A two-week high-level summer course on questions related to fundamental methodological problems of applied science, spanning a wide range of topics in history, epistemology, and sociology, and addressing normative and topical issues from an international perspective.
10 Years Vienna International Summer University

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2001–2011
VISU Summer Courses

organized by
the University of Vienna and the Institute Vienna Circle
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Since 2001 the University of Vienna and the Institute Vienna Circle** have been holding an annual two-week summer program dedicated to major current issues in the natural and social sciences, their history and philosophy. The title of the program reflects the heritage of the Vienna Circle** which promoted interdisciplinary and philosophical investigations based on solid disciplinary knowledge.

As an international interdisciplinary program, VISU-SWC brings graduate students in close contact with world-renowned scholars. It operates under the academic supervision of an International Program Committee of distinguished philosophers, historians, and scientists. The program is directed primarily to graduate students and junior researchers in fields related to the annual topic, but the organizers also encourage applications from gifted undergraduates and from people in all stages of their career who wish to broaden their horizon through cross-disciplinary foundational issues in science.

The summer course consists of morning sessions, chaired by distinguished lecturers which focus on reading assigned to students in advance. Afternoon sessions are made up of tutorials by assistant professors for junior students and of smaller groups which offer senior students the opportunity to discuss their own research papers with one of the main lecturers.


“The Institute Vienna Circle. The international Institute Vienna Circle, a nonprofit society founded in Vienna in October 1991, set itself the following goals: first, to document and promote the contributions and development of the "Vienna Circle" in the areas of science and the public; and second, to cultivate and apply logical empiricism, critical rationalism and linguistic analysis in the sense of a scientific philosophy and coordinated with general sociocultural developments.

**The Vienna Circle, a group of about three dozen scientists in Vienna who worked in the areas of philosophy, logic, mathematics, the natural and social sciences, pioneered in the development of analytic (linguistic) philosophy and philosophy of science and may be counted among the most important and most influential trends of thought in the twentieth century.

This modernist movement first became known to the public in 1929. Its core was the so-called "Schlick Circle" centered around Moritz Schlick, a professor of philosophy at the University of Vienna, who was murdered there in 1936 by a student. In particular Friedrich Waismann, Herbert Feigl, Rudolf Carnap, Hans Hahn, Philipp Frank, Otto Neurath, Viktor Kraft, Karl Menger, Kurt Gödel and Edgar Zilsel figured at the meetings in the Boltzmanngasse which Olga Taussky-Todd, Olga Hahn-Neurath, Felix Kaufmann, Rose Rand, Gustav Bergmann and Richard von Mises also attended. There were also occasional guests from abroad, some of them well-known today, such as Hans Reichenbach, Carl G. Hempel, Alfred Jules Ayer, Ernest Nagel, John von Neumann, Willard Van Orman Quine and Alfred Tarski. At the periphery of the Vienna Circle contacts flourished with Ludwig Wittgenstein, Karl R. Popper and Heinrich Gomperz.
A unified scientific understanding of nature was once a widely-accepted aim of science and remains so in more than a few areas of contemporary science. In recent years, however, both the possibility and the advisability of unification have been questioned, with some arguing that pluralism should be prized in the sciences, perhaps for political as well as philosophical reasons. This course will consider questions about unity and plurality in science from a variety of philosophical, historical, and institutional perspectives.

**SPECIFIC TOPICS**

- Theoretical unification in physical science
- Vitalism, materialism, and reductionism in biology
- Relativity, complementarity, and underdetermination: Metaphors of multiplicity in twentieth-century science and philosophy
- The Unity of Science movement and the Vienna Circle
- The organization of scientific research
- Realism, reduction, simplicity, and explanation: Methodological perspectives on unification
MAIN LECTURERS

Don Howard (University of Notre Dame, USA)
Don Howard is Professor of Philosophy and Director of the History and Philosophy of Science Graduate Program at the University of Notre Dame. His research interests include the foundations of physics, the history of nineteenth- and twentieth-century physics, and the history of the philosophy of science.

Co-founder of HOPOS, the History of Philosophy of Science Working Group, contributing editor of The Collected Papers of Albert Einstein (Princeton University Press), and co-editor, with John Stachel, of the Einstein Studies series (Birkhäuser). Howard is currently working on a book on Einstein’s philosophy of science, as well as a study of the institutional history of the philosophy of science in North America in the mid-twentieth century.

Elliott Sober (University of Wisconsin, USA)
Elliott Sober is Hans Reichenbach Professor of Philosophy and Henry Vilas Research Professor at the University of Wisconsin, Madison, USA, where he has taught since 1974. His research is in philosophy of science, especially in the philosophy of evolutionary biology. Sober is a past president of the American Philosophical Association Central Division and a fellow of the American Academy of Arts and Sciences.


GUEST LECTURER

Brigitte Falkenburg (University of Dortmund, Germany)
BOHR’S AND CASSIRER’S NON-EMPIRICIST VIEWS OF QUANTUM THEORY

ASSISTANT LECTURERS

Christopher Hitchcock (California Institute of Technology, Pasadena, USA)
David J. Stump (University of San Francisco, USA)
SUMMARY

Since the nineteenth century, experimental, clinical and anatomical studies of the brain have vastly determined the brain as an organ, in which various psychological qualities are located in different regions. This has resulted in a cerebral topography of man that seeks to decipher man beyond the mind-matter dualism. Thought in itself, perceptions and language, previously issues of philosophy, have now become an object of the life sciences. At the same time, however, models of cognition based on the language of thought have become crucial for the philosophy of mind.

Around the middle of the twentieth century, the brain became conceptualized as a computer, and this led to numerous fruitful research enterprises. More recently, however, the equation between brain and computer has been challenged. One aim of this Summer University is to discuss various shifts in the relation between mind, brain and computation from a historical and epistemological point of view. Moreover, the Summer University will focus on the relation between physiological and mental processes, for example, the relation between low-level vision accounts of color perception and their interaction with theories of visual consciousness.

SPECIFIC TOPICS

- The architecture of the mind: the classicism/connectionism debate
- The history of the cerebral localization of the mind
- Minds and machines in the age of cybernetics
- Metaphors for the brain and its activity
- Reverse optics and the study of color consciousness
- Single cells and cerebral architectures: functional units of the brain in historical perspective
- Information, observation and consciousness in quantum physics.

