TUM-IAS Fellows

Hans Fischer Senior Fellows (27)

(Fellowship duration: 3 years)

Prof. Silvio Aime | University of Torino
Host: Prof. Markus Schwaiger | Clinic for Nuclear Medicine, TUM

Prof. Anuradha M. Annaswamy | MIT
Host: Prof. Sandra Hirche | Automatic Control Engineering, TUM

Prof. Yasuhiko Arakawa | University of Tokyo
Host: Prof. Gerhard Abstreiter | Experimental Semiconductor Physics, TUM

Prof. Polly Arnold | University of Edinburgh
Host: Prof. Fritz Kühn | Molecular Catalysis, TUM

Prof. Gerhard Beutler | University of Bern
Host: Prof. Reiner Rummel | Astronomical and Physical Geodesy, TUM

Prof. Douglas Bonn | University of British Columbia
Host: Prof. Johannes Barth | Molecular Nanoscience and Chemical Physics of Interfaces, TUM

Prof. Robijn Bruinsma | University of California, UCLA
Host: Prof. Andreas Bausch | Molecular and Cellular Biophysics, TUM

Prof. Matthew Campbell | University of Texas at Austin
Host: Prof. Kristina Shea | Product Development, TUM

Prof. Richard Davis | Columbia University
Host: Prof. Claudia Klüppelberg | Mathematical Statistics, TUM

Prof. Daniel Gianola | University of Wisconsin-Madison
Host: Prof. Chris-Carolin Schön | Chair of Plant Breeding, TUM

Prof. Markus Hegland | Australian National University
Host: Prof. Hans-Joachim Bungartz | Scientific Computing, TUM

Prof. Gino Isidori | Frascati National Laboratories
Host: Prof. Andrzej Buras | Particle Physics, TUM

Prof. Frank Kschischang | University of Toronto
Host: Prof. Gerhard Kramer | Institute for Communications Engineering, TUM

Prof. Walter Kucharczyk | University of Toronto
Host: Prof. Tim Lüth | Micro Technology and Medical Device Technology, TUM

Prof. Michael Ortiz | California Institute of Technology
Host: Prof. Wolfgang A. Wall | Computational Mechanics, TUM

Prof. Stefan Pokorski | University of Warsaw
Host: Prof. Andrzej Buras | Particle Physics, TUM

Prof. Wolfgang Porod | University of Notre Dame
Host: Prof. Paolo Lugli | Nanoelectronics, TUM

Prof. Stanley Riddell | University of Seattle
Host: Prof. Dirk Busch | Medical Microbiology, Immunology and Hygiene, TUM

Prof. Bert Sakmann | MPI for Neurobiology, Martinsried
Host: Prof. Arthur Konnerth | Neuroscience, TUM

Prof. Peter Schröder | California Institute of Technology
Host: Prof. Rüdiger Westermann | Computer Graphics and Visualization, TUM

Prof. Shuit-Tong Lee | City University of Hong Kong
Host: Prof. Martin Stutzmann | Experimental Semiconductor Physics, TUM

Prof. Tim Sparks | Anglia Ruskin University, Cambridge
Host: Prof. Annette Menzel | Ecoclimatology, TUM

Prof. Mandayam A. Srinivasan | MIT
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

Prof. Raman I. Sujith | Indian Institute of Technology Madras
Host: Prof. Wolfgang Polifke | Thermodynamics, TUM

Prof. David A. Weitz | Harvard University
Host: Prof. Andreas Bausch | Molecular and Cellular Biophysics, TUM

Prof. Christian Werthmann | Harvard University
Host: Prof. Regine Keller | Landscape Architecture and Open Space, TUM

Prof. Zohar Yosibash | Ben-Gurion University
Host: Prof. Ernst Rank | Computation in Engineering, TUM

Hans Fischer Tenure Track Fellows (2)

(Fellowship duration: 5 years)

Prof. Hendrik Dietz | Biomolecular Nanotechnology, TUM
Host: Prof. Andreas Bausch | Molecular and Cellular Biophysics, TUM

Prof. Thomas Misgeld | Neuroscience, TUM
Host: Prof. Arthur Konnerth | Neuroscience, TUM

Carl von Linde Senior Fellows (9)
(Fellowship duration: 3 years)

Prof. Gerhard Abstreiter | Experimental Semiconductor Physics, TUM

Prof. Andrzej Buras | Particle Physics, TUM

Prof. Axel Haase | IMETUM, TUM

Prof. Horst Kessler | Organic Chemistry and Biochemistry, TUM

Prof. Claudia Klüppelberg | Mathematical Statistics, TUM

Prof. Ingrid Kögel-Knabner | Soil Science, TUM

Prof. Arthur Konnerth | Neuroscience, TUM

Prof. Reiner Rummel | Astronomical and Physical Geodesy, TUM

Prof. Ulrich Stimming | Interfaces and Energy Conversion, TUM

Carl von Linde Junior Fellows (16)
(Fellowship duration: 3 years)

Dr. Wilhelm Auwärter
Host: Prof. Johannes Barth | Molecular Nanoscience and Chemical Physics of Interfaces, TUM

Dr. Vladimir García Morales
Host: Prof. Katharina Krischer | Interfaces and Nonlinear Dynamics, TUM

Dr. Martin Gorbahn
Host: Prof. Andrzej Buras | Particle Physics, TUM

Prof. Adrian Jäggi
Host: Prof. Reiner Rummel | Astronomical and Physical Geodesy, TUM

Dr. Alexandra Kirsch
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

Dr. Kolja Kühnlenz
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

Prof. Dongheui Lee
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

Dr. Julia Kunze-Liebhäuser
Host: Prof. Ulrich Stimming | Interfaces and Energy Conversion, TUM

Dr. Miriam Mehl
Host: Prof. Hans-Joachim Bungartz | Scientific Computing, TUM

Dr. Angelika Peer
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

Dr. Marco Punta
Host: Prof. Burkhard Rost | Bioinformatics, TUM

Dr. Ulrich Rant
Host: Prof. Gerhard Abstreiter | Experimental Semiconductor Physics, TUM

Dr. Ian Sharp
Host: Prof. Martin Stutzmann | Experimental Semiconductor Physics, TUM

Prof. Robert Stelzer
Host: Prof. Claudia Klüppelberg | Mathematical Statistics, TUM

Dr. Christian Stemberger
Host: Prof. Dirk Busch | Medical Microbiology, Immunology and Hygiene, TUM

Dr. Dirk Wollherr
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

Rudolf Diesel Industry Fellows (7)

(Fellowship duration: 3 years)

Dr. Matthias Heller | CASSIDIAN Air Systems, EADS Deutschland GmbH
Host: Prof. Florian Holzapfel | Flight System Dynamics, TUM

Dr. Tsuyoshi Hirata | Nippon Shokubai Ltd., Japan
Host: Prof. Johann Plank | Construction Chemicals, TUM

Prof. Khaled Karrai | Attocube
Host: Prof. Paolo Lugli | Nanoelectronics, TUM

Dr. Chin Man Mok | AMEC Geomatrix Engineering in Oakland, California
Host: Prof. Daniel Straub | Engineering Risk Analysis, TUM

Dr. Dragan Obradovic | Siemens
Host: Prof. Sandra Hirche | Automatic Control Engineering, TUM

Prof. Gernot Spiegelberg | Siemens
Host: Prof. Alois Knoll | Robotics and Embedded Systems, TUM

Dr. Georg von Wichert | Siemens
Host: Prof. Martin Buss | Automatic Control Engineering, TUM

ERC Grant Awardees

Starting Grants

Prof. Andreas Bausch | Chair for Molecular & Cellular Biophysics, TUM
Project: CompNet

Prof. Daniel Cremers | Computer Vision and Pattern Recognition Group, TUM
Project: CONVEXVISION

Prof. Hendrik Dietz | Department of Experimental Biophysics, TUM
Project: DNA ORIGAMI DEVICES

Prof. Karl-Ludwig Laugwitz | Cardiology, TUM University Hospital Klinikum rechts der Isar
Project: CHD-IPS

Prof. Franz Pfeiffer | Chair of Biomedical Physics, TUM
Project: X-Ray Bioimaging

Prof. Stephan A. Sieber | Chair for Organic Chemistry II, TUM
Project: ANTIBACTERIALS

Prof. Eckehard Steinbach | Chair for Media Technology, TUM
Project: ProHaptics

Dr. Pierre Thibault | Chair of Biomedical Physics, TUM
Project: OPTIMAX

Prof. Annette Menzel | Chair of Ecoclimatology, TUM
Project: E3

Prof. Florian Greten | Medical Clinic and Policlinic (Gastroenterology), TUM
Project: ROSCAN

Advanced Grants

Prof. Ulrich Heiz / Prof. Ulrich Boesl-von Grafenstein | Chair for Physical Chemistry, TUM
Project: ASC3

Prof. Vasilis Ntziachristos | Chair for Biological Imaging, TUM
Project: MSOT

Prof. Johannes Barth | Chair for Experimental Physics, TUM
Project: MolArt

Prof. Andrzej Buras | Chair for Theoretical Physics IV, TUM
Project: FLAVOUR

Prof. Martin Buss | Institute of Automatic Control Engineering, TUM
Project: SHRINE

Prof. Rüdiger Westermann | Computer Graphics and Visualization, TUM
Project: SaferVis

Prof. Christian Pfleiderer | Institute of Experimental Physics E21, TUM
Project: Topological Spin Solitons for Information Technology

Gottfried Wilhelm Leibniz Prizewinner

2011
Prof. Franz Pfeiffer | Chair of Biomedical Physics, TUM

2012
Prof. Barbara Wohlmuth | Chair of Numerical Mathematics, TUM

Alexander von Humboldt Awardees

Humboldt Professors

Prof. Hans-Arno Jacobsen | University of Toronto, Department of Electrical and Computer Engineering & Department of Computer Science, Canada
Technische Universität München: Information System

