Wednesday		
11	Rei Yamashita	Fade-Out Mechanism of Shock Wave in a Real Atmosphere
12	An Pan	Fourier Ptychographic Microscopy: Break the Limitation of Conventional Microscopy
13	Jana Lasser	Geophysical Pattern Formation of Salt Playa
14	Gavin Macauley	Ice-Rule Made Manifold: Phase Transitions and Topological Defects in 2-D Artificial Spin Systems
15	Hanane Arahmane	Neutron-Gamma Discrimination Based on Support Vector Machine Combined to Nonnegative Matrix Factorisation and Continuous Wavelet Transform
16	Vanessa Graber	Probing Neutron Star Astrophysics With Laboratory Experiments
17	Fabian Mooshammer	Quantum Materials on the Femtosecond and Nanometer Scale
18	Anna Kormu	SCoNe – Simulations of Cosmic Networks
19	Carlos Naya	Skyrmions, a Topological Description of Nuclei
20	Aline Ramires	The Concept of Superconducting Fitness

POSTER SESSION OVERVIEW

#	First Author	Title
Thursday		
21	Noelia Fernandez	Bridging the THz Gap: Toward Ultrafast Coherent On-Chip Electronics up to 10 THz
22	Wee-Jun Ong	Elucidating the Reaction Mechanism of N ₂ Fixation by Single Transition-Metal Atom Embedded in Defective Graphitic Carbon Nitride (g-C ₃ N ₄)
23	Jane Vinokur	Interlayers Self-Generated by Additive–Metal Interactions in Organic Electronic Devices
24	Sergii Shylin	Meissner Effect in Hydrogen Sulfide Superconductor with T _C = 203 K
25	Andreas Jeindl	Physical Insight for Nanotechnology from Smart Data Machine Learning
26	Kai-Qiang Lin	Quantum Interference in 2D Semiconductors
27	Michał Dąbrowski	Quantum Optics of Spin Waves through AC-Stark Modulation
28	Russell Rundle	Quantum State Verification, Validation, and Visualisation via Phase Space Methods
29	Antonio Miguel Caravaca Aguirre	Shrinking Endoscopes: Multimodal Imaging with Multimode Fibers
30	Somnath Biswas	Watching Electrons Move: Understanding Solar Energy Conversion Using X-Ray Spectroscopy

Poster Presentation Time Slots

A	Tuesday, 2 July 2019	14.00–15.00
B	Wednesday, 3 July 2019	13.30–14.30
C	Thursday, 4 July 2019	14.00–15.00



When the boat leaves the harbour of Mainau Island and sets course back to Lindau, you have just become member of a very special group: the Lindau Alumni Network.

More than 32,000 young scientists have attended the meetings since 1951, everyone with his or her very own experiences. For most of them, Lindau has been a once-in-a-lifetime event, changing or influencing the direction of his or her future career. Many have become highly successful scientists, and one has even received the Nobel Prize.

Join our network by registering at www.lindau-alumni-network.org.

Find your friends from this year, previous years, your hometown, your field of research – and stay in contact with them. Groups, message boards and shared documents are tools offered online. Selected job offers only for Lindau Alumni may open a new door for your scientific career.

Plus, there are now more and more alumni meetings taking place worldwide. And if you would like to organise an alumni activity yourself, just tell us about it by writing to alumni@lindau-nobel.org.

ABOUT THE MEETINGS

The Meetings

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

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 them who recognised very early the significance of the meetings for the reconciliation of the people of post-war Europe and thus systematically developed them 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 one-week events. The executive secretariat is responsible for 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, which are represented in the Council.

The Foundation was established in the year 2000 by the Council and the Bernadotte family on the initiative of 50 Nobel Laureates. Prof. Dr. Jürgen Kluge 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 in addition to ensuring sustainable funding.

ABOUT THE MEETINGS

The Lindau Meetings enjoy widespread support. More than 300 Nobel Laureates are members of the Founders' Assembly of the Foundation and demonstrate – through their membership and their engagement with the Lindau Spirit – their support for the mission 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 made possible thanks to the support received from supranational, national and state bodies, companies, associations and private patrons.

International companies, selected foundations, associations and private patrons assure the financial 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. Not least, the success of the Lindau Meetings can also be attributed to the commitment shown by the Nobel Laureates, members of the Council and the board of the Foundation during the preparation, realisation and evaluation of the meetings. 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 to nominate them for participation. Partners include national academies of science, ministries, research institutions, top-ranking universities, foundations and international scientific organisations. Without this support, the Lindau Nobel Laureate Meetings would not be able to identify and invite the most gifted scientific talents worldwide.