PARTICIPANTS 2002

MAIN LECTURERS

Michael Hagner (Max Planck Institute for the History of Science, Berlin, Germany)

Michael Hagner is Senior Fellow at the Max Planck Institute for the History of Science in Berlin. His research interests include the history of the neurosciences, the history of experimentation, and the relation between history of science and cultural history.


Brian P. McLaughlin (Rutgers University, USA)

Brian McLaughlin is Professor at Rutgers University, New Brunswick, USA, where he has taught since 1995. His research is in the field of cognitive science, philosophy of mind and analytic philosophy. Several visiting professorships in the United States and Germany.

McLaughlin is co-editor of *Actions and Events: Perspectives on the Philosophy of Donald Davidson* (1985), *Perspectives on Self-Deception* (1988), and editor of *Dretske and His Critics* (1991). He has published many articles in the forementioned areas of research.

GUEST LECTURER

Anton Zeilinger (University of Vienna, Austria)

10. Wiener Kreis Vorlesung / 10th Vienna Circle Lecture as part of VISU: OBSERVER AND REALITY IN QUANTUM PHYSICS

Anton Zeilinger is Professor and Director of the Institute of Experimental Physics at the University of Vienna. He and his group – one of the world’s leading experimental quantum physics research groups – have realized in experiment many fundamental predictions of quantum theory. Among his many awards and prizes are the membership of the German order Pour le Mérite and the Senior Humboldt Fellow Prize.

Zeilinger is author and editor of seminal books and many articles on Quantum Physics, Quantum Information and Quantum Cryptography.

ASSISTANT LECTURERS

Güven Güzeldere (Duke University, Durham NC, USA)

Paul Ziche (Bayerische Akademie der Wissenschaften, Germany)
SUMMARY

Our world is not static, as was the prevailing view in past ages – but dynamic. It evolves. This holds for the large-scale structures in the universe as well as for the bio-molecules. The Summer University 2003 is devoted to the major scientific aspects of cosmological and biological evolution, the key ideas of which originated in the early decades of the previous century.

The theory of general relativity revolutionized our view of the nature of space, time, and gravitation; and the neo-Darwinian synthesis merged genetics with the theory of natural selection. Both fields progressed enormously during the past forty years: the ‘big bang’ theory was dramatically confirmed by the discovery of the cosmic microwave background radiation, and evolutionary biology linked up with genomics. Yet we still do not know the answer to some very basic questions concerning, for instance, the origin of life or the origin and ultimate fate of the universe.

The lectures on cosmological evolution will explain the basic nature of general relativity, describe its implications for cosmology, and address recent developments in theoretical and observational cosmology. The lectures on biological evolution will concentrate on the major transitions, in particular prebiotic evolution, the origins of multi-cellularity, the role of sex and the emergence of social structures. Topics will include the principles of population genetics and ecological modelling, random drift and selection, competition and cooperation, and applications of game theory to population dynamics.
MAIN LECTURERS

Karl Sigmund (University of Vienna, Austria)

Karl Sigmund is professor of mathematics at the University of Vienna. He works on dynamical systems, and in particular on evolutionary game theory, a field which he helped to found, together with his collaborators Josef Hofbauer and Martin Nowak. Sigmund, who was for many years president of the Austrian Mathematical Society and Editor in Chief of the Monatshefte für Mathematik, is a member of the Austrian Academy of Science. Many of his contributions deal with diverse aspects of biomathematics, as for instance population genetics, mathematical ecology, epidemiology and modelling of animal behaviour.

Among his books are Evolutionary Games and Population Dynamics (1998, with Josef Hofbauer) and Games of Life (1995). Sigmund’s main interest centers currently on the evolution of cooperation. He is also actively engaged in the study of the Vienna Circle and the history of mathematics.

Eörs Szathmáry (Eötvös Loránd University, Hungary)

Eörs Szathmáry is professor of biology and head of the Department of Plant Taxonomy and Ecology of Eötvös Loránd University, Budapest. His main interest is theoretical evolutionary biology and focuses on the common principles of the major steps in evolution, such as the origin of life, the emergence of cells, the origin of animal societies, and the appearance of human language. Szathmáry was awarded the New Europe Prize in 1996 by a group of institutes for advanced study, and the Academy Prize 1999 by the Hungarian Academy of Science. He is the President of the International Organisation for Systematic and Evolutionary Biology (IOSEB).

Together with John Maynard Smith, he has published two important books which serve as the main references in the field (The Major Transitions in Evolution, 1995, and The Origins of Life, 1999). Szathmáry serves on the editorial board of several journals; in particular, he is the editor-in-chief of the new journal Selection.

Robert M. Wald (University of Chicago, USA)

Robert Manuel Wald is the Charles H. Swift Distinguished Service Professor of Physics at the University of Chicago. He is a fellow of the American Physical Society and the American Academy of Arts and Sciences, and is a member of the U.S. National Academy of Sciences. His research interests center on general relativity – particularly, the theory of black holes – and extend to cosmology and quantum gravity.


ASSISTANT LECTURER

Daniel Holz (University of California, Santa Barbara, USA)

Daniel Holz is a postdoctoral fellow of the Institute for Theoretical Physics, at the University of California, Santa Barbara. His research has focused on the interface between general relativity and cosmology. This has included extensive work on the effects of gravitational lensing, in addition to a broad array of other projects (ranging from numerical relativity and gravitational wave astrophysics, to cosmological dark matter and random matrix theory).
The importance of objectivity in the biological sciences is underscored by episodes in which external values have misled scientists. But what do we do with cases in which external values seem to have led scientists in the right direction? To address these issues, we will take an in-depth look at the role of natural theology and political economics in the development and reception of Darwin’s theory of evolution by natural selection. Literature will include primary sources in 19th century natural history, natural theology, political economics and philosophy of science; secondary literature on the Darwinian revolution; and contemporary literature on objectivity and the distinction between internal and external values. The aim is primarily to advance our understanding of objectivity in science, but also secondarily to provide students with the resources to teach the Darwinian revolution, and to mine that set of developments for broader philosophical and science studies purposes.