Prof. Gerhard Kramer | University of Southern California, Department of Electrical Engineering, USA
Host: Prof. Joachim Hagenauer | Institute for Communications Engineering, TUM

Prof. Burkhard Rost | Columbia University, Department of Biochemistry and Molecular Biophysics, New York, USA
Host: Prof. Wolfgang A. Herrmann | TUM President

Prof. Matthias Tschöp | University of Cincinnati, School of Medicine, Division of Endocrinology, Diabetes and Metabolism, USA
Technische Universität München: Professorship for Insulin Resistance

Humboldt Research Awardees / Honorary Hans Fischer Senior Fellows

Prof. Constance Chang-Hasnain | University of California, Department of Electrical Engineering and Computer Sciences, Berkeley, USA
Host: Prof. Markus-Christian Amann | Computational Science, TUM

Prof. Chang Wen Chen | State University of New York at Buffalo, USA
Host: Prof. Eckehard Steinbach | Electrical Engineering and Information Technology, TUM

Prof. William A. Eaton | National Institutes of Health, National Institute for Diabetes and Digestive and Kidney Diseases, Bethesda, USA
Host: Prof. Thomas Kiefhaber | Chair of Biophysical Chemistry, TUM

Prof. Charles M. Elliott | University of Warwick, Department of Mathematics, Coventry, UK
Host: Prof. Karl-Heinz Hoffmann | Chair for Applied Mathematics, TUM

Prof. Ben L. Feringa | University of Groningen, Department of Chemistry, Netherlands
Host: Prof. Thorsten Bach | Chemistry Department, Chair for Organic Chemistry, TUM

Prof. M. G. Finn | Scripps Research Institute, Department of Chemistry, La Jolla, USA
Host: Prof. Horst Kessler | Chair in Organic Chemistry and Biochemistry, TUM

Prof. Brian C. Freeman | University of Illinois at Urbana-Champaign, Department of Cell and Developmental Biology, USA
Host: Prof. Johannes Buchner | Chair in Biotechnology, TUM

Prof. Gregory Fu | Massachusetts Institute of Technology, Department of Chemistry, USA
Host: Prof. Thorsten Bach | Chemistry Department, Chair for Organic Chemistry, TUM

Prof. Yoshihisa Inoue | Osaka University, Department of Applied Chemistry, Graduate School of Engineering, Japan
Host: Prof. Thorsten Bach | Department of Organic Chemistry, TUM

Prof. Roberta L. Klatzky | Carnegie Mellon University, Department of Psychology, Pittsburgh, USA
Host: Prof. Martin Buss | Institute of Automatic Control Engineering, TUM

Prof. Andre Longtin | University of Ottawa, Center for Neural Dynamics, Physics Department, Canada
Host: Prof. J. Leo van Hemmen | Theoretical Biophysics, TUM

Prof. Marc Noy | Universitat Politecnica de Catalunya, Department of Applied Mathematics, Barcelona, Spain
Host: Prof. Anusch Taraz | Center of Mathematics M9, TUM

Prof. Gottfried Otting | Australian National University, Research School of Chemistry, Canberra
Hosts: Prof. Steffen Glaser, Prof. Michael Sattler | Department of Chemistry, TUM

Prof. Antonio Pich Zardoya | Universidad de Valencia, Instituto de Fisica Corpuscular, Edifici d´Instituts de Paterna, Spain
Hosts: Prof. Andrzej J. Buras, Prof. Nora Brambilla | Physics Department, TUM

Prof. George D. Rose | Johns Hopkins University, Department of Biophysics, Baltimore, USA
Host: Prof. Thomas Kiefhaber | Department of Biophysical Chemistry, TUM

Prof. Andreas S. Schulz | Massachusetts Institute of Technology, Cambridge, USA
Host: Prof. Peter Gritzmann | Department of Mathematics, TUM

Prof. Devarajan Thirumalai | University of Maryland at College Park, Institute for Physical Science and Technology, USA
Host: Prof. Matthias Rief | Molecular & Cellular Biophysics, TUM

TUM Distinguished Affiliated Professors

Natural Sciences/Mathematics

Prof. Ugo Amaldi | CERN, Geneva/Switzerland

Prof. Gerhard Ertl | Fritz Haber-Institut MPG, Berlin

Prof. Robert Grasselli | University of Delware, Wilmington/USA

Prof. Martin Grötschel | Konrad Zuse-Zentrum für Informationstechnik, Berlin

Prof. Fracis Halzen | University of Wisconsin-Madison, Madison/USA

Prof. Regine Kahmann | Max Planck Institute for Terrestrial Microbiology, Marburg Biology/Center of Life and Food Sciences, Weihenstephan

Prof. Klaus von Klitzing | Max Planck Institute for Solid State Research, Stuttgart

Prof. Rudolph A. Marcus | California Institute of Technology, Pasadena/USA

Prof. Tobin Marks | Northwestern University, Evanston/USA

Prof. Sidney I. Resnick | Cornell University, Ithaca/USA

Prof. Ronald D. Ruth | Stanford University, Stanford/USA

Prof. Masahiro Watanabe | University of Yamanashi, Kofu/Japan

Engineering Sciences/Computer Science

Prof. Leon O. Chua | University of California, Berkeley/USA

Prof. Wan Gang | Minister of Science and Technology of the People`s Republic of China, Peking/China

Prof. Eveline Gottzein | Universität Stuttgart, Höhenkirchen

Prof. Helmut Jahn | Murphy/Jahn, Inc., Chicago/USA

Prof. Wolfgang Kröger | ETH Zürich, Zurich/Switzerland

Prof. James L. Massey | ETH Zürich (Prof. Emeritus), Copenhagen/DK

Prof. Yoshihiko Nakamura | University of Tokyo, Tokio/Japan

Prof. Lawrence C. Paulson | University of Cambridge, Cambridge/UK

Prof. Dieter Rams | Kronberg im Taunus

Prof. August-Wilhelm Scheer | Universität des Saarlandes, Saarbrücken

Prof. Albert Speer jun. | AS&P – Albert Speer & Partner GmbH, Frankfurt a.M.

Medicine / Life Sciences

Prof. Adriano Aguzzi | Universitätsspital Zürich, Zürich/Switzerland

Prof. Fridtjof Nüsslin | Universität Tübingen (Prof. Emeritus), Munich

Humanities and Social Sciences/Economics

Prof. Jutta Allmendinger | Wissenschaftszentrum Berlin für Sozialforschung, Berlin

Prof. Jürgen Mittelstraß | Universität Konstanz, Constance, TUM School of Education

Prof. Helga, Nowotny | European Research Council, Vienna/Austria, TUM School of Education

Prof. Ortwin Renn | Universtiät Stuttgart, Stuttgart, TUM School of Education

Prof. Londa Schiebinger | Stanford University, Stanford/USA, TUM School of Education

Prof. Mitchell M. Tseng | Hong Kong University of Science and Technology, Hong Kong/China, TUM School of Management

Prof. Elke Weber | Columbia University, New York/USA, TUM School of Management

TUM-IAS Focus Groups

Advanced Cardiac Mechanics Emulator
Prof. Michael Ortiz | California Institute of Technology
Host: Prof. Wolfgang A. Wall | Computational Mechanics, TUM
Doctoral candidate: Andreas Nagler

Advanced Computation
Prof. Matthew Campbell | University of Texas
Host: Prof. Kristina Shea | Product Development, TUM
Prof. Peter Schröder | California Institute of Technology
Host: Prof. Rüdiger Westermann | Computer Graphics and Visualization, TUM
Doctoral candidates: Jan Stühmer, Amir Hooshmand, Corinna Königseder

Advanced Construction Chemicals and Materials
Dr. Tsuyoshi Hirata | Nippon Shokubai, Ltd., Japan
Host: Prof. Johann Plank | Construction Chemicals, TUM
Doctoral candidate: Alex Lange

Advanced Stability Analysis
Prof. Raman I. Sujith | Indian Institute of Technology Madras
Host: Prof. Wolfgang Polifke | Thermodynamics, TUM
Doctoral candidates: Ralf Blumenthal, Sebastian Bomberg

Aircraft Stability and Control
Dr. Matthias Heller | CASSIDIAN Air Systems, EADS Deutschland GmbH
Host: Prof. Florian Holzapfel | Flight System Dynamics, TUM
Doctoral candidate: Markus Geiser

Biochemistry
Prof. Horst Kessler | Chemistry, TUM

Biomedical Engineering
Prof. Axel Haase | TUM
Host: Prof. Markus Schwaiger | Clinic for Nuclear Medicine, TUM
Prof. Walter Kucharczyk | University of Toronto
Host: Prof. Tim Lüth | Micro Technology and Medical Device Technology, TUM
Doctoral candidates: Thomas Gaaß, Marika Kuschan

Biophysics
Prof. Robijn Bruinsma | University of California, UCLA
Prof. Hendrik Dietz | TUM
Prof. David A. Weitz | Harvard University
Host: Prof. Andreas Bausch | Molecular and Cellular Biophysics, TUM
Doctoral candidates: Thomas Gerling, Heinrich Grabmayr

Clinical Cell Processing and Purification
Prof. Stanley Riddell | University of Seattle
Dr. Christian Stemberger | TUM
Host: Prof. Dirk Busch | Medical Microbiology, Immunology and Hygiene, TUM
Doctoral candidate: Jeannette Bet, Paulina Paszkiewicz
Postdoctoral researcher: Dr. Stefan Dreher

Cognitive Technology
Prof. Dongheui Lee | TUM
Dr. Alexandra Kirsch | TUM
Dr. Kolja Kühnlenz | TUM
Dr. Angelika Peer | TUM
Prof. Mandayam A. Srinivasan | MIT
Dr. Georg von Wichert | Siemens, Munich
Dr. Dirk Wollherr | TUM
Host: Prof. Martin Buss | Automatic Control Engineering, TUM;
Prof. Michael Beetz | Computer Science, TUM
Doctoral candidates: Barbara Gonsior, Michael Karg, Christina Lichtenthäler, Andreas Schmid, Bernhard Weber, Liu Ziyuan