ABOUT THE MEETINGS

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

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

Lanyard Colour Key

Turquoise	Nobel Laureates, their partners and family members
Grey	Young scientists
Blue	Visiting scientists
Red	Guests
Yellow	Journalists
Lime Green	Host families
Purple	Lindau citizens
Orange	Contractors
Brown	Contractors of third parties
Green	Council & Foundation
Black	Staff of the Executive Secretariat

ABOUT THE MEETINGS

Programme Session Types

Lectures

Lectures are given by laureates only. They may choose a topic of their liking – be it their Nobel Prize research, be it something else. As the time is limited to thirty minutes, there is no discussion directly after the lecture.

Agora Talks

Flexible and interactive. One laureate presenting or several laureates interacting in presentation/discussion of a theme; in both cases, a qualified moderator leads Q&A from the audience, discussion or even an interview. Up to two parallel events.

Panel Discussions

In a panel discussion, several panellists jointly discuss one topic. This year, three discussions are offered: on Tuesday (“The Dark Side of the Universe”), on Wednesday (“Student, Postdoc, and Then? – Aiming for a Career in Science”) and on Friday (“How Can Science Change the World for the Better?”).

Open Exchanges

In the afternoon, all lectures and Agora Talks held during the day can be discussed in separate discussion sessions. These research-oriented discussions are strictly limited to laureates and young scientists, and switching between sessions should be avoided.

Master Classes

This format offers 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.

Poster Flashes and Poster Session

During the Poster Flashes, 30 young scientists will present their posters in a short 2-minute presentation on stage in the Stadttheater. During the corresponding Poster Session on Tuesday or Thursday 14.00–15.00 hrs or on Wednesday 13.30–14.30 hrs, ten posters will be presented, discussed and described in the foyer of the Inselhalle. Moreover, the 30 posters will be dis-

ABOUT THE MEETINGS

Programme Session Types

played in the basement and the foyer all week. In addition, during the entire meeting, the first 30 as well as the 70 second-best posters will be displayed on two screens in the foyer and the basement.

Laureate Lunches

Pre-organised lunches with one laureate and up to ten young scientists. Approximately ten lunches may take place during one lunch break. Attendance requires online pre-registration.

Partner Breakfasts/Partner Events

Partners of the Lindau Meetings are invited to organise side events outside the core programme, e.g., in the mornings (Partner Breakfasts) or evenings (academic dinners or others). All sessions include food and beverages. As for the content of the presentations, several types are possible, e.g., panel discussion, world café, normal dinner, pitch presentations, etc. Attendance requires online pre-registration.

Science Breakfast

The Science Breakfast is an event organised by the Lindau Nobel Laureate Meetings. 2–5 Nobel Laureates make very short statements at the beginning, which are then jointly discussed by the audience at various tables. The session includes food and beverages.

Science Walks

Science Walks are yet another informal discussion opportunity: small circle discussion/dialogue event, where laureates and young scientists engage in exchange during a walk. The walk can be short or long and may include a break along the way, e.g., in a café, museum or similar. Attendance requires online pre-registration.

SUPPORTERS

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

PRINCIPAL MAECENATES

Klaus Tschira Stiftung gGmbH

Mars, Incorporated

MAECENATES

AstraZeneca

Bayer AG

Ecoscientia Stiftung

Freistaat Bayern – Bayerisches Staatsministerium für
Wissenschaft und Kunst

Microsoft Corporation

Robert Bosch GmbH

Rolex SA

SAP SE

Thomas Schmidheiny

Verband der Bayerischen Metall- u. Elektroindustrie

SUPPORTERS

PRINCIPAL PATRONS

Bertarelli Foundation

Carl Zeiss Stiftung

Monika and Wolfgang Schürer

National Research Foundation, Singapore

Novartis International AG

Siemens AG

Südwestmetall Verband der Metall- und Elektroindustrie Baden-Württemberg e. V.

Swiss Re Ltd

Verein der Bayerischen Chemischen Industrie e.V.

PATRONS

Deutsche Telekom Stiftung

LafargeHolcim Ltd.

SUPPORTERS

PRINCIPAL DONORS

Alexander S. Onassis Public Benefit Foundation
Boehringer Ingelheim GmbH
Carl Zeiss AG
Croucher Foundation
Hansjörg Wyss Medical Foundation
Jacobs Foundation
Jörnvall Foundation
maxingvest ag (Tchibo Holding AG)
Merck KGaA
Synthes-Stratec Inc.
Verband der Chemischen Industrie e.V. (VCI)

DONORS

acatech – Deutsche Akademie der Technikwissenschaften
Alcoa Inc.
Alexander und Katalin Dembitz
Andreas Büchting
AnneMarie Lynen
Artur Fischer
Bert Sakmann
Brian P. Schmidt
Charles Townes
Christian de Duve
Christopher Schläffer
Continental, Division Chassis & Safety, Lindau
Daniel and Greta Wilm
Edmond H. Fischer
ETO GRUPPE
Eva Lynen
Familie Lennart Graf Bernadotte af Wisborg
Fang and Gary L. Bridge
Fondazione Fidinam
Fredy and Regula Lienhard