The philosophical question concerning the objectivity of the physical sciences begins in the modern period with Kant’s philosophy of natural science in the late eighteenth century. Kant made the objectivity of human cognition into a central philosophical theme, and he took the Newtonian mathematical physics that dominated the eighteenth century as one of his most important models of objective human knowledge as such. During the nineteenth century, however, a wide variety of new styles of physical theorizing were developed. Scientific philosophers of the nineteenth century, such as Helmholtz, Mach, and Poincaré, responded to these new developments and attempted, accordingly, to extend or modify the Kantian theory of objectivity to accommodate them.

The development of non-Euclidean geometry also played an important role, since Euclidean geometry had provided Newton (and Kant) with an underlying mathematical framework within which physical theory was supposed to be formulated. Finally, the articulation of Einstein’s theories of relativity at the beginning of the twentieth century appeared to undermine the Newtonian and Kantian pictures completely and led, for precisely this reason, to the radically new approach to scientific objectivity constructed by the logical empiricists in Vienna and Berlin. We shall examine these historical developments and then discuss their implications for objectivity in the physical sciences today. In particular, we will look at Kuhn’s Structure of Scientific of Revolutions against this background and discuss the prospects that might emerge for a post-Kuhnian philosophy of scientific objectivity.

The lectures, concerning the quest for objectivity in the social sciences, will consider two kinds of challenge to objectivity ideals. The very attempt to develop scientifically objective accounts of scientific understandings of human life and activity on the model of physics has seemed to undermine conceptions of what it is to be human – capacities of intentionality, deliberation, and self-reflection. Either such knowledge is not possible or what we take to be distinctive features of human life are an illusion. We will critically review the understanding of objectivity that results in this dilemma, focusing on forms of reductionism in biology and economics. Secondly the very possibility of objectivity for any science has been challenged by recent work in social, cultural, and feminist studies of science. We shall critically review the scope and force of these challenges. The conclusion will offer some suggestions towards resolution of both challenges.

PARTICIPANTS 2004

MAIN LECTURERS

John Beatty (University of British Columbia, Canada)

John Beatty teaches history and philosophy of science in the Department of Philosophy at the University of British Columbia in Vancouver. His research focuses on the theoretical foundations, methodology, and sociopolitical dimensions of genetics and evolutionary biology. He co-directs the MBL-Dibner Seminar in the History of Biology, which is held yearly at the Marine Biological Laboratory in Woods Hole, Massachusetts.

His current research projects concern: the atomic age and cold war dimensions of genetics and evolutionary biology in the 1940s–1970s, and the longstanding distinction between the so-called “historical” sciences (e.g., evolutionary biology) and the “exact” or “experimental” sciences. He is a coauthor of The Empire of Chance: How Probability Changed Science and Everyday Life (1995).

Michael Friedman (Stanford University, USA)

Michael Friedman has taught at Harvard University, the University of Pennsylvania, the University of California at Berkeley, the University of Konstanz, the University of Illinois at Chicago, and Indiana University. He moved to Stanford University in 2002 as the first Frederick P. Rehmus Family Professor of Humanities. At Stanford he is also a professor of Philosophy and co-director of the Program in History and Philosophy of Science and Technology. He has held grants and fellowships from the American Council of Learned Societies, the National Science Foundation, the National Endowment for the Humanities, and the John Simon Guggenheim Foundation. He has served as President of the Central Division of the APA and as President of the PSA. He was elected Fellow of the AAAS in 1997, and Membre titulaire de l’Institut international de philosophie in 2000.


Helen Longino (University of Minnesota, USA)

Helen Longino is Professor of Philosophy and Women’s Studies at the University of Minnesota and a member of the Minnesota Center for Philosophy of Science.

She is the author of Science as Social Knowledge (1990) and of The Fate of Knowledge (2001). She has also coedited a number of anthologies in feminist science studies and has published numerous articles in the philosophy of science and in feminist philosophy. Presently she is working on a comparative study of four Approaches in the Sciences of Behavior and, with colleagues C.K. Waters and S. Kellert, is preparing a volume on Scientific Pluralism for the Minnesota Studies in Philosophy of Science.

SPECIAL LECTURE

Helen Longino (University of Minnesota, USA)

12. Wiener Kreis Vorlesung / 12th Vienna Circle Lecture as part of VISU:
PHILOSOPHY OF SCIENCE AFTER THE SOCIAL TURN

I learned a lot from the lecturers and their expertise on the issues under discussion. I was exposed to a rich source of reading materials and ideas which broadened my perspective on the issue of objectivity.

Nilofar Shidmehr
University of British Columbia, Canada
Chance and probability were never purely mathematical topics. In the European tradition, they were full of religious and philosophical significance from at least the period of the Renaissance. Since then they have become increasingly integral to natural science, and at the same time to social, political, medical, and economic affairs. The course surveys this large historical trajectory by focusing on some themes and moments of particular interest and significance.

The lectures attempt to fulfill three tasks: First, they should provide an overview of the topic at hand and its problems. There is a perfect parallel between the case of chance and the case of necessity. To bring out this parallel will be the second task of the course. Moreover, the basic problem has to do with the fact that the objectivity involved in chance and necessity is still poorly understood. A broadly projectivist account of this objectivity appears to be as most revealing. The third task of this course is to give a precise account of the projectivist account of the objectivity of chance and natural necessity.

**SUMMARY**

**SPECIFIC TOPICS**

**Historical** Inquiry into Chance and Necessity
- Subjective and objective probabilities. Probability in the eighteenth century was a guide to right reasoning; statistics in the nineteenth became the science of social collectives.
- Statistical models in the sciences. Physics, physical chemistry, and biology all developed statistical formulations in the late nineteenth and early twentieth centuries. But not without opposition, for statistics challenged some basic ideals of scientific reasoning.
- A universe of chance. Statistics meant the taming of chance, order out of chaos. Ironically, it therefore allowed the recognition of chance and variation in the elementary phenomena of the world.
- In pursuit of objectivity. In the twentieth century, statistics became above all a set of mathematical strategies of scientific inference, which then were linked to canons of experimental design. In this guise, statistics contributed to a reshaping of public policy, and with it, of the public role of the scientist.
- Markets and gambling. Our story circles back to the science of reasoning under uncertainty, which in the later twentieth century has been applied with great ambition to business and investing.