Computational Biology
Dr. Marco Punta | TUM
Host: Prof. Burkhard Rost | Bioinformatics, TUM

Computational Biomechanics
Prof. Zohar Yosibash | Ben-Gurion University, Israel
Host: Prof. Ernst Rank | Computation in Engineering, TUM
Doctoral candidate: Hagen Wille

C-H Activation Chemistry
Prof. Polly Arnold | University of Edinburgh
Host: Prof. Fritz Kühn | Molecular Catalysis, TUM

Fiber-Optic Communication and Information Theory
Prof. Frank Kschischang | University of Toronto
Host: Prof. Gerhard Kramer | Institute for Communications Engineering, TUM

Fundamental Physics
Dr. Martin Gorbahn | TUM
Prof. Gino Isidori | Frascati National Laboratories
Prof. Stefan Pokorski | University of Warsaw
Host: Prof. Andrzej Buras | Particle Physics, TUM
Doctoral candidate: Emmanuel Stamos
Postdoctoral researcher: Dr. Luca Merlo, Dr. Robert Ziegler

Global Change
Prof. Tim Sparks | Coventry University
Host: Prof. Annette Menzel | Ecoclimatology, TUM

Doctoral candidates: Anna Bock, Julia Laube
Postdoctoral researcher: Dr. Nicole Estrella, Dr. Christian Zang

High-Performance Computing (HPC)
Prof. Markus Hegland | Australian National University
Dr. Miriam Mehl | TUM
Host: Prof. Hans-Joachim Bungartz | Scientific Computing, TUM
Doctoral candidates: Christoph Kowitz, Valeriy Khakhutskyy

Metropolis Nonformal
Prof. Christian Werthmann | Harvard University
Host: Prof. Regine Keller | Landscape Architecture and Public Space, TUM

Molecular Imaging
Prof. Silvio Aime | University of Torino
Host: Prof. Markus Schwaiger | Clinic for Nuclear Medicine, TUM

Networked Dynamical Systems
Prof. Anuradha M. Annaswamy | MIT
Dr. Dragan Obradovic | Siemens, Munich
Host: Prof. Sandra Hirche | Automatic Control Engineering, TUM
Doctoral candidates: Arman Kiani, Herbert Mangesius, Harald Voit

Neuroscience
Prof. Thomas Misgeld | TUM
Prof. Bert Sakmann | MPI for Neurobiology, Martinsried
Host: Prof. Arthur Konnerth | Neuroscience, TUM
Doctoral candidate: Rita Förster

Satellite Geodesy
Prof. Gerhard Beutler | University of Bern
Prof. Adrian Jäggi | University of Bern
Host: Prof. Reiner Rummel | Astronomical and Physical Geodesy, TUM
Doctoral candidate: Weiyong Yi

Soil Architecture
Prof. Ingrid Kögel-Knabner | TUM
Postdoctoral researcher: Dr. Geertje Pronk

Statistical and Quantitative Genomics
Prof. Daniel Gianola | University of Wisconsin-Madison
Host: Prof. Chris-Carolin Schön | Plant Breeding, TUM

Risk Analysis

Engineering Risk Analysis
Dr. Chin Man W. Mok | AMEC Geomatrix, Inc., Oakland, California
Host: Prof. Daniel Straub | Engineering Risk Analysis, TUM
Doctoral candidate: Wolfgang Betz

Risk Analysis and Stochastic Modeling
Prof. Richard Davis | Columbia University
Prof. Robert Stelzer | TUM
Host: Prof. Claudia Klüppelberg | Mathematical Statistics, TUM
Doctoral candidates: Martin Moser, Oliver Pfaffel, Christina Steinkohl, Florian Ueltzhöfer

Energy and Electromobility

Diesel Reloaded
Prof. Gernot Spiegelberg | Siemens AG, Munich
Host: Prof. Alois Knoll | Robotics and Embedded Systems, TUM
Doctoral candidates: Claudia Buitkamp, Ljubo Mercep, Hauke Stähle

Molecular Aspects in Interface Science
Dr. Julia Kunze-Liebhäuser | TUM
Host: Prof. Ulrich Stimming | Interfaces and Energy Conversion, TUM
Doctoral candidates: Norbert Kluy, Celine Rüdiger, Christoph Traunsteiner

Nanoscience

Functional Nanosystems
Prof. Shuit-Tong Lee | City University of Hong Kong
Dr. Ian Sharp | TUM
Host: Prof. Martin Stutzmann | Experimental Semiconductor Physics, TUM
Doctoral candidates: Matthias Sachsenhauser

Nanoimprint and Nanotransfer
Prof. Khaled Karrai | Attocube Systems AG, Munich
Prof. Wolfgang Porod | University of Notre Dame
Host: Prof. Paolo Lugli | Nanoelectronics, TUM
Doctoral candidates: Edgar-Otto Albert, Mario Bareiß, Armin Exner, Qingqing Gong, Muhammad Imtaar, Klaus Thurner, Anandi Yadav

Nanophotonics
Prof. Yasuhiko Arakawa | University of Tokyo
Dr. Ulrich Rant | TUM
Host: Prof. Gerhard Abstreiter | Experimental Semiconductor Physics, TUM
Doctoral candidates: Matthias Firnkes, Stephan Funk, Markus Schuster, Alexander Schwemer, Thomas Zabel
Postdoctoral researcher: Dr. Ilaria Zardo

Nanoscale Control of Quantum Materials
Dr. Willi Auwärter | TUM
Prof. Douglas Bonn | University of British Columbia
Host: Prof. Johannes Barth | Molecular Nanoscience and Chemical Physics of Interfaces, TUM
Doctoral candidate: Wolfgang Krenner

Nonequilibrium Statistical Mechanics at the Nanoscale
Dr. Vladimir García Morales | TUM
Host: Prof. Katharina Krischer | Interfaces and Nonlinear Dynamics, TUM
Doctoral candidate: Lennart Schmidt

Major Results that would not have occurred without TUM-IAS

This is a partial list of major highlights and scientific results achieved by Focus Groups at TUM-IAS.

Risk Analysis and Stochastic Modelling

- Champions: Klüppelberg, Stelzer, Davis
- Method: modeling of random phenomena changing over time by non-Gaussian stochastic processes and developing statistical inference methods
- Results: new understanding of the behavior of markets, energy production by wind turbines, new methods of risk analysis, control of catastrophes; foundational theoretical work relevant for the use of Lévy based models
- Importance: Finance, Insurance, Signal Processing, Stochastic Turbulence Modelling, Stochastic Control, New Models and Methods for non-Gaussian Space-Time Phenomena

DFG grant „Statistics of Levy-driven Models“ over 2 years ca. 125k€

W3 Professorship at University of Ulm to Robert Stelzer at the age of 30!

Through Prof. Davis development of co-operation Columbia University/TUM/Lamont-Doherty Earth Observatory at Columbia

Successful draft proposal for the Graduate School Risk and Security proposed for the Excellence Initiative II, coordinated by Prof. Klüppelberg. A long term formal cooperation between TUM and MIT on this field is being planned which arose from the contact of Prof. Klüppelberg with Prof. Sanjoy Mitter (TUM-IAS Visiting Fellow).

Establishment of a yearly Workshop at TUM “Statistical Methods and Models” to bring together researchers in different fields using state-of-the-art statistical methods, offering a platform of discussion and collaboration within TUM.

Very close co-operation with DTU on statistical analysis of turbulence with respect to wind energy problems (DTU/RISOE) – Strengthening of the European University Alliance of Science and Engineering.

“Safety Management System zur Verbesserung der Flugsicherheit (SaMSys II)”, participation of Prof. Klüppelberg in this project at the chair of Prof. Holzapfel (contact established via the TUM-IAS) (3.4 Mio.€ for 3 years) 50% financed by Lufthansa, 50% by the Federal Ministry of Economics and Technology. Begin planned for July 2012 upon positive evaluation.

Submission of a ERC Advanced Grant Proposal “Statistical Modelling of Non-Gaussian Complex Dynamic Processes – Finance, Energy and Engineering Risk” in

2011 by Prof. Klüppelberg. (prompted by the success and contact to Prof. Buras, via TUM-IAS)

Understanding neurons through in vivo observation

- Champions: Konnerth, Sakmann, Misgeld
- Methods: development of new approaches for in vivo measurements of functioning neurons
- Results: include first steps toward a cortical wiring diagram in vivo with single synapse resolution and new insights into mechanisms of axonal propagation
- Importance: besides new approaches and major new insights into basic mechanisms of neuronal function, contributions toward the treatment of neurological diseases (MS, ALS, Alzheimer's disease)

Establishment of the EU-financed ERA-Net Neuron consortium '2-photon imaging', ca. 800k€ for 4 years, Prof. Konnerth, Prof. Misgeld, Prof. Yosef Yarom (IAS Visiting Fellow).

Successful evaluation and approval for a second funding period (2011-2015) of the DFG-Graduiertenkolleg 1373 'Brain signaling: from neurons to circuits', Speaker Prof. Konnerth

Co-coordination of the successful cluster draft proposal SyNergy – Munich Cluster for Systems Neurolog by Prof. Misgeld. Funding fur TUM 10-15 Mio. € over 5 years (plus overhead).

Additional support from the AvH (400k€) for Prof. Misgeld to match the TUM-IAS funds made available.

Development of intense co-operations with the Marine Biological Laboratory (Woods Hole). Funding obtained from US Foundations (Dana Foundation, Christopher and Dana Reeve Foundation) of ca. 300k€.

Establishment of a cooperation with Prof. Daniel Kerschensteiner (Washington University St. Louis, via a TUM-IAS Visiting Fellowship). This project will receive NIH-R01 funding on the US side soon and is being funded on Prof. Misgelds group as a part of the SFB596.