SUPPORTERS

Fresenius SE & Co. KGaA
George Pinto
Hendrik Leber
Herbert and Irmgard Lütkestratkötter
Innovative Business Foundation Ltd.
Jack Steinberger
Jerome Karle
Joachim and Bärbel Milberg
Jörn Wilkening
John Robin Warren
Lemann Foundation
Leopoldina Nationale Akademie der Wissenschaften
Lindau Alumni Fund
Lyndon L. Olson and Mrs. Olson
Maja Dornier
Paul Crutzen
Paula Jean Hirsch
Peter D. Dornier
PwC PricewaterhouseCoopers AG
Richard C. Barker
Robert Stolze
Ruth Schilling
Salus Charity Foundation
Schindler Aufzüge AG
Simon W. and Alice I. Newman
Sparkasse Memmingen-Lindau-Mindelheim
Stiftung GAMBIT
Stiftung Hilfe zur Selbsthilfe
The Bert L and N Kuggie Vallee Foundation
Ulrich B. Stoll
Werner Arber
William E. and Sharon Moerner
Zumtobel Lighting GmbH
and the **Friends of the Foundation**

SUPPORTERS

The Lindau Nobel Laureate Meetings would like to thank all benefactors for their support of the 69th Lindau Nobel Laureate Meeting.

SIGNIFICANT MEETING BENEFACTORS

Academy of Science of South Africa (ASSAf)
Bayerisches Staatsministerium für Wissenschaft und Kunst
Bundesministerium für Bildung und Forschung (BMBF), Germany
BMW AG
Dieter Schwarz Stiftung gGmbH
Foundation Lindau Nobel Laureate Meetings and their
endowment contributors & Förderstiftung für die
Lindau Nobel Laureate Meetings
Klaus Tschira Stiftung gGmbH
Mars, Incorporated
Rolex SA
Wilhelm und Else Heraeus-Stiftung

PRINCIPAL BENEFACTORS

AKB Stiftung – Stiftung der Familie Carl-Ernst Büchting
BASF SE
Bayer Science & Education Foundation
Bundesministerium für Bildung, Wissenschaft und Forschung (BMBWF),
Austria
Carl Zeiss AG
Carl Zeiss Stiftung
Deutsche Forschungsgemeinschaft (DFG)
International Lake Constance Conference (IBK)
Jacobs Foundation
Land Baden-Württemberg
Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. (MPG)
Merck KGaA
National Research Foundation, Singapore
Prof. Otto Beisheim Stiftung

BENEFACTORS

Alexander S. Onassis Public Benefit Foundation
Christa und Hermann Laur-Stiftung
Continental, Division Chassis & Safety, Lindau
Deutscher Akademischer Austauschdienst (DAAD)
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.
Hans und Wolfgang Schleussner-Stiftung
Helmholtz-Gemeinschaft Deutscher Forschungszentren e.V.
Jörnvall Foundation
Jones Day
Lennart-Bernadotte-Stiftung
Lindau Tourismus und Kongress GmbH
Ludwig-Maximilians-Universität München
Mainau GmbH
Mineralbrunnen Teinach GmbH
Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg
Peter-Dornier-Stiftung
PwC PricewaterhouseCoopers AG
rose plastic AG
Sparkasse Memmingen-Lindau-Mindelheim
Spielbank Lindau
Staatliche Lotterieverwaltung (Bayern)
Stadt Lindau (B)
Stadtwerke Lindau (B) GmbH & Co. KG
Stiftung van Meeteren
The Nobel Foundation
Ubuntu-Stiftung Lüneburg
Warth & Klein Grant Thornton GmbH & Co. KG
Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz e. V.
Würth-Gruppe
Wyss Charitable Endowment

SUPPORTERS

CONTRIBUTORS

Anton Heine GmbH Fidelisbäck

Förderverein Römerbad e.V.

Gabriele David

Holger Alfes

Lighthouse GmbH

Meckatzer Löwenbräu Benedikt Weiß KG

Steinhauser GmbH

Tchibo GmbH

Wein- und Obstgut Haug

and anonymous benefactors

Hundertwasser, 690 Green Power, 1972, Siebdruck
Die Hundertwasser Gemeinnützige Privatstiftung, Wien © 2019 Namida AG, Clarus, Schweiz