**Systematic** Inquiry into Chance and Necessity
- General introduction into modality
- Subjective probability
- Objective probability: an overview
- David Lewis’ conception of objective probability
- A projectivist reconstrual of this conception
- Objectivist conceptions of natural laws and causation
- Foundations for a subjectivistic account: ranking theory
- A ranking-theoretic account of laws of nature and causation
- How to objectify this account
- The probabilistic-deterministic parallel between chance and necessity

**PARTICIPANTS 2005**

MAIN LECTURERS

Theodore M. Porter (University of California, Los Angeles, USA)

Theodore M. Porter studied history and history of science at Princeton, where he took his Ph.D. in 1981 with a dissertation on the history of statistics. He spent a year as member of a research group on the “probabilistic revolution” at the Center for Interdisciplinary Research (ZiF) of the University of Bielefeld (Germany) in 1982–1983. Since 1991 Porter has been professor of history of science in the Department of History at the University of California, Los Angeles.

His books – The Rise of Statistical Thinking, 1820–1900 (1986), The Empire of Chance (1989), Trust in Numbers (1995), Cambridge History of Science, vol. 7: Modern Social Sciences (2003) – focus on: statistical reasoning penetrating the social and natural sciences, the history and the implications of probability and statistics from the seventeenth century to recent times, the relations of quantification and calculation to an ideal of selfless or impersonal reasoning, and the relation of this mechanical form of objectivity to the societies within which it has flourished. His book, Karl Pearson: The Scientific Life in a Statistical Age (2004), is about the unruly life of the founder of the modern field of statistics, and about the historical vision, philosophical sensibility, and moral ideals that framed this new field for Pearson.

Wolfgang Spohn (University of Konstanz, Germany)

Wolfgang Spohn studied philosophy, logic & philosophy of science, and mathematics at the University of Munich. He acquired his MA in 1973 and his Ph.D. in 1976 and completed his Habilitation in 1984. Until 1985 he was research assistant at the Institute of Philosophy of Science under Wolfgang Stegmüller at the University of Munich and subsequently Fellow at the Wissenschaftskolleg zu Berlin. In 1986 he was appointed professor at the University of Regensburg, and in 1991 he received a chair at the University of Bielefeld. Since 1996 he has held a chair for philosophy and philosophy of science at the University of Konstanz. He has been in charge of various research projects, most notably the DFG research group titled “Logik in der Philosophie”. From 1988–2001 he was editor-in-chief of the journal Erkenntnis.

Many of his papers deal with philosophical logic, epistemology, inductive logic and probability, philosophy of science, in particular the theory of causation and explanation, philosophy of language and mind, decision theory, game theory, and the theory of theoretical and practical rationality in general.

GUEST LECTURER

Maria Carla Galavotti (University of Bologna, Italy)

13. Wiener Kreis Vorlesung / 13th Vienna Circle Lecture as part of VISU: PROBABILITY AND ITS INTERPRETATIONS

ASSISTANT LECTURERS

Deborah Coen (Harvard University, USA)
Franz Huber (University of Konstanz, Germany)
The course deals with some fundamental problems of philosophy and economics, spanning a wide range of topics from ethics to methodology and addressing both substantial and formal, historical and topical issues. This approach shows how broad the field of “Philosophy, Politics, and Economics” has become, as is also reflected in our present interests as philosopher-economists. Alluding to one of John Broome’s titles, we could say that we have both “economics out of philosophy” and “philosophy out of economics”. The course is genuinely interdisciplinary. In addition to material assigned for each lecture, general background material (as a sort of introductory course to “philosophy and economics”) will be provided in electronic form to facilitate an interdisciplinary discussion.

**SPECIFIC TOPICS**

- The economic approach to ethics
- Discounting the future
- Rational choice from a participant’s and from the objective point of view
- Arrow and the economic approach
- Sen and Coase
- Trust, its role and its evolution
- Economising on virtue
- The economy of virtue
- David Hume’s theory of government
- Esteem: conceptual and analytic
- No theory of justice
- Expressive voting
- Public and private responsibility in health care and the limits of state action

The workshop first started with a review on the position of philosophy of economics in the main stream of science and its structure as an interdisciplinary field. This was a very helpful start-up since it clarified the position and the approach toward the subsequent topics ... This discussion gave me an idea about how the interdisciplinary field such as philosophy and economics can be helpful in analyzing and discussing real world problems related to ethical debates.

Hamed Ghoddusi
Institut für Höhere Studien (IHS), Austria

**PARTICIPANTS 2006**

MAIN LECTURERS

Geoffrey Brennan (Duke University, USA)
Geoffrey Brennan, trained as an economist, gradually drifted from public economics to rational actor political theory, and then to political and moral philosophy.
From 2000 to 2005, he was editor of Economics and Philosophy and in 2002–2004 president of the (world) Public Choice Society, the first non-American to be so appointed in the forty-year history of the Society. He co-authored, with Nobel Laureate, James Buchanan, The Power to Tax (1980) and The Reason of Rules (1985); and with Loren Lomasky Democracy and Decision (1993). Two of his books are Democratic Devices and Desires (2000) co-authored with Alan Hamlin; and The Economy of Esteem (2004) with Philip Pettit. He has published more than a hundred articles in refereed journals and some sixty chapters in scholarly monographs. Some of these articles involve collaboration with Hartmut Kliemt. Both Kliemt and Brennan were part of the editing team (with Robert Tollison) of the 20-volume Collected Works of James Buchanan.

Hartmut Kliemt (University of Duisburg, Germany)
His books include Zustimmungstheorien der Staatsrechtfertigung (1980, also in Spanish), Moralische Institutionen, (1985, also in Spanish), Antagonistische Kooperation (1986), Grundzüge der Wissenschaftstheorie. Eine Einführung für Mediziner und Pharmazeuten (1986). A list of publications can be found on the home page of the Philosophy Department of the University of Duisburg-Essen.

GUEST LECTURER

Rainer Hegselmann (Universität Bayreuth, Germany)
14. Wiener Kreis Vorlesung / 14th Vienna Circle Lecture as part of VISU: TRUTH AND COGNITIVE DIVISION OF LABOR – FIRST STEPS TOWARDS A COMPUTER-AIDED SOCIAL EPISTEMOLOGY

ASSISTANT LECTURER

Bernd Lahno (University of Duisburg, Germany)
SUMMARY

In the course of the twentieth century, science became increasingly intertwined with technology and matters of social relevance. As a result, science is viewed today as an essentially practical endeavor. Science and technology appear inextricably interwoven with one another. This development is viewed in many quarters as a fundamental reorientation of science and its relationship with technology. Science in the context of practice is assumed to operate under conditions significantly different from the rules and regulations of traditional academia.