New clinical Cell Treatments

- Champions: Busch, Riddell, Stemberger
- Methods: combination of the Riddell/Busch methodology for cell selection and function enhancement with the development of highly selective new cell purification methods in Munich
- Results: new clinical treatments of cancer/infections
- Importance: very promising new technique can revolutionize treatments

A true example of complementary expertise, assembling a group of scientists with the expertise to simultaneously advance the field technically and be capable of evaluating advances in the clinic. Although this focus group is only active since 1 year, the work performed has already garnered international attention and several leading groups are interested to apply this cell purification technology in their research and clinical cell therapy applications. Collaboration with the group of Prof. Misgeld has been established via the IAS.

Understanding Emotional Intelligence

- Champions: Wollherr, Kühnlenz, Buss
- Method: formal understanding and description of “feelings”
- Results: how a robot can understand feelings of people in its environment
- Importance: man-machine interface seen as the most promising robot technique of the future

Joint (Kühnlenz, Wollherr as Principal Investigator) EU FP7 STREP Project „ IURO-Interactive Urban Robot “ coordinated by TUM (1.5 Mio€ for 3 years)
ERC starting grant (Kühnlenz) “Robot Perception and Control with Camera Skins – ROCCAS” passed selection step 1, in this step, the demonstration of scientific independence and support by the home institution is crucial and Kühnlenz status of independent Carl von Linde Junior Fellow was instrumental for success.

Establishment of a collaboration with the group of Prof. Lugli in visual sensor skins on sensor level (contact established via the IAS).

Organization of the Phi-Bot Workshops 2010, 2011 on Philosophy and Robotics for discussion of future implications and design guidelines of robots entering daily lives of humans. (Together with Prof. Mainzer CvL Academy, contact established via the IAS).

Participation as Principal Investigator (Kühnlenz) in the Munich Bernstein Center of Computational Neuroscience (BCCN) providing a link between BCCN and groups of cognitive sciences, computer science and engineering and particularly the excellence cluster “CoTeSys”.

The distribution of mass on Earth

- Champions: Beutler, Jäggi, Rummel
- Method: the TUM-IAS team is pioneering new concepts of satellite-based geodesy
- Results: major technological results (concept of highly sensitive gravitation measurements in the satellite under very adverse conditions), development of the numerical method for the inverse problem: orbit to global Earth gravitational field.
- Importance: essential data for accurate estimation of the behavior of the Earth.

Bringing together (TUM-IAPG and University of Bern-AIUB) two complementary fields of expertise, which are essential to the best possible gravity field recovery from the new generation of satellites mission.

IAS allowed Rummel to devote his undivided attention to the scientific exploitation of the GOCE mission and providing leadership to the GOCE/HPF (High Level Processing Facility) consortium. High visibility/prestige project for TUM.
Joint proposal IAPG/AIUB to DFG/SNF is under preparation (0.6 Mio. €)

DFG Priority program 1257 projects “Sea Surface Topography and Mass transport of the Antarctic Circumpolar Current “ and “Improving Ocean Tides by Constraining the Dynamic HAMTIDE model with altimetry and GRACE data” (ca. 100k€)

“Observation of the System Earth from Space” as part of the R&D program GEOTECHNOLOGIEN of the German Federal Ministry of Education and research (BMBF) (Total volume 5.7 Mio. €)

Biochemistry: Drug discovery, spider silk protein investigation

- Champion: Kessler
- Method: systematic development of new drugs and medicinal devises based on functionalizing peptides and peptidomimetics.
- Application of NMR to biologically relevant problems. NMR investigation of proteins and their interaction partners
- Results: peptides and non-peptides with improved activity, selectivity and bioavailability for cell attachment (biomaterials) and cancer imaging. Elucidation of important mechanisms in spider silk formation and stability
- Importance: a new class of drugs, development of personalized medicine, rational drug design. Contribution for the successful synthesis of spider silk, with threads as strong as steel but as flexible as rubber.

The Carl von Linde Senior Fellowship has allowed Kessler to continue doing research after 2008. Since beginning of his Fellowship, he has published over 49 scientific papers (in Journals such as Nature, Angew. Chem. , Mol. Cell, PNAS, EMBO Reports, C. Eur. J, Chem. Comm., JACS etc), having a h-factor of 71. Member of the Excellence Cluster CIPS

Novel methods of Bone Modeling

- Champions: Yosibash, Rank
- Method: numerical simulation of (human) bones, based on a multilayer model, new numerical techniques and experimental verification. Development of a new numerical technique, the "Finite Cell Method".
- Results: massive improvement in bone strength prediction accuracy
- Importance: essential components in treatment of bone diseases by allowing surgeons to accurate gauge treatment effect

Multidisciplinary research (Mathematics, Engineering, Clinical). A DFG proposal is in an advanced state of preparation involving statistics and uncertainty quantification (Prof. Ankerst, Prof. Straub, TUM), clinical relevance and experimentation (Dr. Burgkart, Prof. Keyak UC Davis) and computation (Prof. Rank TUM, Prof. Yosibash TUM/BGU). 'Validated patient-specific bone simulation with uncertainty quantification for specific clinical applications (working title)

Strong interaction with the IGSSE via the project: "Computational Steering for orthopaedics"

DFG Proposal 'Electro-thermo-mechanical modeling of Field Assisted Sintering Technology using high-order finite elements validated by experiments'. Participants: Prof. Hartmann, Universität Clausthal, Prof. Düster, TUHH, Prof. Rank, TUM, Prof. Frage, BGU, Prof. Yosibash, BGU. Funding for 2 years ca. 800k€.

New quantum field theory models for fundamental Interactions of Quarks and Leptons

- Champions: Buras, Gorbahn, Isidori, Pokorski
- Method: development of new methods for physics at shortest distance scales
- Results: identification of special characteristics of a multitude of extensions of the standard model in flavour violating processes.
- Importance: these results and methods are basic for the development of the theory of flavour and its tests in high energy and high precision experiments in the coming years

4th most cited particle theorist in Europe and most cited flavour physicist world-wide. ERC Advanced Grant “Towards the construction of the Theory of Flavour”, 1.6 Mio.€ 2011-2016 (Buras).
High publishing activity, more than 100 citations we collected by four papers in less than a year, a very high score in fundamental physics.

New semiconductor lasers and nanophotonic devices

- Champions: Abstreiter, Arakawa
- Method: enhanced light emission from silicon using two dimensional photonic crystals with point-defect photonic nano cavities or III-V nanowires on silicon
- Goal: Silicon based lasers paving the way towards CMOS-compatible optical signal transmission
- Importance: pioneering a new way of ultra high speed signal processing on chips

Arakawa is world leading expert in artificial quantum dot lasers. The project is combining Munich expertise in integrated photonics fabrication with laser design expertise from Tokyo. Establishment of strong collaborations with the Center of Excellence “NanoQuine” in Japan
Strong project in the NIM cluster. The Carl von Linde Senior Fellowship allows Prof. Abstreiter to set up the newly created Center for Nanotechnology and Nanomaterials (WSI-ZNN) fully operational and to develop it with its state-of-the-art shared technology and nanoanalytics facilities to an important institution within TUM and making it very attractive for researchers from all over the world to spend some time in this stimulating environment.

Biosensors based on nanophotonics

- Champions: Rant, Abstreiter
- Method: grafting short DNA molecules on microelectrodes on a chip, and actuating them dynamically by electric fields. Sensing the molecular switching motion to analyze the binding and properties of target proteins, e.g. antibodies.
- Results: a high-information-content bio-sensor platform.
- Importance: bio sensing is vital to understand the interactions of molecules such as for instance medically relevant proteins and pharmaceutical drugs.

Efforts have successfully been made to create a spin-off company, aiming to commercialize a novel type of biosensor platform to detect and analyze biomolecular interactions on a chip (switchSENSE system).

This had the support of Fujitsu Laboratories Ltd., EXIST Forschungstransfer (BMWi) with 380 k€ (July 2009-April 2011), TUM-IGSSE, and will be supported with 2.3 Mio€ (July 2011-June 2013) start-up funding from BMBF within the program GO-Bio under the title “Gründungsvorhaben zur Kommerzialisierung der switchSENSE Technologie, einer Chip-basierten Plattform zur effizienten Analyse von Proteinen”.

Further, a cooperation with the group of Prof. Dietz was established via the IAS, combining the expertise on organic nanostructures (DNA origami, Dietz) and inorganic nanostructures (artificial nanopores, Rant).

Here are examples of a few more unique co-operations made possible by TUM-IAS:

A new combined NMR – tele-surgery tool and treatment

- Champions: Kucharczyk, Lüth
- Method: a robot that combines an MRI scanner with an ultra sound (tele-) ablation tool, allowing the ablation of a prostate cancer directly under MRI supervision
- Result: a fundamentally new surgical treatment for some prostate cancers, and possibly other cancers too
- Importance: the treatment greatly reduces operational risks, patient morbidity and discomfort.

The stay at TUM-IAS allowed Kucharczyk to develop the new ideas on which the instrument is based. Presently the project continues with the exploration of combined MRI-PET imaging machines.

Nanoimprint and Nanotransfer

- Champions: Lugli, Karrai, Porod
- Method: nanotransfer printing (ntP) and nanoimprint litography (NIL)
- Result: a series of novel fabrication and patterning techniques for the realization of innovative devices at the nanoscale
- Importance: economical production of novel nanoscale devices

New activities in the field of infrared, chemical and biological sensors as well as in photocatalysis that would not have been possible without the formation of this group with its complementary expertise and the support of the IAS (Hans Fischer Fellows, PhD students and instrumentation). An additional start-up funding has allowed an innovative work on Carbon nanotube (CNT) Networks . Students of

Electrical Engineering and Physics have had the possibility to carry out experiments using CNT networks and accessing the instrumentation in a series of Lab offers at the Institute for Nanoelectronics.