FRIEDENSREICH HUNDERTWASSER »DREAMCATCHER FOR A MORE BEAUTIFUL WORLD«

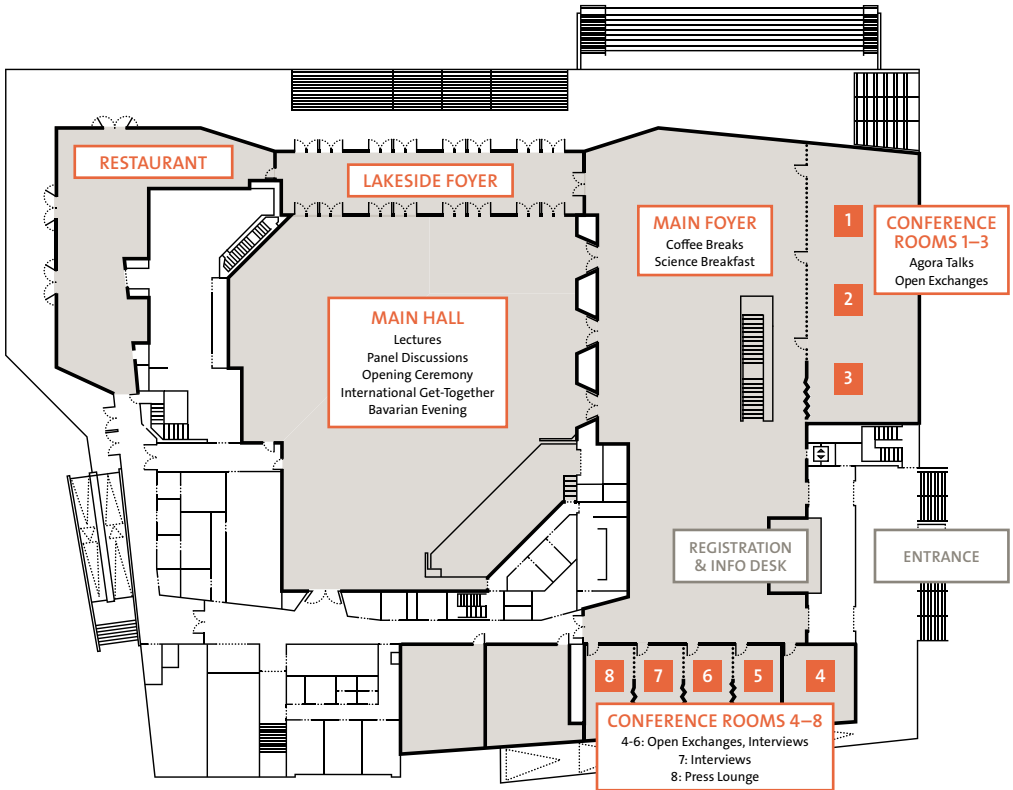
6 April–29 September 2019 | Kunstmuseum am Inselbahnhof