There are three overlapping themes in the course that deal with the topic from a historical, philosophical, and sociological perspective, respectively. The issue involves methodological and epistemological questions concerning research in the service of technological development as well as sociological questions about the institutional characteristics such research acquires. These questions give rise to various contrasts and oppositions such as commissioned research versus research in the public interest, epistemic research versus application-oriented research, research under the aegis of the linear model versus applied research.

SPECIFIC TOPICS

- Consensus
- Dissent
- John Stuart Mill
- Paul Feyerabend
- Consensus conferences
- Case studies:
  - The Great Devonian Controversy
  - Theories of light
  - Expansion of the universe
  - The case of continental drift
  - Recent theories of smell
  - Intelligent design versus natural evolutionism
  - Anthropogenic global warming versus natural climate variability

I found the opportunity to come together with experts and fellows from different areas of different majors, specialties and interests. During our classes and the discussion sessions afterwards, I was keen to grasp some different arguments of different minds and to rouse up my own creativity with the help of such different views, which made me more able to express myself either under an opposing position or in synthesis with them. There was dissent as well as consensus in our programme.

Ilksen Necati Icen
Bogazici University, Turkey

PARTICIPANTS 2001

**Main Lecturers**

Naomi Oreskes *(University of California, San Diego, USA)*

Naomi Oreskes received her B.Sc. (1981) in mining geology at the University of London and her Ph.D. (1990) in geological research and the history of science at Stanford University. She is currently Professor of History at the University of California, San Diego, where her research focuses on the history of methods, practices, and knowledge in the earth and environmental sciences. Her current projects include the role of global politics in shaping the research agenda of 20th century earth science, and the history of the establishment of a scientific consensus on the reality of global warming and its human causes. She has been a consultant to the United States Environmental Protection Agency, the U.S. Nuclear Waste Technical Review Board, and she currently serves on a National Academy of Sciences/National Research Council Committee on the Use of Models in Regulatory Decision-Making.

Miriam Solomon *(Temple University, Philadelphia, USA)*

Miriam Solomon was an undergraduate in Natural Sciences at Cambridge University from 1976–79, eventually specializing in History and Philosophy of Science. She continued with graduate studies in general philosophy, completing a Ph.D. at Harvard University in 1986 with a dissertation on Quine. She is currently Professor of Philosophy at Temple University.

She has published widely in epistemology, philosophy of science, gender and science, ethics of science and philosophy of medicine. Her book, *Social Empiricism* (MIT Press, 2001), is an extended discussion of the place of dissent and consensus in scientific change. Currently, she is working on two projects: the social epistemology of scientific creativity and the epistemic role of consensus conferences in an age of “evidence-based” medicine.

Andrzej Wróblewski *(University of Warsaw, Poland)*

Andrzej Kajetan Wróblewski received his M.Sc. (1955) and Ph.D. (1961) at Warsaw University where he has worked as associate professor (1965–1970) and full professor since 1971. He was research scientist at CERN, Geneva; visiting professor at University of Washington, Seattle, and Siegen University. He has also lectured and given shorter courses at several European and U.S. universities. He holds administration positions in Warsaw. Many Polish and international honours and honorary doctorates.

His publications include more than 200 papers on physics, history of science and administration of science, six books (in Polish) and several hundred popular articles on physics, astronomy, and history of physics.

**Guest Lecturer**

Keith Lehrer *(University of Arizona, Tucson, USA)*

15. Wiener Kreis Vorlesung / 15th Vienna Circle Lecture as part of VISU: CONSENSUS IN ART AND SCIENCE
The field of History and Philosophy of the Biomedical Sciences has become in the recent decade a hot spot in historical research and philosophical debate. The increasing role biomedical sciences play in contemporary societies and individual lives has raised many questions concerning the epistemological and practical status of biology and medicine.

The course will deal with some of the fundamental philosophical problems of biomedical sciences, raised by their historical development since the age of the Scientific Revolution of the 17th century to the very contemporary development in biomedicine, biotechnology and medical practices.

Selected topics of historical and philosophical relevance will be covered, which are at the core of present-day debates and have great relevance for bioethical debates and social and political concerns on the role of biology and medicine in our societies. Particular attention will be devoted to some methodological issues and to the necessary link between historical and philosophical inquiries.

The course will be necessarily trans-disciplinary. Because of its advanced content, general background and introductory material will be distributed to the participants in advance in order to facilitate the discussion and a common reflection on the topics suggested.

SPECIFIC TOPICS

- The epistemological status of medicine
- The Hippocratic tradition, from Hippocrates to the Nineteenth Century
- The origins of scientific medicine (16th–20th centuries)
- The concept of disease: Historical roots and philosophical perspectives
- Causality in biomedical sciences
- An historical and epistemological analysis
- The pragmatics of causation in clinical practice
- The philosophical debate on the normal and the pathological
- The role of the case in medical reasoning
- Error in medicine
- From germs to genes: Theories on generation and infection (16th–20th centuries)
- Form, information, and programmes: The rise of the molecular explanation of life and disease
- Moral issues associated with gene therapy
- Darwinian Medicine: How evolution by natural selection can explain health and disease?
- Historical and epistemological issues associated with animal models in biomedical research
- The social and economical determination of health and disease: The McKeown Thesis
- Historical and epistemological issues in evidence-based medicine

PARTICIPANTS 2008

The problem of pain in the biomedical sciences and comparative perspective on genetics diseases

This type of cross-disciplinary interaction is always particularly fruitful whilst still a bit frustrating. Fruitful because the perspective of the historian is one that is new to me and helps me to see philosophical topics in a new light but also frustrating as it is often difficult to talk across disciplines and have helpful discussions. Nevertheless, I felt that there was generally a good effort to break through disciplinary boundaries at the institute and this was an important key to its success.