Submission of a Marie Curie Initial Training Network on “Organic Biosensors”. The TUM contribution is fully based on biosensors utilizing CNT networks. (Total volume 4.2 Mio € for 4 years, TUM share 1.2 Mio€). The results will be known in Mai 2011.
DFG project “Elektrokatalytische Aktivität definierter Nanostrukturen, die mittels Nanoimprint Lithographie hergestellt werden”, together with the IAS Carl von Linde Senior Fellow Prof. Stimming.

DARPA project „NanoMagnet Logic“ (Headed by Hans Fischer Senior Fellow Prof. Porod, partners TUM, UC Berkeley, IBM, Grandis) together with the Institute for Technical Electronics (Prof. Schmitt Landsiedel, recipient of IAS start-up funding for the development of a Magnetic Force Microscope for direct observation of magnetic switching events).
SFB short proposal submitted “Charge and energy transfer at material interfaces”, in May will be known if a full proposal should be submitted.

DFG project in cooperation with Prof. Stimming “Elektrokatalytische Aktivität definierter Nanostrukturen, die mittels Nanoimprint Lithographie hergestellt werden“, this is a direct outcome of the IAS focus group, which will extend the focus to the critical field of energy.

Teaching by Prof. Porod within the courses of “Nanotechnology” and “Nanoelectronics” in 2010 and 2011. Several TUM students were offered the possibility to complete their Master or Diploma work in the University of Notre Dame (Porod) or Attocube (the company of the Rudolf Diesel Fellow Karrai).
Development and testing of a novel miniature nanoimprint machine which is made available to the excellence cluster NIM.

TUM-IAS Start-up Funding

2008

- *Molecular Tissue Analysis*

Prof. Karl-Friedrich Becker, Prof. Heinz Höfler | Institute for Pathology, TUM

- *Vision in Quadrocopters*

Prof. Florian Holzapfel | Institute of Flight System Dynamics, TUM
Prof. Alois Knoll | Robotics and Embedded Systems, TUM

- *STED microscope*

Prof. Andreas Bausch | Biophysics, TUM
Prof. David Weitz | Harvard University

2009

- *Scanning Tunneling Spectroscopy*

Prof. Johannes Barth |Molecular Nanoscience and Chemical Physics of Interfaces, TUM
Prof. Douglas Bonn |University of British Columbia

- *Telehaptics for Nanoassembly*

Prof. Mandayam Srinivasan | MIT
Andreas Schmid |Institute of Automatic Control Engineering, TUM

- *Imaging System*

Prof. Thomas Misgeld, Prof. Arthur Konnerth, Prof. Bert Sakmann | Neuroscience, TUM

- *Technology Push*

Prof. Klaus Diepold | Institute for Data Processing, TUM
Steven D. Edelson | Shadow Laboratories, USA

- *Understanding Complex Biological Systems*

Prof. Chris-Carolin Schön Plant Breeding | TUM Center for Life and Food Sciences, Weihenstephan

2010

- *Watching a Single Protein Molecule Fold in a Cellular Environment*

Prof. Matthias Rief | Biophysics, TUM

- *Nanomagnetic Computing*

Prof. Doris Schmitt-Landsiedel | Technical Electronics, TUM

- *Electrochemistry Research in Energy Conversion and Storage*

Dr. Julia Kunze-Liebhäuser | Physics Department, TUM

- *Biaxial Tension Test Machine*

Prof. Wolfgang A. Wall | Computational Mechanics, TUM

Exploratory Workshops and Events

This section presents workshops and events that are financially supported by TUM-IAS. In addition, most of the events were organized or co-organized by TUM-IAS.

2007

- November 29 - 30, 2007 (two days): Liesel Beckmann Symposium on *Gender & Diversity in the Technical Culture*
  Organizers: TUM-IAS and TUM Gender Center

2008

- April 10 – 11, 2008 (two days): Workshop on *Accessibility – measurement, modelling and evaluation*
  Organizers: TUM-IAS and TUM Institute of Transportation

- June 12-13, 2008 (two days): Workshop on *Risk Modeling and High Frequency Data*
  Organizers: TUM-IAS Fellows Prof. Claudia Klüppelberg, Dr. Robert Stelzer, and Humboldt Research Awardee Prof. Jean Jacod

- September 23 - 26, 2008 (four days): Workshop on *Earth System Engineering – The Art of Dealing Wisely with the Planet Earth*
  Organizers: TUM-IAS and Prof. Peter Wilderer

- November 27 - 28, 2008 (two days): Liesel Beckmann Symposium on *Gender in Medicine*
  Organizers: TUM-IAS and TUM Gender Center

2009
Inaugural Lectures

- *Digital Geometry Processing*
  Speaker: TUM-IAS Hans Fischer Senior Fellow, Prof. Peter Schröder, Dept. of Computer Science, Caltech, Pasadena

- *Computational Bone Mechanics: A patient-specific combined engineering/clinical treatment approach*
  Speaker: TUM-IAS Hans Fischer Senior Fellow, Prof. Zohar Yosibash Head Computational Mechanics Lab, Dept. of Mechanical Engineering, Ben-Gurion University, Beer-Sheva, Israel

- *Nanoelectronics Research at Notre Dame*
  Speaker: TUM-IAS Hans Fischer Senior Fellow, Prof. Wolfgang Porod, Notre Dame University

- *Are the high-temperature superconductors semi-metals?*
  Speaker: TUM-IAS Hans Fischer Senior Fellow, Prof. Douglas Bonn University of British Columbia, Department of Physics and Astronomy

Events

- April 23–24, 2009 (two days): TUM-IAS General Assembly

- April 26–May 1, 2009 (6 days): Workshop on *New Physics, Flavors and Jets*
  Organizers: TUM-IAS Fellow Prof. Andrzej Buras, Prof. Gerhard Buchalla (LMU), Dr. Andre Hoang (MPI), and Prof. Thomas Mannel (Siegen University)

- May 8, 2009 (one day): Workshop on *Advances in Risk Analysis and Stochastic Modeling*
  Organizers: TUM-IAS Focus Group Risk Analysis and Stochastic Modeling

- May 14, 2009 (one day): Workshop on *Challenges and Opportunities of V2X-Communication*
  Organizer: TUM Chair of Traffic Engineering and Control

- June 8, 2009 (one day): Workshop on *The Gordion knot in environmental water science: predictions of water cycles and water quality in (human) environmental systems of intermediate complexity*
  Organizers: TUM-IAS and Prof. Peter Wilderer

- July 12–18, 2009 (7 days): German-French Summer University on *The Future of Mobility*
  Organizers: TUM (Prof. Gebhard Wulfhorst; Spatial Structure and Transportation Planning) and the Laboratoire d'Economie des Transports (LET)/Ecole Nationale des Travaux Publics de l'Etat (ENTPE)

- July 26– 31, 2009 (6 days): 11th International Fischer-Symposium on *Microscopy in Electrochemistry*
  Organizers: TUM-IAS Fellows Prof. Ulrich Stimming and Dr. Julia Kunze-Liebhäuser

- October 18– 20, 2009 (three days): Conference on *The Impact of Control: Past, Present, and Future*
  Organizers: TUM-IAS Fellow Prof. Anuradha Annaswamy, TUM-IAS Host Prof. Martin Buss, and the very active involvement of the IEEE Control System Society

- October 22, 2009 (one day): Symposium on *Darwin's Impact on Technology*
  Organizers: TUM-IAS and Carl von Linde-Akademie

- November 26, 2009 (one day): Liesel Beckmann Symposium on *Gender in Teaching*
  Organizers: TUM-IAS and TUM Gender Center

2010
Inaugural Lectures

- *Fundamental Physics*
  Speakers:
  Carl von Linde Senior Fellow, Prof. Andrzej Buras
  Carl von Linde Junior Fellow, Dr. Martin Gorbahn
  Hans Fischer Senior Fellow, Prof. Gino Isidori
  Hans Fischer Senior Fellow, Prof. Stefan Pokorski

- *Tackling the Multi-Challenge - Multi-Physics*
  Speaker: Carl von Linde Junior Fellow, Dr. Miriam Mehl
  Dept. of Computer Science, TUM

- *Estimating Structural Breaks in Time Series*
  Speaker: Hans Fischer Senior Fellow, Prof. Richard A. Davis
  Department of Statistics, Columbia University

- *Infinite Divisible Stochastic Processes*
  Speaker: TUM-IAS Visiting Fellow, Prof. Jan Rosinski
  Department of Mathematics, University of Tennessee

- *Challenges and Structure of Multidimensional Problems*
  Speaker: Hans Fischer Senior Fellow, Prof. Markus Hegland
  Mathematical Sciences Institute, Australian National University, Canberra

- *Clinical Cell Processing*
  Speakers:
  Host, Prof. Dirk Busch
  Hans Fischer Senior Fellow, Prof. Stanley Riddell
  Carl von Linde Junior Fellow, Dr. Christian Stemberger

- *Modeling Product Architecture with Graph Theory and Graph Transformation*
  Speaker: Hans Fischer Senior Fellow, Prof. Matthew I. Campbell
  Dept. of Mechanical Engineering, University of Texas at Austin

- *Magnetic Resonance Imaging Physics: Where will the future take us?*
  Speaker: Carl von Linde Senior Fellow, Prof. Axel Haase
  IMETUM (Zentralinstituts für Medizintechnik), TUM

Events

- February 1, 2010 (one day): Workshop on *Statistical Methods and Models*
  Organizers: TUM-IAS Carl von Linde Senior Fellow, Prof. Claudia Klüppelberg and TUM-IAS Start-up Funding Recipient, Prof. Chris-Carolin Schön

- March 24, 2010 (one day): Lecture on *The Algebra of Fast Transforms: Banded Matrices with Banded Inverses*
  Keynote speaker: Visiting Fellow, Prof. Gilbert Strang (MIT)