Opening hours: 10.00–18.00 hrs

Free exhibition access with young scientist name badge

MEETING VENUE INSELHALLE

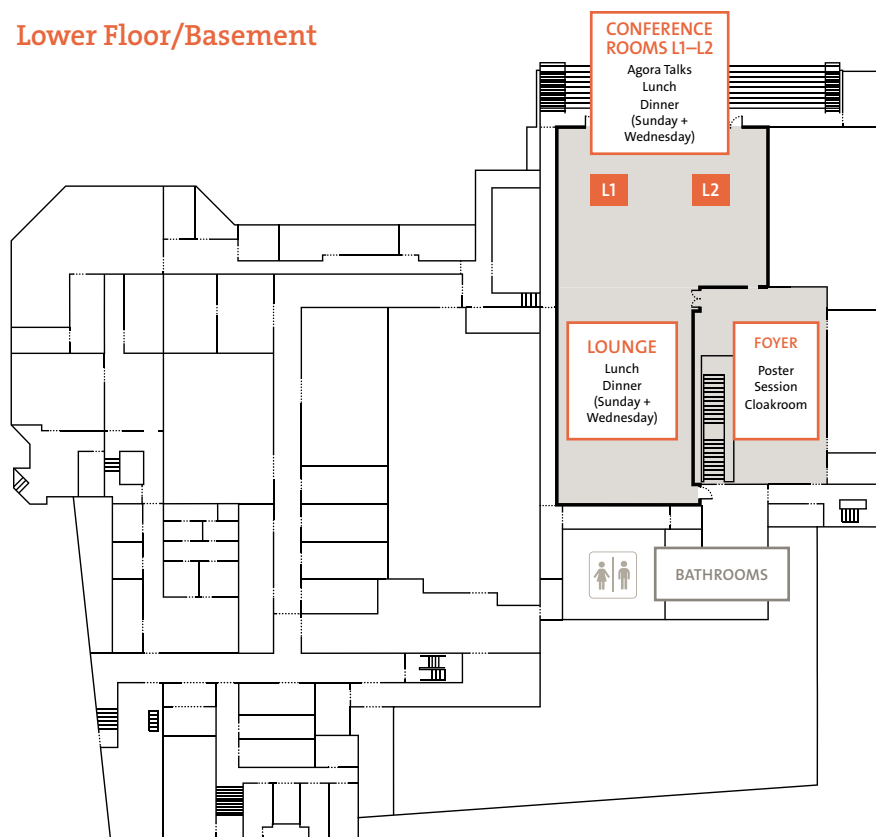
Ground Floor



What	Where
Agora Talks	Conference Rooms 1–3 and Conference Rooms L1–L2
Bathrooms	Basement
Coffee Breaks	Main Foyer
Dinner	Various locations. In the Inselhalle: Lounge in the basement
Lectures	Main Hall
Lunch	Basement Laureate Lunches: various destinations
Master Classes	Hotel Bayerischer Hof
Open Exchanges	Conference Rooms 1–6

MEETING VENUE INSELHALLE

Lower Floor/Basement



What

Where

Panel Discussions	Main Hall
Partner Breakfasts	Hotel Bayerischer Hof and Forum am See
Poster Exhibition	Basement and Main Foyer
Poster Flashes	Stadttheater
Press Lounge	Conference Room 8
Science Breakfast	Main Foyer
Science Walks	Meeting Point: Main Entrance of the Inselhalle
Social Events	Various locations. In the Inselhalle: Main Hall

PROGRAMME LOCATIONS



Inselhalle


Morning Workout
(bad weather)

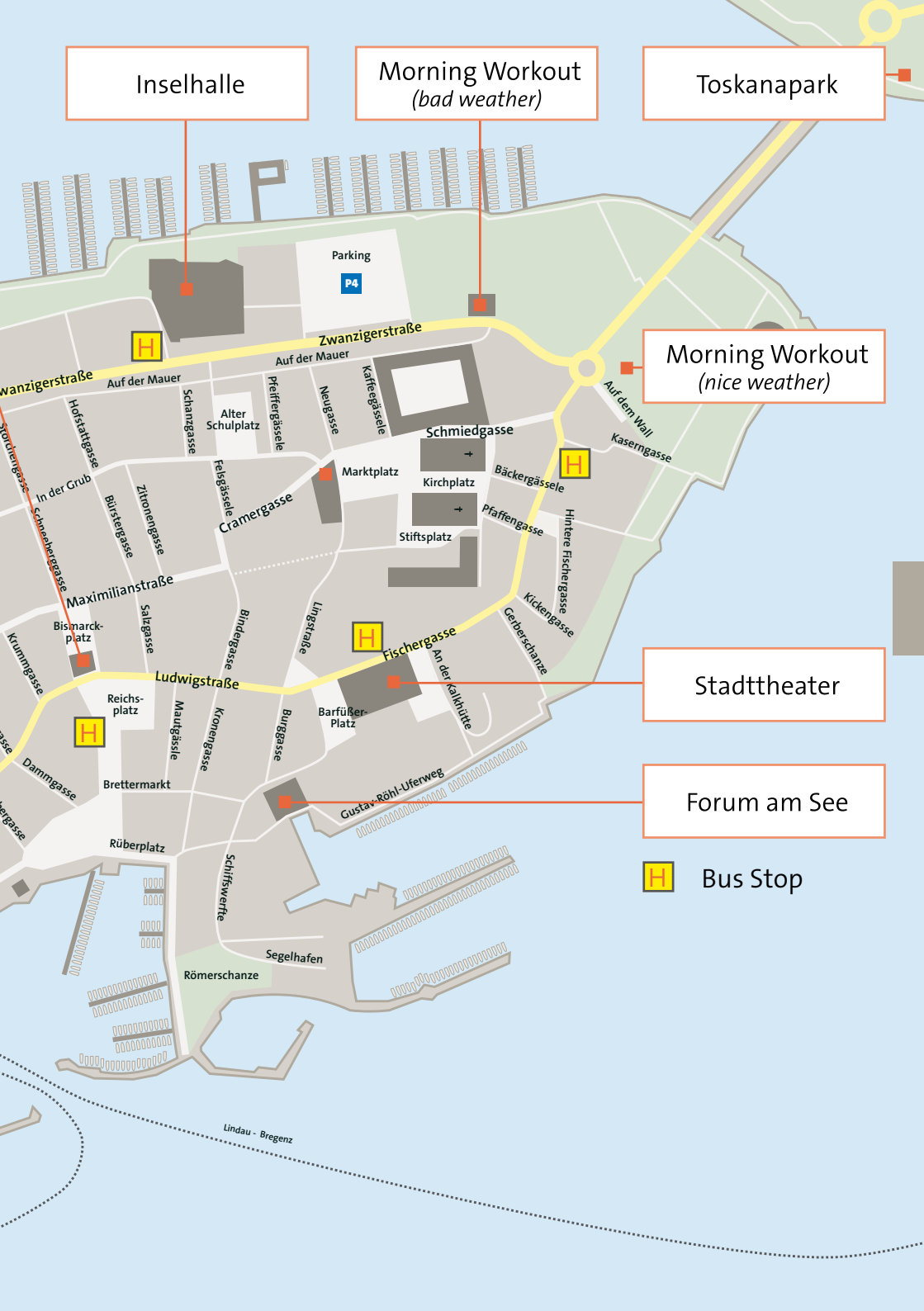
Toskanapark

Morning Workout
(nice weather)