Elizabeth Giles
Poznan University of Medical Sciences
Poland
SUMMARY

With the rise of specialized sciences, understood to be autonomous from philosophy, and the rise of philosophical positivism, philosophers and scientists debated among themselves claims for objectivity, realism, and truth in the sciences. They also discussed the roles that scientists and scientific knowledge justifiably play in political systems, social policy, and technological development. As secularism strengthened and religious metaphysics waned, philosophers also began to concern themselves with the scientific standing of philosophy itself. Arguably, the debates about the scientific status of philosophy became the most crucial debates in the historical framing of twentieth-century philosophy. At this same time, however, the specialist sciences increasingly faced challenges to their traditional claims to universal knowledge.

There are three main overlapping themes in the course. One theme concerns crucial aspects of philosophical debates from roughly 1870 to 1950, the alternatives offered, and some lingering consequences for analytic philosophy that arise from its historical relations to scientific philosophy. A second theme concerns the possible replacement of the Enlightenment idea that science delivers the absolutely objective truth by the view that scientific knowledge is perspectival, and the consequences of this view for how contemporary scientists confront religion. A third theme concerns twentieth-century scientists and philosophers of science who sought to sort out questions of the social responsibilities of science, the social dimensions of science, and the truth of scientific claims.

SPECIFIC TOPICS

- Scientific Perspectivism: An Alternative to Objectivist Realism
- Scientific Neo-Kantianism and Positivism in Germany from 1870–1914
- Naturalism, Pragmatism, and Experimentalism in American Philosophy of Science, 1870–1950
- Scientific Realism and Scientific Socialism in France from Belle Epoque to Cold War
- Bernalism and Approaches to the History and Philosophy of Science in Great Britain
- Hierarchy and Intention in Scientific Representation
- "Die wissenschaftliche Weltauffassung": Logical Positivism from Austria and Germany to North America, 1920–1950
- Weimar Berlin and Historical Sources of the View of Science as Social Practice
- Politics and Values in the Philosophy of Science of Polanyi, Popper, and Kuhn
- Science without Laws, Realism w/o Truth, Judgment w/o Rationality
- Analytic Philosophy as Marginal Science
- Contemporary Scientists Confront Religion

PARTICIPANTS 2009

MAIN LECTURERS

Ronald Giere (University of Minnesota, USA)

Ronald N. Giere is Professor of Philosophy Emeritus as well as a member and former Director of the Center for Philosophy of Science at the University of Minnesota. Prof. Giere is a Past President of the Philosophy of Science Association and a member of the editorial board of the journal Philosophy of Science. His current research focuses on agent-based accounts of models and scientific representation, and on connections between naturalism and secularism.


Mary Jo Nye (Oregon State University, USA)

Mary Jo Nye is Emeritus Horning Professor of the Humanities and Professor of History at Oregon State University. She is a former president of the History of Science Society and received the Society’s 2006 Sarton Medal for Lifetime Scholarly Achievement. Her research focuses on the history of the modern physical and chemical sciences, science and politics, and the philosophy of science.


Alan Richardson (University of British Columbia, Canada)

Alan Richardson is Professor of Philosophy and Distinguished University Scholar at the University of British Columbia. His research examines the relations between the history of science and the history of philosophy in the era since Kant. He is currently President of the International Society for History of Philosophy of Science (HOPOS).


GUEST LECTURER

Peter Galison (Harvard University, USA)

17. Wiener Kreis Vorlesung / 17th Vienna Circle Lecture as part of VISU:
THE ASSASSIN OF RELATIVITY – FRIEDRICH ADLER AND ALBERT EINSTEIN

Already Sunday morning before Summer University officially started most of the participants met with a few members of the institute and got small but exclusive tour through the streets and alleys of Vienna. … During the tour most of us struck up conversations with each other. Not only the participants of the VISU took part in this tour. Two of the lecturers were also among the ones who were eager to learn about Vienna.

And they talked with us in a way, that quickly a comfortable atmosphere was created. Soon everybody had the feeling of discussing with them at eyelevel and that they took our questions – which some of us had already during the tour – very seriously. This atmosphere was decisive for the frame of mind among the participants during the next two weeks.

Daniel Bosse
Eberhard Karls Universität, Germany
SUMMARY:

It is commonly held that psychology began to be practiced “scientifically” in Leipzig in 1879. We will examine what this means, what the regulative metaphysical assumptions, constitutive ideas and techniques of a science of the mind were and are. In doing so, we will give a comprehensive overview over the science of mind, covering historical aspects, systematic problems, and empirical findings.

With respect to the historical contexts in which the scientific study of the conscious mind emerged, special attention will be dedicated to the contentious status of empirical psychology in turn-of-the century epistemological debates, leading up to important work of Carnap, Neurath, Feigl, Hempel and other members of the Vienna & Berlin Circles on the status of Geisteswissenschaften, the mind-brain relation, testability, and reduction. This work directly influenced empirical psychology, especially B. F. Skinner’s Radical Behaviourism, which in turn affected the development of work in analytic philosophy of psychology and mind. This foundational philosophical work will also be connected with contemporary issues on neural correlates and neural identities, explanatory gaps, the hard problem(s) of consciousness, the problems of freedom and responsibility, and the prospects for achieving a mature neurophilosophy. Arguments that even a mature science of the mind cannot address certain important topics like the qualia problem will be evaluated from a systematical and a historical perspective. Skeptical positions with respect to the self and free will will be presented as well as experimental work that bears on these issues (i.e. decision making, intentionality, theory of mind, “mirror neurons”). Consequences of philosophical and empirical work for human self-understanding, the legal system, and everyday life will be discussed.