- March 25, 2010 (one day) *Ohm Lecture*
  Keynote speaker: Visiting Fellow, Prof. Gilbert Strang (MIT)

- April 8, 2010 (one day) Workshop on *Peptides as Drugs*
  Keynote speakers:
  Prof. Chaim Gilon (Hebrew University Jerusalem) on *Conversion of Peptides and Active Regions in Proteins into Drug Leads*
  Visiting Fellow, Prof. Victor J. Hruby (University of Arizona) on *The Chemistry of Human Behavior*

- April 11-13, 2010 (three days): TUM-IAS General Assembly
  The second TUM-IAS General Assembly took place at Hotel Schloss Berg at Lake Starnberg and brought together the TUM-IAS community including TUM-IAS Fellows, Board of Trustees members, the Advisory Council, TUM-IAS Hosts, and doctoral candidates directly connected to the activities of the Institute. The TUM-IAS wants to foster an active community of scientists based on dialogue and communication. By organizing the General Assembly TUM-IAS gives its members the possibility to meet, to exchange ideas and to learn about each others' research. Fellows of the Institute presented their research projects, with an emphasis on what they viewed as the main research issues in their respective fields

  Keynote speakers:
  Hans Fischer Senior Fellow, Prof. Walter Kucharczyk on *"Novel Imaging Guidance Methods for Excisionless Tumor Diagnosis and Treatment"*
  Carl von Linde Junior Fellow, Dr. Julia Kunze-Liebhäuser on *"Electrochemistry Research in Energy Conversion and Storage – from Fundamentals to Nanotechnology Applications"*
  Hans Fischer Senior Fellow, Prof. Peter Schröder on *"Geometric Modeling: From Entertainment to Engineering"*

- May 3-5, 2010 (three days): Workshop on *Waiting for the LHC: Electroweak and Flavour Dynamics*
  Organizer: TUM-IAS Focus Group Fundamental Physics

- June 18-19, 2010 (two days): Symposium on *Synapses Twenty Ten*
  Organizer: Carl von Linde Senior Fellow, Prof. Arthur Konnerth; symposium on the occasion of Prof. Josef Dudel's 80th birthday

- June 23, 2010 (one day): Conference on *Earth System Engineering: Methods for Sustainable Solutions of Global Crisis*
  Organizers: TUM –IAS, Carl von Linde-Akademie, International Expert Group on Earth System Preservation (IESP)

- June 28, 2010 (one day): Workshop on *Information-Based Analysis and Design of Networked Control Systems*
  Organizers: TUM-IAS Focus Group Networked Dynamical Systems, and DFG funded priority program SPP1305

- June 30 - July 4, 2010 (five days): Jacques-Monod-Conference on *Imaging Brain Circuits in Health and Disease*
  Chairman: Carl von Linde Senior Fellow, Prof. Arthur Konnerth

- July 19 – 23, 2010 (five days): *TÜV Süd Stiftung Student-Workshop*
  Organizer: TÜV Süd Stiftung Visiting Professor, Prof. Steven D. Glaser

- July 21-22, 2010 (two days): TUM-IAS Summer Seminars
  Speaker: Visiting Fellow, Prof. Leon Chua (University of California, Berkeley, USA) on *"Memristor Brains and Minds"* and *"Nonlinear Dyamics: Perspective on Wolfram's New Kind of Science"*

- September 8-9, 2010 (two days): International Symposium on *Frontiers of Nanoelectronics*
  Organizers: TUM-IAS, TUM Institute for Nanoelectronics (Prof. Paolo Lugli, Prof. Peter Russer), and Fraunhofer Research Institution for Modular Solid State Technologies (EMFT) (Prof. Karlheinz Bock)

- September 16, 2010 (one day): Lecture on *Pattern-Based Control - Basic Ideas and Application to Power Systems for Dynamic Learning Control of Unknown Systems via Partial Models Learned in Prior Experiences*
  Keynote speaker: Visiting Fellow, Prof. David J. Hill (Australian National University)

- September 17, 2010 (one day): Lecture on *Theory of Force-Induced Ligand-Receptor Unbinding*
  Keynote speaker: Hans Fischer Senior Fellow, Prof. Robijn Bruinsma (University of California, Los Angeles)

- October 3-6, 2010 (four days): *3rd International Workshop on Cellular and Molecular Mechanisms of Axon Degeneration*
  Organizers: TUM-IAS Focus Group Neuroscience, and Prof. Martin Kerschensteiner (LMU)

- October 5, 2010 (one day): *Annual Meeting Synbreed* (Open Science Session)
  Organizer: TUM-IAS Start-up Funding Recipient, Prof. Chris-Carolin Schön

- October 7-9, 2010 (three days): Conference on *Flavor Physics: Strong Dynamics, Rare Decays and New Phenomena*
  Organizers: TUM-IAS Focus Group Fundamental Physics

- October 12, 2010 (one day): Lecture on *Quantum Dots with Photonic Crystal Nanocavity for Nanophotonic Application*
  Speaker: Hans Fischer Senior Fellow, Prof. Yasuhiko Arakawa (University of Tokyo)

- October 13, 2010 (one day): Lecture on *Robots and the Human*
  Speaker: Visiting Fellow, Prof. Oussama Khatib (Stanford University, USA)

- October 21, 2010 (one day): TUM-IAS Building Opening Celebration

- October 22, 2010 (one day): TUM-IAS Symposium on *Energy and Electromobility – Exploring the Fundamental Research Challenges*

- October 25-26, 2010 (two days): International Symposium on *Advances in Nanoscience*
  Organizers: TU-IAS, Nanosystems Initiative Munich (NIM), Center for Nanotechnolgy and Nanomaterials (ZNN; Walter Schottky Institute)

- November, 3-4, 2010 (two days): Workshop on *Bone Simulations, Experimentations and their Applications in Clinical Practice*
  Organizers: TUM-IAS Focus Group Computational Bio-Mechanics (Prof. Ernst Rank, TUM; Prof. Zohar Yosibash, Ben-Gurion University)

- November 12, 2010 (one day): Lecture on *Systems Theory: a Retrospective and Prospective Look*
  Speaker: Visiting Fellow, Prof. Sanjoy Mitter (MIT, USA)

- November 18, 2010 (one day): Symposium *Risiken, Krisen, Katastrophen: Wie lassen sich Extremereignisse beherrschen?*
  Organizers: TUM-IAS, Carl von Linde-Akademie, Deutsches Museum

- November 25, 2010 (one day): Beckmann Symposium on *Gender in Management Studies*
  Organizers: TUM-IAS and TUM Gender Center

- December 7, 2010 (one day): lecture on *Who knew!? Health Advancing Discoveries for Women*
  Speaker: Visiting Fellow, Prof. Jerilynn Prior (University of British Columbia, Canada)

2011
Inaugural Lectures

- *Exploring Functional Molecules on Surfaces*
  Speaker: Carl von Linde Junior Fellow**,** Dr. Wilhelm Auwärter
  Molecular Nanoscience and Chemical Physics of Interfaces, TUM

- *Entropy of systems with nonlocal interactions*
  Speaker: Carl von Linde Junior Fellow, Dr. Vladimir Garcia-Morales
  Interfaces and Nonlinear Dynamics, TUM

- *Sequence, Structure, Function: An Insider's View on Protein Structural Genomics (*Farewell Lecture)
  Speaker: Carl von Linde Junior Fellow, Dr. Marco Punta
  Bioinformatics, TUM

- *Physics and chemistry at hybrid semiconductor interfaces*
  Speaker: Carl von Linde Junior Fellow, Dr. Ian Sharp
  Experimental Semiconductor Physics, TUM

- *Non-normal & Nonlinear Dynamics of Thermoacoustic Instabilities*
  Speaker: Hans Fischer Senior Fellow, Prof. Raman I. Sujith
  Dept. of Aerospace Engineering, Indian Institute of Technology Madras

- *1/3 – Towards a Global Design Exchange*
  Speaker: Hans Fischer Senior Fellow, Prof. Christian Werthmann
  Graduate School of Design, Harvard University

Events

- January 25, 2011 (one day): Fireside Chat on *Sources of Energy for the Future*
  Organizers: TUM-IAS, BMW

- February 10, 2011 (one day): *Japanese-German-Energy Symposium*
  Organizers: TUM-IAS Fellows Prof. Ulrich Stimming and Dr. Julia Kunze-Liebhäuser

- February 11, 2011 (one day): Workshop on *Statistical Methods and Models*
  Organizer: TUM-IAS Fellow, Prof. Claudia Klüppelberg

- February 17, 2011 (one day): Discussion Round on *Evaluation of Scientists*
  Organizer: TUM-IAS

- February 28, 2011 (one day): Symposium *Frontiers in Medicinal Chemistry*
  Organizer: TUM-IAS Fellow, Prof. Horst Kessler

- March 22, 2011 (one day): Lecture on *Innovationen als Schlüssel für die Zukunft der Mobilität*
  Speaker: Dr. Thomas Weber (Entwicklungsvorstand Daimler)

- March 23, 2011 (one day) Workshop on *Grid and Cloud Computing for Computational (Bio-) Statistics*
  Organizers: Bioinformatics, TUM (TUM-IAS Host: Prof. Burkhard Rost)

- March 31- April 1, 2011 (two days): 4th International GOCE User workshop
  Organizers: TUM-IAS Focus Group Satellite Geodesy, ESA

- April 6, 2011 (one day): Talk of Dr. Philipp Gerbert (Boston Consulting Group) on *Rebuilding the Energy Infrastructure*
  Organizer: TUM-IAS

- May 4-6, 2011 (three days): TUM-IAS General Assembly and Board of Trustees Meeting (Schloss Hohenkammer)
  Organizer: TUM-IAS

- May 10, 2011 (one day): Talk of TUM-IAS Visiting Fellow Rutger van Santen on *CH activation versus O insertion in selective oxidation of ethylene and benzene*
  Organizer: TUM-IAS