Stadttheater

Forum am See

 Bus Stop



PROGRAMME RESTAURANTS

Hotel Engel

Schafgasse 4



Ottimo

Bahnhofplatz 1

Eilguthalle

Schützingerweg 2

Wissingers

In der Grub 28

Valentin

In der Grub 28a

Cantina (Spielbank)

Chelles-Allee 1



Alte Post

Fischergasse 3

Hotel-Gasthof Stift

Stifftsplatz 1

**Hotel Bayerischer Hof/
Reutemann-Seegarten**

Seepromenade

Mole3 "Stoffel's"

Segelhafen 3

Lindau - Bregenz

LINDAU VICINITY MAP





Oberrengersweiler

Rehlings

Weissensberg

Niederhaus

Dreibergsberg

Tunnel

Schönbühl

Goltplatz
Gedächtnis-Linden-Denkmal

Kempfenstraße

Waldenflüßchen

Schießstand

Motzach

Streitelsfingen

Hochbuch

Heimesreutin

Aeschach

Wannental

Reutiner Straße

Reutin

Schulzentrum

Alter Friedhof

Halbes Bad

Waldenflüßchen

Feuerwache

Techn. Hilfsw.

Aeschacher Bad

Kleiner See

Eisenplatz

Strandbad

Eichwald

0 100 500 1000 m

BUS LINES & TIME TABLE



Special Operating Hours during the Lindau Meeting

The last buses leave from the central connection point (ZUP) as follows:
 Monday night, 1 July at 00.10 hrs
 Tuesday night, 2 July at 23.40 hrs
 Thursday night, 4 July at 23.10 hrs

All buses serve all stops along their lines. All other bus lines run as listed in the time tables opposite.

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).

NIGHT BUS LINES & TIME TABLE

FRIDAY AND SATURDAY



Special Operating Hours during the Lindau Meeting

The last buses leave from the central connection point (ZUP) as follows:

Monday night, 1 July at 00.10 hrs

Tuesday night, 2 July at 23.40 hrs

Thursday night, 4 July at 23.10 hrs

All buses serve all stops along their lines. All other bus lines run as listed in the time tables opposite.

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 23.24 hrs and 22.54 hrs).