SPECIFIC TOPICS:

- Psychology to be practiced “scientifically”
- Regulative metaphysical assumptions
- Constitutive ideas and techniques of a science of the mind
- Comprehensive overview over the science of mind, covering historical aspects, systematic problems, and empirical findings
- Status of empirical psychology in turn-of-the century epistemological debates
- Vienna & Berlin Circles
- Contemporary issues on neural correlates & neural identities, explanatory gaps, the hard problem(s) of consciousness, the problems of freedom and responsibility, and the prospects for achieving a mature neurophilosophy
- Qualia problem from a systematical and a historical perspective
- The self and free will
- Experimental work that bears on decision making, intentionality, theory of mind, “mirror neurons”
- Consequences of philosophical and empirical work for human self-understanding, the legal system, and everyday life

PARTICIPANTS 2010


Katherine Hartling
University of California at Berkeley, USA

My experience at VISU was one of the most valuable events in my academic career. After studying philosophy at the graduate level and becoming familiar with advanced work in the field, I am firm in my decision to continue my studies in Philosophy. And I believe that in the years to come, I will look back on this program as an integral step in my hopes as an aspiring philosopher.
MAINT LECTURERS

Uljana Feest (Technische Universität Berlin, Germany)
Uljana Feest is Assistant Professor at the Institute for Philosophy, Philosophy of Science, History of Science and Technics of the Technische Universität (TU), Berlin. Her areas of specialization are philosophy of scientific experimentation, philosophy of psychology & neuroscience, history of 19th and 20th century philosophy of science and the history of the human sciences.


Owen Flanagan (Duke University, USA)
Owen Flanagan is James B. Duke Professor of Philosophy and Professor of Psychology and Neuroscience at Duke University. His work is in the philosophy of psychology, mind, ethics, and comparative philosophy. He has lectured on every continent except Antarctica.


Michael Pauen (Humboldt-Universität zu Berlin, Germany)
Michael Pauen is Professor of Philosophy at the Humboldt-Universität zu Berlin and academic director of the Berlin School of Mind and Brain. His research focuses on the philosophy of mind and on the relation between philosophy and neuroscience.


GUEST LECTURER

J. Allan Hobson (Harvard Medical School, USA)
REM SLEEP AND DREAMING: TOWARDS A THEORY OF PROTOCONSCIOUSNESS
SUMMARY

Concern with clear and demonstrable evidence resides at the heart of modern culture and its systems of knowledge. Every well-established group of practitioners seems to have a clear sense of what they count as good evidence, but when we look for a general characterization of evidence and its probative force, answers are difficult to come by. Philosophers, historians, jurists and scientists have all made serious investigations into the nature of evidence. Still, there is neither a widely agreed-upon theory nor a general rule of evidence that applies universally.

In this course we will explore various notions of evidence in various domains of theory and practice. Our program is distinctive in three ways. First, we will provide a broad multi-disciplinary inquiry into the nature of evidence, employing the combined resources of philosophy, psychology and history. Second, we will take a detailed look at the philosophical and historical contexts of various concepts of evidence in science, medicine and law. Third, we will make a sustained effort to link up abstract concepts and questions with concrete practices and moments.

SPECIFIC TOPICS

• Philosophical theories of evidence and their problems
• Cognitive approaches to evidential reasoning
• Causal models in evidential reasoning
• Legal theories of evidence and their evolution
• Probabilistic and statistical handling of evidence
• Evidence reasoning in medicine
• Evidence for public policy and public consumption
• Professionalization, quantification and standardization of evidence
• Evidence, authority and commitment
• Social and moral dimensions of evidence
• Evidence in scientific practice

The summer school has already managed to establish a reputation for interdisciplinary teaching, in memory of “Der Wiener Kreis”… Last but not least, we would like to end with a personal note for the speakers, organisers and other attendees: “Vielen Dank fuer diese wunderschoene Zeit zusammen!”

Laszlo Kosolosky
Ghent University, Belgium

PARTICIPANTS 2011

Hasok Chang (University of Cambridge, UK)

Hasok Chang is Hans Rausing Professor of History and Philosophy of Science at the University of Cambridge. He received his Ph.D. in philosophy from Stanford University. From 1995 to 2010 he taught at the Department of Science and Technology Studies at University College London. Most of his research falls into two broad categories: general philosophy of science and the history and philosophy of the physical sciences from the 18th century onward. He is a co-founder of the Society for Philosophy of Science in Practice, a founding member of the International Committee for Integrated History and Philosophy of Science, and an Associate Editor of the British Journal for the History of Science. He is the author of *Inventing Temperature: Measurement and Scientific Progress* (Oxford University Press, 2004), which was a co-winner of the 2006 Lakatos Award, and *Is Water H2O? Evidence, Realism and 7 Pluralism* (Springer), as well as a number of articles on topics ranging from the philosophy of quantum mechanics to the history of logical positivism. He is also co-editor (with Catherine Jackson) of *An Element of Controversy: The Life of Chlorine in Science, Medicine, Technology and War* (British Society for the History of Science, 2007).

Tal Golan (University of California, San Diego, USA)


David A. Lagnado (University College London, UK)

David A. Lagnado is Senior Lecturer at the Division of Psychology & Language Sciences, University College London. He completed his Ph.D. in philosophy at University College London. His research focuses on the psychological processes that underlie human learning, reasoning and decision-making.


Philip Dawid (University of Cambridge, UK)

EVIDENCE, INFERENCE AND ENQUIRY: TOWARDS AN INTEGRATED SCIENCE OF EVIDENCE
In the course of the twentieth century, science became increasingly intertwined with technology and matters of social relevance. As a result, science is viewed today as an essentially practical endeavor. Science and technology appear inextricably interwoven with one another. This development is viewed in many quarters as a fundamental reorientation of science and its relationship with technology. Science in the context of practice is assumed to operate under conditions significantly different from the rules and regulations of traditional academia.

There are three overlapping themes in the course that deal with the topic from a historical, philosophical, and sociological perspective, respectively. The issue involves methodological and epistemological questions concerning research in the service of technological development as well as sociological questions about the institutional characteristics such research acquires. These questions give rise to various contrasts and oppositions such as commissioned research versus research in the public interest, epistemic research versus application-oriented research, research under the aegis of the linear model versus applied research.