- May 12, 2011 (one day): Talk of TUM-IAS Visiting Fellow Sanjoy Mitter on *A Variational Approach to Nonlinear Estimation*
  Organizers: TUM-IAS, Mathematics Analysis Seminar

- May 13, 2011 (one day): Talk of TUM-IAS Visiting Fellow Matthew Juniper on *Hydrodynamic instabilities in aircraft gas turbine engines*
  Organizer: TUM-IAS

- May 17, 2011 (one day): Panel discussion on *Integrative Organization of Complex Dynamical Systems*
  Organizer: TUM-IAS

- May 24, 2011 (one day): Lecture of TUM-IAS Visiting Fellow Elke Weber on *When do we want it? "Now! A query theory and neuroscience account of intertemporal preference construction*
  Organizer: TUM-IAS

- May 25, 2011 (one day): Philosophy Program on *Was macht eine unternehmerische Universität aus?*
  Organizer: TUM-IAS

- May 27, 2011 (one day): Talk by Fumiko Tajima on *A Broader Look at the Magnitude-9 Tohoku Earthquake*
  Organizer: TUM-IAS

- May 27, 2011 (one day): Talk of TUM-IAS Visiting Fellow Peter Schmid on *Flow control design by Galrkin projection and system identification*
  Organizer: TUM-IAS

- May 31, 2011 (one day): Talk of TUM-IAS Board of Trustees member Frank E. on *Nano-Technology and Design Problems in Present and Future Hard Disk Drives*
  Organizer: TUM-IAS

- June 6, 2011 (one day): Lecture Series Schaltstelle Gehirn. Von der Evolution des Geistes. First speech: *Geist-Gehirn-Maschine*
  Organizers: CvLA and TUM-IAS

- June 7, 2011 (one day): Diesel Reloaded Kick-off Event
  Organizer: TUM-IAS Fellow, Prof. Gernot Spiegelberg

- June 14, 2011 (one day): IGSSE Doctoral Symposium on *Statistical Space-time Modelling for Wind Power Forecasts*
  Organizers: TUM-IAS and IGSSE

- June 15, 2011 (one day): Talk of TUM-IAS Visiting Fellow Jurg Keller on *Bio-Electrochemical Processes – A new Platform Technology with Broad Applications*
  Organizer: TUM-IAS

- June 19-22, 2011 (four days): International Scanning Probe Microscopy Conference, ISPM 2011
  Organizers: TUM-IAS Host, Prof. Johannes Barth and TUM-IAS Fellow, Dr. Willi Auwärter

- June 20, 2011 (one day): Lecture Series Schaltstelle Gehirn. Von der Evolution des Geistes. Second speech: *Die Entdeckung der Natur des Geistes*
  Organizers: CvLA and TUM-IAS

- June 24, 2011 (one day): Munich Bioinformatic Retreat 2011
  Organizers: Rostlab and TUM-IAS

- June 27, 2011 (one day): Lecture Series Schaltstelle Gehirn. Von der Evolution des Geistes. Third speech: *Optimale künstliche Intelligenz*
  Organizers: CvLA and TUM-IAS

- June 30, 2011 (one day): Talk of TUM-IAS Fellow Chin Man Mok on *An Adaptive Reliability-Based Decision Framework For Water And Hazard Management*
  Organizer: TUM-IAS

- July 5, 2011 (one day): Lecture of Alexander Efremov on *Handling Qualities Research in Russia*
  Organizer: TUM-IAS Focus Group “Aircraft Stability and Control”

- July 6, 2011 (one day): Talk of TUM-IAS Fellow Chin Man Mok on *Environmental, Hydrologic, and Geotechnical Applications of Reliability Analyses*
  Organizer: TUM-IAS

- July 11, 2011 (one day): Lecture Series Schaltstelle Gehirn. Von der Evolution des Geistes. Fourth speech: *Forschen an der Schnittstelle von Gehirn und Computer*
  Organizers: CvLA and TUM-IAS

- July 11, 2011 (one day): MSE lecture by TUM-IAS Fellow Chin Man Mok on *The expanding world of engineering: a glimpse from my path*
  Organizers: MSE and TUM-IAS

- July 13, 2011 (one day): MAC Summer Workshop 2011
  Organizer: TUM-IAS Focus Group HPC

- July 14, 2011 (one day): Talk of Honorary Hans Fischer Senior Fellow Andreas S. Schulz on *The Rank of Cutting-Plane Proof Systems*
  Organizer: TUM-IAS

- July 14, 2011 (one day): Talk of TUM-IAS Visiting Fellow Bruno Scrosati on *Lithium Batteries – a look into the future*
  Organizer: TUM-IAS

- July 14, 2011 (one day): Talk of TUM-IAS Visiting Fellow Songi Han on *Probing Molecular Interactions with Highly Amplified Magnetic Resonance Spectroscopy*
  Organizer: TUM-IAS

- July 14, 2011 (one day): Seminar on Nanoantennas: recent developments and perspectives
  Organizer: TUM-IAS Fellow Prof. Wolfgang Porod

- July 15, 2011 (one day): Talk of TUM-IAS Visiting Fellow Wolfgang Kröger on *Fukushima - Nuclear Safety Being Put to the Acid Test*
  Organizer: TUM-IAS

- July 19, 2011 (one day): Fireside Chat on *The City of the Future*
  Organizers: TUM-IAS, BMW

- July 20, 2011 (one day): Lecture of Naira Hovakimyan on *L1 Adaptive Control and Its Transition to Practice*
  Organizers: TUM-IAS Focus Group Aircraft Stability and Control

- July 21-22, 2011 (two days): International Workshop on Advances in Photovoltaic and Photocatalysis
  Organizer: TUM-IAS Host Prof. Paolo Lugli

- July 25-28, 2011 (four days): TUM-UBC interdisciplinary workshop on Multimodal & Sensorimotor Bionics
  Organizers: UBC and TUM-IAS

- July 25, 2011 (one day): Lecture Series Schaltstelle Gehirn. Von der Evolution des Geistes. Fifth speech: *Robotik und Autonome Intelligente Systeme*
  Organizers: CvLA and IAS

- August 1-5, 2011 (five days): Summer Camp on Computational Design Synthesis
  Organizers: TUM-IAS Fellow Matthew Campbell, TUM-IAS Host Kristina Shea

- September 3-10, 2011 (eight days): EMBO practical course
  Organizer: TUM-IAS Fellow Prof. Arthur Konnerth

- September 7, 2011 (one day): Talk given by TUM-IAS Visiting Fellow Brian D. O. Anderson on *Control and Information Architectures for Formations*
  Organizer: TUM-IAS

- September 6-9, 2011 (four days): TUM-UBC international workshop on *Coherence and Decoherence at Ultracold Temperatures*
  Organizers: UBC and TUM-IAS

- September 12-13, 2011 (two days): International workshop on *Frontiers of Functional Interfaces*
  Organizers: TUM-IAS Fellows Gerhard Abstreiter and Ian Sharp

- September 12, 2011 (one day): Workshop on *the Numerical Solution of the Chemical Master Equation in Molecular Biology*
  Organizer: TUM-IAS Fellow Markus Hegland

- September 13-14, 2011 (two days): Symposium *From Risk Perception to Safety Management – Today and Tomorrow*
  Organizer: TÜV Fellow Prof. Hollnagel

- September 28-29, 2011 (two days): International Symposium on *Cardiovascular Prevention in Childhood - New Insight*
  Organizers: Renate Oberhoffer and John Hess (German Heart Centre)

- September 30, 2011 (one day): Seminar of TUM-IAS Visiting Fellow Prof. Víctor Pérez Abreu (CIMAT) on *Random Matrices and Free Probability*
  Organizer: TUM-IAS

- September 30, 2011 (one day): Public Talk given by Dr. Andrej Jokic, TU Eindhoven on *Market-Based Power Systems A Control Perspective* (Vorhoelzer Forum)
  Organizer: Focus Group Networked Dynamical Systems

- October 1, 2011 (one day): Seminar of TUM-IAS Visiting Fellow Prof. Víctor Pérez Abreu (CIMAT) on *"Random Matrices and Free Probability"*
  Organizer: TUM-IAS

- October 13-14, 2011 (two days): Symposium *"Metropolis Nonformal Landscape, Infrastructure and Urbanism in the Global South"*
  Organizers: TUM-IAS Fellow Prof. Christian Werthmann/Prof. Regine Keller

- October 13-15, 2011: International symposium on *"Exercise and Cancer - Impact on prevention and prognosis"* (Klinikum rechts der Isar)
  Speaker: TUM-IAS Visiting Fellow Prof. Steven N. Blair, talk on *"How to help your patients maintain healthful levels of physical activity"*
  Organizer: TUM-IAS and Klinikum rechts der Isar

- October 14, 2011 (one day): Seminar of TUM-IAS Visiting Fellow Prof. Víctor Pérez Abreu (CIMAT) on *"Random Matrices and Free Probability"*
  Organizer: TUM-IAS

- October 15, 2011 (one day): Tag der offenen Tür Garching

- October 25, 2011 (one day): Workshop on *Frontiers in DNA Nanoscience: Designed Nucleic Acid Structures in Physics, Chemistry, and Biology*
  Organizer: TUM-IAS Fellow Prof. Hendrik Dietz, ZNN

- October 27-29, 2011 (three days): Colloquium *"Continuity in Energy Regimes"*
  Organizers: TUM-IAS and UBC

- November 10, 2011 (one day): First lecture of a lecture series on *Science and Society – Meet with Excellence:* "*Engineering for a sustainable society – 2030, technology that will change the world*" (Prof. Rutger van Santen)
  Organizer: TUM-IAS

- November 24, 2011 (one day): TUM-IAS Faculty Day on *"Wie misst man wissenschaftliche Leistung"*
  Organizer: TUM-IAS