	earliest		latest		earliest		latest
Bus Line #1 from Oberhochsteg via ZUP to Main Station (Island)				Bus Line #1 from Main Station (Island) via ZUP to Oberhochsteg			
Oberhochsteg	22.54	23.24	x	00.24	Hauptbahnhof/Insel	22.51	23.21 23.51 00.21
Rickenbach	22.55	23.25	x	00.25	Altes Rathaus	22.59	23.29 23.59 00.29
Bayerstraße	22.56	23.26	x	00.26	Stadttheater	23.01	23.31 00.01 00.31
Nobelstraße	22.57	23.27	x	00.27	Maxhof	23.03	23.33 00.03 00.33
Wannental	22.58	23.28	x	00.28	Toskana	23.05	23.35 00.05 00.35
Lugeck	22.59	23.29	x	00.29	Langenweg	23.06	23.36 00.06 00.36
Schule Reutin	23.00	23.30	x	00.30	Anheggerstraße (ZUP)	23.10	23.40 00.10 00.40
Wiedemannstraße	23.01	23.31	x	00.31	Bodensee-Gymnasium	23.11	x 00.11 x
Josefskirche	23.02	23.32	x	00.32	Blauwiese	23.12	x 00.12 x
Köchlin	23.04	23.34	x	00.34	Köchlin	23.13	x 00.13 x
Blauwiese	23.05	23.35	x	00.35	Josefskirche	23.14	x 00.14 x
Bodensee-Gymnasium	23.06	23.36	x	00.36	Wiedemannstraße	23.15	x 00.15 x
Anheggerstraße (ZUP)	23.10	23.40	00.10	00.40	Schule Reutin	23.16	x 00.16 x
Langenweg	23.11	23.41	00.11	00.41	Lugeck	23.17	x 00.17 x
Toskana	23.12	23.42	00.12	00.42	Wannental	23.18	x 00.18 x
Heidenmauer	23.13	23.43	00.13	00.43	Nobelstraße	23.19	x 00.19 x
Inselhalle	23.14	23.44	00.14	00.44	Bayerstraße	23.20	x 00.20 x
Hauptbahnhof/Insel an	23.16	23.46	00.16	00.46	Rickenbach	23.21	x 00.21 x
					Oberhochsteg an	23.23	x 00.23 x
Bus Line #2 from Unterreitnau via ZUP to Main Station (Island)				Bus Line #2 from Main Station (Island) via ZUP to Unterreitnau			
Unterreitnau	22.54			23.54	Hauptbahnhof/Insel		x
Eggatsweiler	22.55			23.55	Altes Rathaus		x
Schönau	22.58			23.58	Stadttheater		x
Entenberg	22.59			23.59	Maxhof		x
Hoyren	23.00			00.00	Toskana		x
Hochbuch	23.02			00.02	Langenweg		x
Heimesreutin	23.03			00.03	Anheggerstraße (ZUP)	23.40	00.40
Gstäudweg	23.04			00.04	Christuskirche	23.41	00.41
Schloß Moos	23.05			00.05	Schloß Moos	23.42	00.42
Christuskirche	23.06			00.06	Gstäudweg	23.43	00.43
Anheggerstraße (ZUP)	23.10			00.10	Heimesreutin	23.44	00.44
Langenweg	x			x	Hochbuch	23.45	00.45
Toskana	x			x	Hoyren	23.47	00.47
Heidenmauer	x			x	Entenberg	23.48	00.48
Inselhalle	x			x	Schönau	23.49	00.49
Westliche Insel	x			x	Unterreitnau an	23.53	00.53
Hauptbahnhof/Insel an	x			x			
Bus Line #3 from Oberreitnau Nord via ZUP to Grenzsiedlung/Zech				Bus Line #3 from Grenzsiedlung/Zech via ZUP to Oberreitnau Nord			
Oberreitnau Nord	22.53	23.23		00.23	Grenzsiedlung/Zech	22.55	23.55
Emersberg/Oberreitnau	22.54	23.24		00.24	Kunert	22.56	23.56
Marienplatz/Oberreitnau	22.55	23.25		00.25	Metzeler	22.57	23.57
Kapelle	22.56	23.26		00.26	Gewerbegebiet	22.59	23.59
Paradies	22.57	23.27		00.27	Von-Behring-Straße	23.00	23.00
Schönau	22.59	23.29		00.29	Stadtwerke	23.00	00.00
Entenberg	23.00	23.30		00.30	Kamelbuckel	23.01	00.01
Hoyren	23.01	23.31		00.31	Buttlerhügel	23.02	00.02
Krankenhaus	23.03	23.33		00.33	Berliner Platz	23.03	00.03
Holbeinstraße	23.04	23.34		00.34	Jugendherberge/LIMARE	23.05	00.05
Am Torggel	23.05	23.35		00.35	Anheggerstraße (ZUP)	23.10	00.10
Aeschach	23.06	23.36		00.36	Aeschach	23.11	00.11
Anheggerstraße (ZUP)	23.10	23.40		00.40	Am Torggel	23.12	00.12
Jugendherberge/LIMARE	x	23.42		00.42	Holbeinstraße	23.13	00.13
Berliner Platz	x	23.43		00.43	Krankenhaus	23.14	00.14
Buttlerhügel	x	23.44		00.44	Hoyren	23.15	00.15
Kamelbuckel	x	23.45		00.45	Entenberg	23.16	00.16
Stadtwerke	x	23.46		00.46	Schönau	23.17	00.17
Von-Behring-Straße	x	23.46		00.46	Paradies	23.18	00.18
Gewerbegebiet	x	23.47		00.47	Kapelle	23.19	00.19
Metzeler	x	23.48		00.48	Marienplatz	23.20	00.20
Versöhnkirche	x	23.49		00.49	Oberreitnau Nord an	23.22	00.22
Kopernikusplatz/Zech	x	23.52		00.52			
Leiblachstraße	x	23.52		00.52			
Grenzsiedlung/Zech an	x	23.55		00.55			
Bus Line #4 from Rehlings/Weißenberg via ZUP to Alwind				Bus Line #4 from Alwind via ZUP to Rehlings/Weißenberg			
Rehlings/Weißenberg	x	x		x	Alwind	22.54	23.54
Lindenstraße/Weißenberg	22.55	23.25		00.25	Degelstein	22.55	23.55
Motzacher Wald	22.58	23.28		00.28	Ebnet	22.56	23.56
Motzach	22.59	23.29		00.29	Johannes d. Täufer	22.57	23.57
Inselbrauerei	23.00	23.30		00.30	Enzisweiler Post	22.58	23.58
Rotmoosstraße	23.01	23.31		00.31	Schachener Hof	23.00	00.00
Rennerle	23.03	23.33		00.33	Schwesterberg	23.01	00.01
Friedhof Aeschach	23.04	23.34		00.34	Giebelbach	23.02	00.02
V.-Heider-Gymnasium	23.05	23.35		00.35	Wackerstraße	23.03	00.03
Anheggerstraße (ZUP)	23.10	23.40		00.40	Musikschule	23.04	00.04
Lärche	x	23.41		00.41	Lärche	23.05	00.05
Musikschule	x	23.42		00.42	Anheggerstraße (ZUP)	23.10	00.10
Wackerstraße	x	23.43		00.43	V.-Heider-Gymnasium	23.11	00.11
Giebelbach	x	23.44		00.44	Friedhof Aeschach	23.12	00.12
Schwesterberg	x	23.45		00.45	Rennerle	23.13	00.13
Schachener Hof	x	23.46		00.46	Rotmoosstraße	23.15	00.15
Enzisweiler Post	x	23.48		00.48	Inselbrauerei	23.16	00.16
Johannes d. Täufer	x	23.49		00.49	Hasenbühl	23.17	00.17
Ebnet	x	23.50		00.50	Schönbühl	23.20	00.20
Degelstein	x	23.51		00.51	Niederhaus	23.21	00.21
Alwind an	x	23.53		00.53	Rehlings/Weißenberg an	x	x