SPECIFIC TOPICS

- Nationalism, Commercialism, and Popularization (1750–1840)
- Utilitarianism, Positivism, and Victorian Society (1840–1900)
- The Professionalization of Science, Logical Empiricism, and the Rhetoric of Pure Science (1900–1950)
- Beyond 2000: A Reassessment of the Concept of Science in the Public Interest
- Values and Objectivity in Science
- Theories for Use: The conceptual structure of research in the context of application
- On the Question Dynamics of Research: Modes of Finding and Losing Research Topics in Science and Technology
- Science in the Grip of the Economy? Conditions of application-oriented research
- Epistemic and Social Conditions of Scientific Expertise
- Knowledge, Politics and Commerce: The ethical dimension
- The self-referential direction of research
- Institutional patterns for basic and applied research
- Origins of the linear model and the innovation paradigm
- National Innovation Systems – the concept, comparative perspective
- Science funding or innovation policy?
MAIN LECTURERS

Martin Carrier (University of Bielefeld, Germany)

Martin Carrier is Professor of Philosophy at Bielefeld University. He received his Ph.D. in philosophy from the University of Münster and earned his habilitation at the University of Konstanz. His chief area of work is the philosophy of science, in particular, historical changes in science and scientific method, theory-ladenness and empirical testability, intertheoretic relations and reductionism, and presently methodological issues of application-oriented research. Carrier is a member of the “German Academy of Science Leopoldina,” the “Mainz Academy of Sciences, Humanities and Literature,” and the “Academia Europaea.” He was awarded the Leibniz Prize of the German Research Association (DFG) for 2008.


Rose-Mary Sargent (Merrimack College, USA)

Rose-Mary Sargent is Professor of Philosophy at Merrimack College and editor-in-chief of HOPOS: The Journal of the International Society for the History of Philosophy of Science. She earned her Ph.D. in Philosophy from the University of Notre Dame. Her research focuses on experimental practices from the 17th century to the present. Currently she is working on a study of Francis Bacon’s vision of how experimental science would lead to useful knowledge that would advance the common good and how the inherent tensions within this program were revealed as subsequent generations attempted the pursuit of science in the public interest.

In addition to numerous articles, she is the author of The Diffident Naturalist: Robert Boyle and the Philosophy of Experiment (University of Chicago Press 1995), and editor of Selected Philosophical Works of Francis Bacon (Hackett 1999).

Peter Weingart (University of Bielefeld, Germany)

Peter Weingart is Professor Emeritus of Sociology (sociology of science and science policy) at Bielefeld University, Germany. He was director of the Institute for Science and Technology Studies (IWT) and director of the Institute of Interdisciplinary Research (ZiF 1988–1994). He is a member of the Berlin-Brandenburg Academy of Sciences and the Academy of Engineering Sciences (acatech) in Germany.

He is managing editor of the Yearbook Sociology of the Sciences and since 2008 he is editor-in-chief of Minerva. He has published numerous articles and books in the sociology of science and science studies, among them Metaphors and the Dynamics of Knowledge (with S. Maassen, Routledge 2000), Die Stunde der Wahrheit? (Velbrück Wissenschaft 2001), Die Wissenschaft der Öffentlichkeit (Velbrück Wissenschaft 2005).

http://warrior.merrimack.edu/academics/liberal_arts/philosophy/MeetFacultyStaff/Pages/fac_RSargent.aspx

http://www.uni-bielefeld.de/iwt/personen/weingart/
VISU-SWC 2001–2011

VISU 2001
Unity and Plurality in Science
Main Lecturers: Don Howard (University of Notre Dame)
Elliott Sober (University of Wisconsin)
Guest Lecturer: Brigitte Falkenburg (University of Dortmund)
Asst. Lecturers: Christopher Hitchcock
(University of California Institute of Technology)
David J. Stump (University of San Francisco)

VISU 2002
Mind and Computation
Main Lecturers: Michael Hagner
(Max Planck Institute for the History of Science, Berlin)
Brian P. McLaughlin
(Rutgers University, New Brunswick)
Guest Lecturer: Anton Zeilinger
(University of Vienna)
Asst. Lecturers: Güven Güzeldere
(Duke University)
Paul Ziche
(Bayerische Akademie der Wissenschaften)

VISU 2003
Biological and Cosmological Evolution
Main Lecturers: Karl Sigmund
(University of Vienna)
Robert M. Wald
(University of Chicago)
Eörs Szathmáry
(Eötvös Loránd University)
Asst. Lecturer: Daniel Holz
(University of California, Santa Barbara)

VISU 2004
The Quest for Objectivity
Lecturers: John Beatty
(University of British Columbia)
Michael Friedman
(Stanford University)
Helen Longino
(University of Minnesota)

VISU 2005
Chance and Necessity
Main Lecturers: Theodore M. Porter
(University of California, Los Angeles)
Wolfgang Spohn
(University of Konstanz)
Asst. Lecturers: Deborah Coen
(University of California)
Franz Huber
(University of Konstanz)

VISU 2006
Philosophy and Economics
Main Lecturers: Geoffrey Brennan
(Duke University)
Hartmut Kliemt
(University of Duisburg)
Guest Lecturer: Rainer Hegselmann
(University of Bayreuth)
Asst. Lecturer: Bernd Lahno
(University of Duisburg)

VISU 2007
Consensus in Science
Main Lecturers: Naomi Oreskes
(University of California, San Diego)
Miriam Solomon
(Temple University, Philadelphia)
Andrzej Wróblewski
(Warsaw University)
Guest Lecturer: Keith Lehrer
(University of Arizona, Tucson)

VISU 2008
History and Philosophy of the Biomedical Sciences
Main Lecturers: Rachel A. Ankeny
(University of Adelaide)
Bernadino Fantini
(University of Geneva)
David Wootton
(University of York)
Guest Lecturer: Keith Wailoo
(Rutgers University)

VISU 2009
The Culture of Science and its Philosophy
Main Lecturers: Ronald Giere
(University of Minnesota)
Mary Jo Nye
(Oregon State University)
Alan Richardson
(University of British Columbia)
Guest Lecturer: Peter Galison
(Harvard University)

VISU 2010
The Science of the Conscious Mind
Main Lecturers: Uljana Feest
(Technische Universität Berlin)
Raimond Flanigan
(Duke University)
Michael Pauen
(Humboldt-Universität zu Berlin)
Guest Lecturer: J. Allan Hobson
(Harvard Medical School)

VISU 2011
The Nature of Scientific Evidence
Main Lecturers: Hasok Chang
(University of Cambridge)
Tai Golan
(University of California, San Diego)
David Lagnado
(University College London)
Guest Lecturer: Philip Dawid
(University of Cambridge)

PREVIEW
VISU 2012
Applied Science.
Historical, Epistemological, and Institutional Characteristics
Main Lecturers: Martin Carrier
(University of Bielefeld)
Rose-Mary Sargent
(Merrimack College)
Peter Weingart
(University of Bielefeld)

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