- November 27-30, 2011(four days): *The 12th Otto Loewi Symposium* at the Inter University Institute in Eilat, Israel
  Organizer: TUM-IAS Visiting Fellow Prof. Yosi Yarom and TUM-IAS Carl von Linde Senior Fellow Prof. Arthur Konnerth

- November 29-30, December 2, 5-6, 2011 (five days): Lecture Series *Risk-Based Subsurface Environmental Management"*
  Organizer: TUM-IAS Rudolf Diesel Industry Fellow Dr. Bill Mok and Prof. Daniel Straub

- December 15, 2011 (one day): Lecture Series on *Science and Society – Meet with Excellence: "Städte im Dunkeln – Sozio-ökologische Infrastruktur für die explodierenden Megaslums der Welt"* (Prof. Christian Werthmann)
  Organizer: TUM-IAS

Selected Publications with Impact Factor

Journal	Number	IF 2009/2010	IF 2008	IF 2006
ACM Transactions on Graphics	1	3.619		
Ad. Mater.	2	8.379		
Advanced Robotics	2	0.629		
Advances in Space Research	3	1.079		
American Journal of Neuroradiology	1	3.464		
Analytical Chemistry	1	5.214		
Angewandte Chemie International Edition	6	11.829		
Ann. Appl. Probab.	1	1.130		
Applied Physics Letters	2	3.554		
at-Automatisierungstechnik	2	0.378		
Bernoulli	2	1.000		
Biology of Blood and Marrow Transplantation	1	3.275		
Blood	4	10.558		
Brain	1	9.490		
Cereb Cortex	1	6.979		
Chem. Mater.	1	5.368		
ChemPhysChem	1	3.453		
Clinical Cancer Research	1	7.338		
Comput. Graph. Forum	1	1.681		
Computational Mechanics	1	1.517		
Current Opinion in Immunology	1	10.881		
Current Opinion in Structural Biology	1	9.344		
Econometric Theory	1	0.743		
Environmental Science and Technology	1	4.825		
European Urology	1	8.843		
Genome Research	1	11.342		
Geoderma	1	2.176		
Global Change Biology	1	5.561		
Global Ecology and Biogeography	1	5.913		
IEEE Transactions on Robotics	1	2.035		
Immunity	1	24.221		
International Journal for Numerical Methods in Engineering	4	1.925		
International Journal of Fracture	3	1.043		
International Journal of Humanoid Robotics	1	1.230		
International Journal of Solids and Structures	1	1.677		
J Mater. Chem.	1	4.795		
J Neurosci	1	7.178	7.452	
J. Amer. Chem. Soc.	6	8.580		
J. Appl. Phys.	1	2.072		
J. Phys.: Condens. Matter	1	1.964		
Journal High Energy Phys.	5	6.019		
Journal of Biological Chemistry	1	5.328		

Journal of Biomechanical Engineering	1	1.602		
Journal of Biomechanics	1	2.657		
Journal of Computational and Nonlinear Dynamics	1	0.571		
Journal of Computer Assisted Tomography	1	1.383		
Journal of Computational Physics	2	2.345		
Journal of Experimental Medicine	1	14.776		
Journal of Fluid Mechanics	1	2.283		
Journal of Geodesy	5	2.429		
Journal of Magnetic Resonance Imaging	2	2.333		
Journal of Plant Nutrition and Soil Science	1	1.969		
Journal of the Mechanics and Physics of Solids	3	3.701		
Langmuir	1	3.898		
MAGMA	1	1.859		
Modelling and Simulation in Materials Science and Engineering	2	1.374		
Mol. Cell.	1	14.608		
Molecular Therapy	1	7.149		
Nano Letters	8	9.991		
Nanotechnology	2	3.137		
Nature	8	34.480	31.434	26.681
Nature Chemistry	1	17.927		
Nature Medicine	1	27.136		
Nature Methods	1	20.717		
Nature Protocols	2	6.335	4.170	
Neuron	1	13.260		
New J. Phys.	1	3.312		
Nuclear Physics B	2	4.341		
Philosophical Magazine	1	1.302		
Physica status solidi (RRL)	1	2.815		
Physical Review B	5	3.772		
Physical Review D	4	4.922		
Physical Review E	1	2.400		
Physics Letters B	1	5.083		
Plant and Soil	4	2.773		
Proc. Nat. Acad. Sci. Am	6	9.432		
Proteins	2	3.085		
Pure appl. Geophys	1	0.938		
Quantitative Finance	2	0.621		
Reliability Engineering and System Safety	1	1.897		
Science	2	29.747	28.103	
SIAM J. Numer. Anal.	1	1.840		
Stochastic Processes and Their	1	1.543		

Applications				
Surveys in Geophysics	1	3.590		
The Journal of Cell Biology	1	9.58		
Veterinary Journal	1	2.323		

Gerhard Beutler / Adrian Jäggi

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Ian Sharp

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Raman I. Sujith

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Zohar Yosibash

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Kolja Kühnlenz

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Julia Kunze-Liebhäuser

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Major Grants and Awards

2007

Prof. Thomas Misgeld
- Schilling Award, German Neuroscience Society

2008

Prof. Reiner Rummel
- Bavarian Order of Merit

2009

Prof. Gerhard Abstreiter
- Member of acatech

Prof. Horst Kessler
- Josef Rudinger Award of the European Peptide Society
- Honorary membership of the Israel Chemical society
- Honorary membership of the Nuclear Magnetic Resonance Society India

Prof. Claudia Klüppelberg
- Olga Taussky-Pauli Fellow at the Wolfgang Pauli Institute, Vienna
- IMS Medaillon Lecture at the 33rd Conference on "Stochastic Process and Their Applications", Berlin

2010

Prof. Andrzej Buras
- “FLAVOUR,” ERC Advanced Investigator Grant, European Research Council, 2011 - 2016
- Schrödinger Guest Professor of the University of Vienna (Oct. 17 - Nov. 10)
- Election to Ordinary member of the Bavarian Academy of Sciences and Humanities.

Prof. Hendrik Dietz
- “DNA ORIGAMI DEVICES,” ERC Starting Independent Researcher Grant, European Research Council
- Arnold Sommerfeld Preis of the Bavarian Academy of Sciences and Humanities.

Prof. Walter Kucharczyk
- Distinguished Service Medal (Distinction), Fellow (FISMRM) (Distinction), and Outstanding Teacher Award, International Society of Magnetic Resonance in Medicine, Stockholm, Sweden.

Dr. Kolja Kühnlenz

- FP7 STREP project "IURO - Interactive Urban Robot"

Focus Group Neuroscience

- DFG-Graduiertenkolleg (GRK 1373) “Brain signaling: from neurons to networks” (Speaker: Prof. Arthur Konnerth), funding until 2015
- Prof. Thomas Misgeld, Prof. Arthur Konnerth and teams from Israel and Italy: “High-speed two-photon imaging for in vivo analysis of brain disease” (Speaker: Prof. Arthur Konnerth), EU grant within the ERA-Net NEURON framework
- Prof. Thomas Misgeld: “Sachmittelbeihilfe” from Alexander von Humboldt Foundation for a two-photon microscope
- PhD student Hongbo Jia, “Scopus Young Neuroscientist Award.”

Prof. Horst Kessler

- Honorary Membership "Fachgruppe Magnetische Resonanzspektroskopie," German Chemical Society
- Klassensekretar, Mathematisch-Naturwissenschaftlichen Klasse of the Bavarian Academy of Sciences and Humanities.

Prof. Shuit-Tong Lee

- Research Grants Council of Hong Kong SAR “High-efficiency photocatalyst design based on up-converted carbon nanoparticles.”

Prof. Wolfgang Porod

- Prof. Wolfgang Porod, Prof. Paolo Lugli, Prof. Doris Schmitt-Landsiedel, and industry partners IBM and Grandis, Inc.: “NanoMagnet Logic," DARPA-funded project for 4.5 years
- “NanoMagnet Logic,” Midwest Center for Nanoelectronics Discovery (MIND), second phase of funding.

Prof. Stanley Riddell

- Election to the Association of American Physicians
- E. Donnall Thomas Lecture, American Society of Blood and Marrow Transplantation.

Prof. Reiner Rummel

- Bayerischer Maximiliansorden für Wissenschaft und Kunst.

Prof. Ulrich Stimming

- Electrochimica Acta Gold Medal.

Prof. David A. Weitz

- Election to the National Academy of Sciences, USA
- Election to the American Academy of Arts and Sciences.

Prof. Zohar Yosibash

- German Research Foundation, “Electro-thermo-mechanical modeling of Field Assisted Sintering Technology using high-order finite elements validated by experiments” (Prof. Ernst Rank, Prof. Zohar Yosibash et al.), funding for two years

2011

Prof. Andreas Bausch

- “CompNet,” ERC Starting Independent Researcher Grant

Prof. Andrzej Buras

- Foreign member of the Polish Academy of Arts and Sciences in Cracow

Prof. Martin Buss

- Order of Merit of the Federal Republic of Germany
- ERC Advanced Investigator Grant
- Member of the European Academy of Sciences and Arts

Prof. Patrick Dewilde

- V. Belevitch Award of the IEEE Circuits and Systems Society

Prof. Horst Kessler

- Adjunct Professorship Chemistry Department, King Abdulaziz University, Saudi Arabia

Prof. Klaus von Klitzing

- TUM Distinguished Affiliated Professor

Prof. Arthur Konnerth

- Member of the Bayerische Akademie der Wissenschaften

Prof. Annette Menzel

- ERC Starting Independent Researcher Grant

Dr. Ulrich Rant

- Start-up funding from BMBF within the program GO-Bio (2.3 Mio€; July 2011-June 2013)

Prof. Ulrich Stimming

- Fellow of the International Society of Electrochemistry (ISE)

Prof. Rüdiger Westermann

- ERC Advanced Investigator Grant

Prof. Zohar Yosibash

- Israel Ministry of Health, Chief Scientist Grant on ”Novel computational methods for predicting bone fractures due to metastatic/benign tumors” (2011-2013)