GOOD TO KNOW

Opening Hours Registration and Info Desk

Saturday, 29 June	14.00–18.00
Sunday, 30 June	10.00–20.00
Monday, 1 July	08.30–16.30
Tuesday, 2 July	08.30–18.00
Wednesday, 3 July	08.30–19.00
Thursday, 4 July	08.30–19.00

Opening Hours Press Desk

Sunday, 30 June	10.00–18.00
Monday, 1 July	08.30–18.30
Tuesday, 2 July	08.30–18.30
Wednesday, 3 July	08.30–19.00
Thursday, 4 July	08.30–19.00

On site Contacts

The office can be reached during the meeting as follows:

Registration Desk	Tel +49 8382 8899 621 Fax +49 8382 8899 629
Press Desk	Tel +49 8382 8899 638
Email	info@lindau-nobel.org
Emergency	112
Taxi	+49 8382 5050 or +49 8382 3550

Scientific Chairpersons of the 69th Lindau Nobel Laureate Meeting

Lars Bergström

*Member of the Royal Swedish Academy of Sciences, Sweden
Member of the Board of the Nobel Foundation (2011–2017), Sweden
Secretary of the Nobel Committee for Physics (2004–2015), Sweden
Professor of Theoretical Physics, Stockholm University, Sweden*

Rainer Blatt

*Member of the Austrian Academy of Sciences, Austria
Institute for Experimental Physics, University of Innsbruck, Austria
Institute for Quantum Optics and Quantum Information Innsbruck, Austria
Austrian Academy of Sciences, Austria*

Future Meetings

70th Lindau Nobel Laureate Meeting (Interdisciplinary)

28 June–3 July 2020

7th Lindau Meeting on Economic Sciences

25–29 August 2020

71st Lindau Nobel Laureate Meeting (Chemistry)

27 June–2 July 2021

72nd Lindau Nobel Laureate Meeting (Physiology and Medicine)

26 June–1 July 2022

73rd Lindau Nobel Laureate Meeting (Physics)

25 June–30 June 2023



MAGNETS, AIR AND THE UNIVERSE

The beginnings of scientific observation and new horizons in physics

Books from the 16th to the 18th century

1–4 July 2019 | Former Imperial City Library

Opening hours: 14.00–18.00 hrs

Free access to the exhibition for all guests with their name badges

Free introduction to the exhibition and the history of the library by the curator
on 3 July 2019, 14.00–17.00 hrs

THE MEETINGS ONLINE

Blog

lindau-nobel.org/blog

Lindau Alumni Network

www.lindau-alumni-network.org

Mediatheque

mediatheque.lindau-nobel.org

Nobel Labs 360°

nobellabs.lindau-nobel.org

Facebook

www.facebook.com/LindauNobelLaureatesMeeting

Instagram

instagram.com/lindaunobel

LinkedIn

linkedin.com/company/lindau-nobel-laureate-meetings

Twitter

[@lindaunobel](https://twitter.com/lindaunobel) [#LINO19](https://twitter.com/LINO19)

YouTube

youtube.com/NobelLaureateMeeting

Copyright 2019: The Lindau Nobel Laureate Meetings.

All information (as of 3 June 2019) is provided as an indication only; changes may occur at any time without prior notice.

Programme Editors: Susanne Wieczorek, Katja Merx, Wolfgang Huang, Nikolaus Turner

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

Alfred-Nobel-Platz 1
88131 Lindau
Germany

www.lindau-nobel.org